NEUROPSYCHOLOGICAL REHABILITATION SPECIAL INTEREST GROUP OF THE WFNR

14th NR-SIG-WFNR Conference

Monday 10th & Tuesday 11th July 2017

Townhouse Hotel, Cape Town, South Africa

Conference Programme

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WELCOME

On behalf of Barbara Wilson, the NR-SIG-WFNR Executive Committee, the local organising Committee and the Scientific Committee we would like to welcome you to the Townhouse Hotel, Cape Town, South Africa for the 14th Neuropsychological Rehabilitation Conference.

This is a multidisciplinary conference incorporating all rehabilitation disciplines including Neuropsychology, Clinical Psychology, Occupational Therapy, Speech and Language Therapy, Physiotherapy, Social Work, Medicine and Nursing. The primary focus of the conference is rehabilitation of neuropsychological consequences of acquired brain impairment.

The conference will start with an opening address by Professor Barbara A. Wilson entitled "Lessons from the Past" and will include sessions on: Treatment Studies, Patient and family experiences, Child neuropsychology, Assessment, Emotions and social cognition, Health care, Participation, MS, PD and HS, Assistive Technology and Assessment

We would like to thank the WFNR for their ongoing support, our sponsors Routledge (Taylor & Francis Group), Cambridge University Press, The Encephalitis Society. Satchel Insert Sponsors Cambridge Scholars Publishing, The Australasian Society for the Study of Brain Impairment (ASSBI) The DT Group and Hogrefe Ltd for their support of the conference. We would also like to thank all the staff at the Townhouse Hotel, Margaret Eagers for managing the conference and Graham Rickit from MERS Events for helping with the posters and our student volunteers. Last but not least we'd like to thank all the delegates who have come from across the world to attend this conference once again this year.

We hope you enjoy the conference!

Caroline van Heugten and Anita Rose
Co-Conference Chairs

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Conference Venue

The Townhouse Hotel, 60 Corporation Street, Cape Town City Centre, Cape Town, 8001 South Africa.
The Townhouse has been open since 1973, this urban hotel is a 2-minute walk from District Six Museum and 6 minutes from Cape Town train station. It boasts Room Service, Business centre, Laundry service, satellite TV, tea and coffee making facilities and free Wi-Fi.

about our history & people

The site of our hotel has seen more than 350 years of city history. Set over a stream that once fed ships and the Dutch Company Gardens, over time it has been a pasture, flour mill, part of a failed silk industry, a barracks, tavern and also the small Trocadero Hotel. Bought by the Petousis hoteling family in 1973, it would make way for the Dorpshuis and later, the 12 storey Townhouse. Today our 100-strong team still represents the many cultures and nations that built our city. Our motto: 'dare to care'.

townhouse dining

Townhouse has been a favoured spot for city diners for some 40-years. Today, Chef Stefan Schmidt continues our gourmet heritage with classic and contemporary dishes that showcase the best of local seafood, meats, produce and Cape wines. Enjoy them at our signature Trees Restaurant or Trees Café.

leisure

Cape Town is Africa's tourism capital and Townhouse's central location affords access to every kind of historic, cultural, scenic, shopping and entertainment experience. Many top sights are a mere stroll from the Hotel. Or explore the breathtaking wonders of the Peninsula coast and the legendary Winelands further afield via sightseeing bus or tour.

Sunday Evening – 7pm – 8pm

Routledge book launch for 'Neuropsychological Rehabilitation: The International Handbook' will be held during the Welcome Reception in the Mostert Foyer from 7pm – 8pm – ALL WELCOME

Conference Dinner

The Conference Dinner will be held at Moyo Kirstenbosch, on Monday 11th July. The dinner will be fantastic fun and will include a 3-course buffet meal (served at your table), 3-hour drink package and music by Marimba Band. Bus leaves from The Townhouse Hotel at 6.45pm for a 7.30pm sit down.

Acclaimed as one of the great botanical gardens of the world, this breath-taking backdrop of nature is now part of the warm, friendly and relaxed moyo African charm – beautiful vistas, Afro entertainment and cuisine composed of the best of African produce.

moyo Kirstenbosch is nestled inside Kirstenbosch National Botanical Gardens situated at the foot of one of the 7 wonders of the world.

Speaker Information

- **PLATFORM and DATABLITZ** presentations should be loaded onto the computer first thing in the morning after you register or at the end of lunch with Daniel who will be seated at a table next to the registration desk.
- **ALL POSTERS** go to the table next to the registration desk on Monday morning see Graham who will help you out.

Delegate Information

- The registration desk is located in Mostert Foyer and will be open from 7.30am until 3.30pm both days
- The conference will be held in Mostert Rooms 2-3
- ALL posters and Exhibitors will be in Mostert 1 and in the Foyer
- Lunch will be held in Trees Restaurant on the 1st Floor
- Please wear your name badge at all times
- If you require any help please ask at the registration desk
- Those who indicated special dietary requirements please speak with one of the catering staff as these have been ordered for you
- Morning and Afternoon tea will be served in the Exhibition/Poster area on both days
- **Exhibitors have put a lot of time, effort and money into supporting the conference and the committee encourage you to take some time to talk with them while you are on your breaks**

Insurance and Disclaimer

Information on Insurance and Disclaimer was provided on the registration website and agreed to by all delegates when registering

Delegates and other invitees must observe the requests or directions of MERS staff and Townhouse Hotel staff

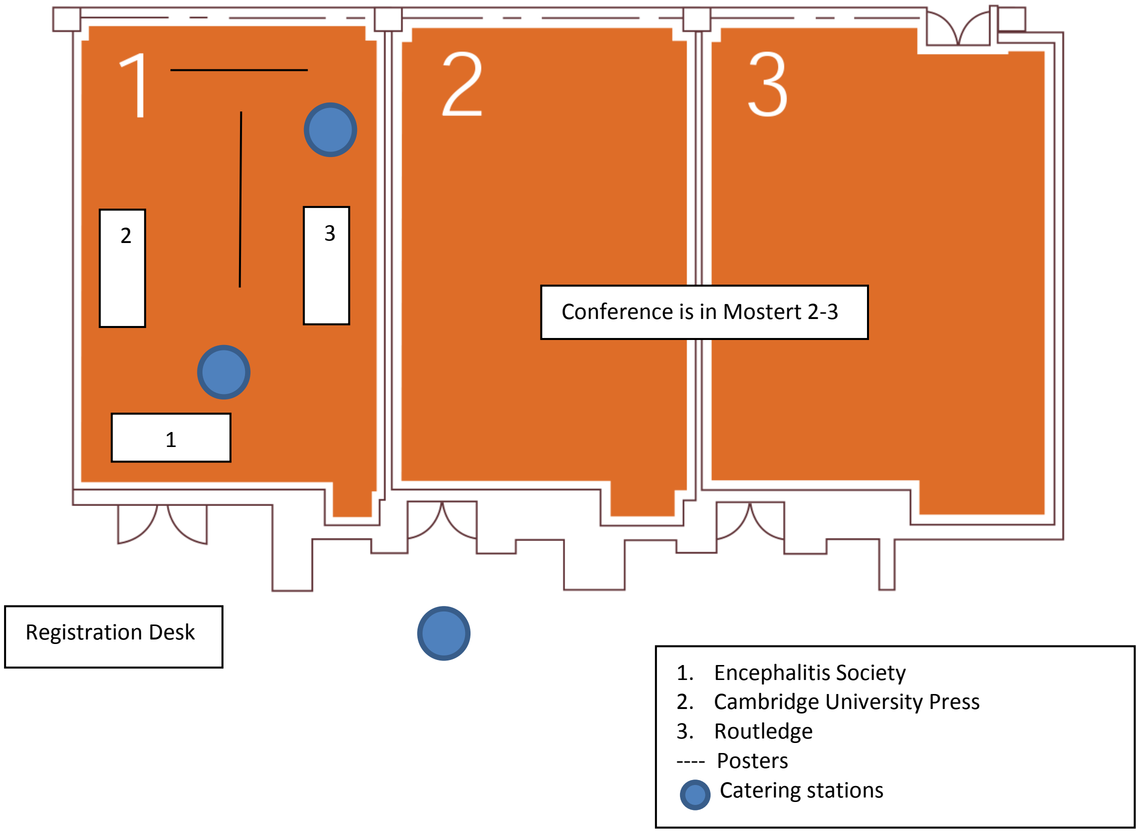
Included in Registration Fees

- An interesting and varied program of speakers and poster presentations
- Drinks on Sunday evening
- Morning tea, lunch and afternoon tea
- A book containing the program and abstracts
- Information from our Sponsors
- Flyers for future conferences

This program contains a Program at a Glance with speakers' names and titles of presentations. Abstracts are printed in the back of the program in the order of appearance and a list of delegates that a) agreed to have their names printed and b) had registered by the time we went to print.

The Townhouse Hotel Plans

The Welcome Reception and Routledge book launch for 'Neuropsychological Rehabilitation: The International Handbook' will be held in the Mostert Foyer
The conference room is Mostert 2-3 which is located on the Upper Ground level
Registration Desk, Presentation and Poster drop desk, will be in the Foyer
Morning/Afternoon Tea, Exhibitors, Datablitz Posters and Posters will be in Mostert 1 and Foyer
Lunch will be held in Trees Restaurant on the 1st Floor



MONDAY 10th July

7.30-8.30	**Arrival, Registration and Dropping Posters at Registration Desk**
8.30	Welcome and Introduction – Caroline van Heugten and Anita Rose (Program Chair)
8.40	**Chair: Caroline van Heugten** **Professor Barbara Wilson – Opening Address** *Lessons from the past*
	Session 1: Treatment studies (1) – 9.10 – 10.10 **Chair: Tamara Ownsworth**
9:10	**Tessa Hart:** *Anger Self-Management Training for chronic moderate to severe traumatic brain injury: Results of a randomized controlled trial*
9.30	**Jennie Ponsford:** *Cognitive Behaviour Therapy for Sleep Disturbance and Fatigue Following Acquired Brain Injury: Pilot Randomised Controlled Trial*
9.50	**Charlotte Wainwright:** *The Efficacy of Problem Solving Therapy with Younger (18-65) Stroke Survivors*
	Session 2: Treatment studies (2) – 10.15 – 10.55 **Chair: Caroline van Heugten**
10.15	**Tamara Ownsworth:** *A randomised controlled trial of error-based learning and errorless learning for people with severe traumatic brain injury*
10.35	**Carline Tan:** *Effectiveness of Phonological Cueing Therapy for Naming Deficits in a Mandarin-speaking Patient*
10.55-11.25	Morning tea
	Session 3: Treatment studies (Datablitz) – 11.25 – 11.50 **Chair: Jennie Ponsford**
11.25	***Anita Rose:*** *The effectiveness of errorless learning in a patient with significant orientation deficits (DB1)*
11.30	***Agnes Shiel****: The effectiveness of an individualised Cognitive Stimulation Therapy programme on cognition, communication, quality of life and behaviour for nursing home residents with mild-moderate dementia (DB2)*
11.35	***Luciano Fasotti:*** *Can the effects of Goal Management Training be improved by the incorporation of additional therapeutical strategies? Evidence for Errorless Learning and Working Memory Updating strategies in patients with executive impairments (DB3)*
11.40	***Dilys Jones:*** *Training listeners to understand dysarthric speech (DB4)*
11.45	***Daniel Mograbi:*** *Adaptation and validation of Cognitive Stimulation Therapy for dementia in Brazil (DB5)*
	Session 4: Patient and family experiences (Datablitz) – 11.55 – 12.15 **Chair: Anita Rose**
11.55	**Barbara Wilson:** *People with impaired person recognition: Are they able to recognise personally known individuals better than celebrities? A Review (DB6)*
12.00	**Charlotte Wainwright:** *The experiences of younger stroke survivors in New Zealand (DB7)*
12.05	**Gerard Riley:** *Experiencing the journey towards acceptance after acquired brain injury (DB8)*
12.10	**Natasha Yasmin:** *Family interventions after brain injury: A systematic review (DB9)*
12.20-1.20	Lunch
	Session 5: Child neuropsychology – 1.20 – 3.00 **Chair: Mathilde Chevignard**
1.20	**Chrisma Pretorius:** *The father's experience: A South African perspective on caring for a child with autism spectrum disorder*
1.40	**Mathilde Chevignard:** *Prospective Memory performance following severe childhood traumatic brain injury: results of a prospective longitudinal study: the seven-year follow-up of the TGE cohort*
2.00	**Melanie Porter:** *CBT for Anxious Children with Comorbid ADHD: Outcomes from a Large, Combined Sample*
2.20	**Leigh Schrieff-Elson:** *An update on establishing a South African pediatric neuropsychology research and rehabilitation program: What we've done, what we've learned and where we're going*
2.40	**Agnes Shiel:** *Parents' and PE teachers' knowledge of sports related concussion within a paediatric population in Ireland*
3.00-3.30	Afternoon Tea Poster Session 1
	Session 6: Assessment – 3.30 – 4.50 **Chair: Jon Evans**
3.30	**Ashok Jansari:** *My Brain Made Me Do It: Using An Ecologically-Valid Assessment Of Executive Functions To Investigate The Potential Involvement Of Head Injuries In Subsequent Criminal Behaviour*
3.50	**Ava Easton:** *The European Brain Injury Questionnaire (EBIQ) and Outcomes Following Encephalitis*
4.10	**Jamie Berry:** *Feasibility and sensitivity of a modified version of Goal Attainment Scaling (GAS) across different neuropsychological intervention contexts*
4.30	**John Deluca:** *Executive function predicts responsiveness to memory rehabilitation for individuals with multiple sclerosis*
4.50	Close for the day
6.30-10.30	Conference Dinner at Moyo Kirstenbosch

TUESDAY 11th July

8:30-9:00	Arrival – Drop Posters at Registration Desk
	Session 7: Emotions and social cognition – 9.00 – 9.40
	Chair: Skye McDonald
9.00	**Travis Wearne:** *Heart rate variability biofeedback: Can it be used to regulate emotion for individuals with traumatic brain injury?*
9.20	**Satu Baylan:** *A qualitative investigation of stroke survivors' experiences of participation in MELLO – a pilot randomised controlled trial of music listening and mindfulness interventions*
	Session 8: Health care (Datablitz) – 9.45 – 10.10
	Chair: Rudolf Ponds
9.45	**Jessica Fish:** *Training Support Workers to ensure continued rehabilitation success (DB10)*
9.50	**Elisa Lavelle Wijohn:** *If brain injury is a family injury, how can we better frame research to improve the lives of whānau and impact policy? An Aotearoa New Zealand perspective (DB11)*
9.55	**Jill Winegardner:** *A novel approach to interdisciplinary team assessment: Joining the dots (DB12)*
10.00	**Agnes Shiel:** *A pilot study of the impact of cost-effective dementia friendly environments on participation and agitation of people with dementia in residential care (DB13)*
10.10-10.40	Morning tea
	Session 9: Participation – 10.40 – 11.40
	Chair: Luciano Fasotti
10.40	**Caroline van Heugten:** *Participation trajectories in the first 2 years after stroke*
11.00	**Lee Cubis:** *Staying connected after brain tumour: changes in social networks and relationship to wellbeing after brain tumour*
11.20	**Caroline van Heugten:** *Psychological factors after stroke: are they stable over time?*
	Session 10: MS, PD and HS (Datablitz) – 11.45 – 12.00
	Chair: Anita Rose
11.45	**Andrew James:** *Psychosocial impact of Impulse Control Disorders in Parkinson's Disease (DB14)*
11.50	**Jessica Fish:** *Thirty-two years in the perpetual present: a long-term follow up of profound amnesia following herpes simplex virus encephalitis (DB15)*
12.00-1.00	Lunch
	Session 11: Assistive technology – 1.00 – 1.40
	Chair: Caroline van Heugten
1.00	**Matthew Jamieson:** *Initiate Project; Developing Assistive Technologies to Increase Activity and Engagement in Meaningful Activities for People with Acquired Brain Injury*
1.20	**Ashok Jansari:** *The frontal paradox demonstrated in patients with focal neurosurgical prefrontal lesions using a virtual reality measurement of multi-tasking*
	Session 12: Assessment (Datablitz) – 1.45 – 2.00
	Chair: Jennie Ponsford
1.45	**Nancy Barber:** *Early recovery profiles of language and executive functions in blingual persons following brain injury (DB16)*
1.50	**Anita Rose:** *What is the relationship between the JFK Coma Recovery Scale -revised and the Wessex Head Injury Matrix? (DB17)*
2.00-2.30	Afternoon tea Poster Session 2
	Session 13: Assessment – 2.30 – 3.20
	Chair: Ashok Jansari
2.30	**Sara Simblett:** *Cross-cultural and trans-diagnostic facilitators and barriers to remote assessment in healthcare for people with multiple sclerosis, epilepsy and depression: a qualitative analysis*
2.40	**Barbara Wilson:** *How similarly do patients with Locked-In Syndrome (LIS) perform on neuropsychological tests? A comparison of two survivors of LIS.*
3.00	**Skye McDonald:** *Connections matter: loss of social cognition is associated with white matter loss in traumatic brain injury*
3.20	**Rudolf Ponds:** *Symptom validity in neuropsychological rehabilitation*
3.40	Conference close: Professor Barbara Wilson
4.00	AGM of the NR-SIG-WFNR

Number	Name	Title
1	Shirley-Ann Botha	Working 9 to 5: Vocational Rehabilitation in Post Concussion Syndrome
2	Ella Clark	One size does not fit all: stroke survivor views on a group self-management interventions
3	Gerard Riley	Relationship continuity and the understanding and management of challenging behaviours in partners of people with acquired brain injury
4	Thompson Sarkodie-Gyan	Analysis of human dynamic behavior in Space: assessment and evaluation of mobility-related functional impairments

ABSTRACTS – MONDAY 10th JULY

Welcome and Opening Address

Lessons From The Past

Wilson, Barbara[1,2]
[1]Raphael Medical Centre, Tonbridge, Kent, UK
[2]Oliver Zangwill Centre, Ely, UK

Although neuropsychological rehabilitation has quite a long history, some of the most important of its findings have been forgotten, overlooked or ignored. This talk addresses certain studies which, although they have been influential in rehabilitation, are perhaps unrecognised by present day practitioners. I begin by discussing the work of Kurt Goldstein. Although he may be credited as one of the pioneers of modern day rehabilitation, I want to go further by suggesting that he was responsible for promoting *ecological* assessment procedures. He believed the tests used by psychologists to assess whether or not brain injured soldiers from World War One (WW1) could return to work, were not appropriate as they were removed from everyday working life. Working at the same time and also with soldiers from WW1 was Walter Poppelreuter, who wrote the first book on brain injury rehabilitation. He wrote detailed descriptions of the visual perceptual and visuospatial disorders experienced by soldiers who had survived damage to occipital areas, and his book still provides valuable information. Moving on to WW2 we come to Luria who is known to all. What is less widely known is one of his treatment strategies, which was, in fact, shaping, later to become a popular behaviour modification strategy. Between the wars, Irving Lorge was active in studies of learning and his work on time intervals led to later work on spaced retrieval, a crucially important finding in memory rehabilitation. Weinstein's work on denial and the influence this had had on rehabilitation concludes the presentation.

Correspondence: Barbara A. Wilson; barbara.wilson00@gmail.com

Session 1: Treatment studies

Anger Self-Management Training for chronic moderate to severe traumatic brain injury: Results of a randomized controlled trial

Hart, Tessa[1]; Brockway, Jo Ann[2]; Maiuro, Roland D.[3]; Vaccaro, Monica[1]; Fann, Jesse R.[3]; Mellick, David[4]; Harrison-Felix, Cynthia[4]; Barber, Jason[5] and Temkin, Nancy[5]
[1]Moss Rehabilitation Research Institute, Elkins Park, PA, USA
[2]Department of Physical Medicine and Rehabilitation, University of Washington, Seattle, WA, USA
[3]Department of Psychiatry & Behavioral Sciences, University of Washington School of Medicine, Seattle, WA, USA
[4]Craig Hospital, Englewood, CO, USA
[5]Department of Neurological Surgery, University of Washington, Seattle, WA

Background and aims: Problematic anger/ irritability is a clinically important and persistent problem for many persons with moderate/ severe TBI, but few treatments are available. On the hypothesis that the experience and expression of anger are exacerbated by executive dysfunction, we developed an 8-session individual treatment called Anger Self-Management Training (ASMT), designed to improve the executive components of self-monitoring and problem-solving in anger provoking situations. This report presents the findings of a 3-center randomized controlled trial testing the efficacy of ASMT.

Method: 99 participants with chronic, moderate/ severe TBI and problematic anger/ irritability were randomized 2:1 to ASMT or to a structurally equivalent comparison treatment, Personal Readjustment and Education (PRE), which focused on TBI education and ventilation of feelings in a supportive atmosphere. 76 significant others (SOs) provided collateral data at baseline and each assessment wave (mid-treatment, post-treatment, 8-week follow-up).

Results: ASMT resulted in faster and ultimately greater improvements in self-reported trait anger compared to PRE, which persisted at follow-up. However, results were not consistent across different aspects of anger, such as outward expression, nor for SO-reported anger. There were no between-group differences on secondary outcomes such as emotional distress or quality of life.

Conclusions: Anger self-management training was efficacious and persistent for some aspects of problematic anger. The use of a strong comparison treatment highlights the complexities in identifying "active ingredients" of psychoeducational treatments. More work is needed to determine the optimal dose and essential ingredients of behavioral treatment for anger following TBI.

Correspondence: Tessa Hart; thart@einstein.edu

Cognitive Behaviour Therapy for Sleep Disturbance and Fatigue Following Acquired Brain Injury: Pilot Randomised Controlled Trial

Nguyen, Sylvia[1,2]; McKay, Adam[1,2]; Wong, Dana[1,2] and Ponsford, Jennie[1,2]
[1]Monash Institute of Cognitive & Clinical Neurosciences and School of Psychological Sciences, Monash University, VIC, Australia
[2]Monash-Epworth Rehabilitation Research Centre, Melbourne, VIC, Australia

Background and aims: Sleep disturbance and fatigue are common phenomena following acquired brain injury (ABI). Management of these symptoms are important targets in rehabilitation yet there is limited empirical investigation into effective interventions. A randomised controlled trial (RCT) was conducted to evaluate whether cognitive behaviour therapy (CBT) can be successfully adapted to alleviate sleep disturbance and fatigue in an ABI cohort.

Method: Participants (n=34) with history of traumatic brain injury (TBI) or stroke were randomly allocated to intervention (CBT) or treatment as usual (TAU). The intervention consisted of eight weekly therapy sessions with a neuropsychologist. CBT was delivered according to a manualised protocol and adapted to accommodate for cognitive impairments. Participants were reassessed at two and four months from baseline on measures of sleep, fatigue and mood.

Results: Relative to TAU, participants in the CBT group reported significantly greater improvements in sleep on the Pittsburgh Sleep Quality Index (p=0.018) and Insomnia Severity Scale (p=0.016). Reductions on fatigue was noted on different measures for TBI and stroke participants, the former evidencing significant change on the Brief Fatigue Inventory (p=0.016) and the latter on the Fatigue Severity Scale (p=0.02). Secondary improvements were found in depression on the Hospital Anxiety and Depression Scale (p=0.000). Gains were maintained at follow-up with large treatment effects.

Conclusions: Adapted CBT was effective in remediating sleep disturbance, fatigue and depression over TAU, with lasting effects for two months after therapy cessation. From this pilot study, CBT represents a promising intervention for these symptoms in persons with ABI.

Correspondence: Jennie Ponsford; jennie.ponsford@monash.edu

The Efficacy of Problem Solving Therapy with Younger (18-65) Stroke Survivors

Wainwright, Charlotte[1]; Leathem, Janet[1]; Bennett, Simon[1]; McNaughton, Harry[2] and Mahawish, Karim[3]
[1]School of Psychology, Massey University, Wellington, New Zealand
[2]Capital & Coast DHB Neurology Service, Wellington Hospital, Wellington, New Zealand
[3]Stroke Medicine and Elderly Care, Rotorua Hospital, Rotorua, New Zealand

Background and aims: Stroke is predominantly experienced by those over 65 years, therefore research investigating the efficacy of therapies to reduce post stroke emotional distress has focused on older stroke survivors. Consequently, there is limited research with younger stroke survivors. The current study evaluated the efficacy of problem solving therapy (PST) for reducing levels of depression and anxiety and increasing problem solving skills and quality of life with younger stroke survivors.

Method: The analysis was split into two parts. Outcome measures for the treatment group (n = 13) were compared with measures collected from a wait-list control group (n = 16) at baseline and time 2. These two groups were then combined and an analysis was completed on outcome measures at baseline, time 2 and follow-up for the participants who took part in PST (n = 28).

Results: Changes on outcome measures between baseline and time 2 for the treatment group were not significantly different to those of the waitlist control group. When the two groups were combined the intervention group (n = 28) reduced significantly in levels of depression and anxiety and increased in quality of life from baseline to follow up.

Conclusions: The within-subject design indicates that group therapy is beneficial for younger stroke survivors, however it remains unclear whether PST was the essential element that resulted in improvements. Future studies should be run that include social support control groups to determine which mechanisms are beneficial for younger stroke survivors.

Correspondence: Charlotte Wainwright; char.pr.wainwright@gmail.com

Session 2: Treatment studies (2)

A randomised controlled trial of error-based learning and errorless learning for people with severe traumatic brain injury

Ownsworth, Tamara[1]; Fleming, Jennifer[2]; Tate, Robyn[3]; Beadle, Elizabeth[1]; Griffin, Janelle[4]; Kendall, Melissa[5]; Schmidt, Julia[6]; Lane-Brown, Amanda[7]; Chevignard, Mathilde[8] and Shum, David. H. K.[1]
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[2]School of Health and Rehabilitation Sciences, University of Queensland, St Lucia, Australia
[3]John Walsh Centre for Rehabilitation Research, Kolling Institute of Medical Research, The University of Sydney, Australia
[4]Princess Alexandra Hospital, Wooloongabba, Australia
[5]Acquired Brain Injury Outreach Service, Brisbane, Australia
[6]Faculty of Medicine, University of British Columbia, Vancouver, Canada
[7]Brain Injury Rehabilitation Unit, Liverpool Hospital, Sydney, Australia
[8]Rehabilitation Department for Children with Acquired Neurological Injury (INR-A), Hôpitaux de Saint Maurice, Saint Maurice, France

Background and aims: Errorless learning (ELL) and error-based learning (EBL) are commonly used rehabilitation approaches for people with traumatic brain injury (TBI). However, it is unknown whether making errors is beneficial in the learning process. This study aimed to compare the efficacy of ELL and EBL for improving self-regulation and self-awareness after severe TBI.

Method: 54 adults (79% male; *M* age = 38.0 years, *SD* = 13.4) with severe TBI were randomly allocated to ELL or EBL and received eight training sessions with an therapist that involved meal preparation and other goal-directed activities. The primary outcome was total errors on the Cooking Task (near transfer) and secondary outcomes included the Zoo Map Test (far transfer), Patient Competency Rating Scale and measures of psychosocial functioning (e.g., mood, independence, work).

Results: Controlling for baseline performance, EBL participants made significantly fewer errors on the Cooking Task at post-intervention than ELL participants (p =.023, $\eta\rho^2$= .10). EBL participants also demonstrated greater self-awareness than ELL participants (p =.028, $\eta\rho^2$= .10). There were no significant differences on the Zoo Map Test or psychosocial outcomes (p>.05); however, anxiety levels were lower at post-intervention relative to baseline for ELL participants only.

Conclusions: EBL is more effective than ELL for enhancing skills generalisation on tasks related to training and improving self-awareness. However, EBL appears to have no advantage over ELL for facilitating skills generalisation on tasks unrelated to training or improving broader psychosocial outcomes. The longer-term effects of each intervention will be examined at 6-month follow-up.

Correspondence: Tamara Ownsworth; t.ownsworth@griffith.edu.au

Effectiveness of Phonological Cueing Therapy for Naming Deficits in a Mandarin-speaking Patient

Tan Ching Teng, Carline[1]; Binte Jalil, Sajlia[1,2] and Rickard Liow, Susan J.[1,3]
[1]Division of Graduate Medical Studies (Speech and Language Pathology), National University of Singapore, Singapore
[2]Changi General Hospital, Singapore
[3]Department of Otolaryngology, Yong Loo Lin School of Medicine, National University of Singapore, Singapore

Background: The efficacy of phonological therapy for naming deficits in people with aphasia has been widely reported but there is no published account of interventions with Mandarin-speaking patients. The aim of this study was to develop and test phonological cueing therapy (PCT) in Mandarin for post-stroke naming problems using language-specific components (i.e., onset, rime, tone, syllable), and to thereby determine the most salient phonological cue for successful word retrieval.
Method: LLK, a Mandarin-speaking 65-year-old man with moderate-severe aphasia was recruited and assessed at three baselines and post-therapy. PCT was implemented over 10 weekly 1.5-hour therapy sessions and targeted 21 common nouns and 21 verbs. The order of presentation of different types of phonological cue was counter-balanced, and an additional tonal syllabic cue (initial syllable of target word, same tone) was provided for disyllabic target words. Phonological cues that resulted in successful target retrieval were noted to determine the most salient phonological component.
Results: LLK showed significantly improved naming of treated items following therapy, and follow-up testing indicated maintenance of treatment gains over a subsequent five-week period. For monosyllabic words, the most effective cue was at the rime-onset level; for disyllabic words, the tonal syllabic level cue was most effective.
Conclusion: This novel case study provides evidence that PCT can be effective for naming problems in Mandarin-speaking clients provided the cues are language appropriate. The findings also lend support to proposal by O' Seaghdha et al. (2010) that atonal syllable phonology is the proximate unit in Mandarin word production.
Correspondence: Carline Tan; carlinetan@gmail.com

Session 3: Treatment studies– Datablitz

The effectiveness of errorless learning in a patient with significant orientation deficits

Martins, Elizabeth[1]; Rose, Anita[1]; Wilson, Barbara[1,2] and Florschutz, Gerhard[1]
[1]Raphael Medical Centre, Tonbridge, Kent, UK
[2]Oliver Zangwill Centre, Ely, UK

Background and Aims: Errorless learning (EL) is arguably one of the most successful memory rehabilitation interventions in patients with severe acquired brain injury (ABI). The majority of patients with ABI have memory difficulties and EL strategy is essential to prevent errors, when encouraging learning of new information. This study will aim to demonstrate the effectiveness of this strategy in orientating a brain injured patient.
Method: Patient CQ was 31-year-old gentleman who sustained a severe ABI eighteen months prior to the intervention. He presented with amnesia and significantly impaired learning capabilities. He was disorientated, confused and highly dependent on the people around him to consistently orientate him. He was also anosognosic. Using an ABA design a baseline was established of CQ's orientation to day, date, year, month and location. The errorless learning intervention was employed over 8 weeks and then a post-intervention baseline conducted.
Results:

A- Pre-intervention baseline results recorded 100% errors made.
B- During the intervention phase, there was clear evidence of learning and at the post-intervention CQ's results indicated he learnt and retained and was orientated, averaging scores of 92% correct information. In addition, qualitatively staff report he is less anxious and confused as he is now orientated.
A- With withdrawal of the errorless learning intervention CQ shows he is Orientated to day, date time place, month with no errors recorded.

Conclusions: This study supports the use of errorless learning as an effective rehabilitation intervention for improving orientation in severely memory impaired patients.
Correspondence: Anita Rose; neuropsychology@raphaelmedicalcentre.co.uk

The effectiveness of an individualised Cognitive Stimulation Therapy programme on cognition, communication, quality of life and behaviour for nursing home residents with mild-moderate dementia

Healy, Sarah[1]; Mulry, Mary Rose[1] and Shiel, Agnes[1]
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Background: Cognitive Stimulation Therapy (CST) has been shown to be effective when delivered as a group intervention. However, some people with dementia cannot participate in groups because of agitation, aggression or other behaviours. The aim of this study was to investigate if individual CST is effective in improving quality of life, communication, cognition and behaviour when delivered on an individual basis.
Method: A single case experimental design was used. The Addenbrooke's Cognitive Examination-Revised, the Quality of Life –AD Scale, the Dementia Communication Difficulties Scale, Goal Attainment Scaling and the Neuropsychiatric Inventory were used pre and post intervention. The Pool Activity Level (PAL) was used as a continuous variable in each session. CST was delivered twice weekly for 6 weeks.
Results: Participant 1 showed improvement in GAS scores self and carer rated quality of life, communication, cognition and behaviour. There was also increased engagement and participation as measured by PAL scores. Participant 2 demonstrated improvement on GAS scores but there was deterioration in behaviour. Participation and engagement levels fluctuated.
Conclusion: CST delivered on an individual basis can benefit some people who cannot engage in group interventions. Further work is need to determine the characteristics of those most likely to benefit.
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Can the effects of Goal Management Training be improved by the incorporation of additional therapeutical strategies? Evidence for Errorless Learning and Working Memory Updating strategies in patients with executive impairments

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Goal Management Training (GMT)is a well-established, evidence-based treatment designed to structure the disorganized behaviour of brain-injured patients with executive problems. Its algorithm consists of 5 stages aimed at systematically devising, learning, carrying out and controlling the multiple steps of complex real-life tasks.

Several studies have shown that GMT contributes to a significantly better performance on everyday tasks in brain-injured patients with executive impairments.

However, in addition to the regulation of behaviour, other cognitive processes might play a crucial role in the attainment of goals and subgoals in GMT. Two of these processes are the ability to monitor and correct errors in task execution and the updating of goals and subgoals in working memory. We designed 2 randomized controlled trials, in which we compared conventional GMT with 1) GMT combined with as errorless learning approach, and 2) GMT combined with an updating working memory strategy. Errorless learning implied the active guidance from a trainer to prevent the occurrence of errors or guessing. Working memory updating in GMT entailed the presentation and rote learning of the visual image of a ladder with 4 task steps (in key words) at a time, in order to improve the retaining of the steps.

The results of both experiments show that using an errorless approach and incorporating an updating working memory strategy in GMT significantly improve the handling and execution of multistep activities of daily living in patients with acquired brain damage.

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Training listeners to understand dysarthric speech

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Background and aims: Dysarthria is a common consequence of brain injury and affects all aspects of the person's life. Both in the context of neurodegenerative conditions in which the speaker may not be able to improve speech, and in a context, such as the South African one, of scarce resources, training listeners to understand unintelligible speech better is potentially very useful. The phenomenon of perceptual learning, in which listeners adapt to degraded speech signals, has been demonstrated under other conditions but preliminary research suggests that explicit training may be required for perceptual learning of dysarthric speech. This study aimed to evaluate whether a training programme could be effective in improving listeners' comprehension of dysarthric speech.

Method: 25 participants were randomised into control and experimental groups. Both groups underwent a pre-test comprising sentence intelligibility and narrative comprehension of a dysarthric speaker. The experimental group participated in a training programme, and the control group received no further intervention. Both groups subsequently underwent post-testing using the same tasks.

Results: On the sentence task the training group improved while the control group deteriorated slightly. The difference was more marked on the narrative task, in which the control group remained essentially unchanged while the training group improved.

Conclusions: This preliminary study suggests that a short training programme can improve the ability of listeners to decode and understand dysarthric speech. The results highlight listener training as a potentially valuable adjunct to the treatment of people with dysarthria.

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Adaptation and validation of Cognitive Stimulation Therapy for dementia in Brazil

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Background and aims: Cognitive Stimulation Therapy (CST) is a 14-session group intervention for people with dementia (PwD) developed in the UK. It aims to mentally stimulate people through complex psychological techniques (e.g. implicit leaning, multi-sensory stimulation) embedded in structured group activities (e.g. word association, current affairs). It has a robust evidence-base, improving significantly cognition and quality of life. We hypothesise that the benefits found in the UK could be met in a Brazilian population, hence the current presentation describes ongoing work to adapt and validate CST in Brazil.

Method: The study is following a five-phase model based on the formative method for adapting psychotherapy, which includes engagement with stakeholders, a forward and back translation method and pilot-testing. After the initial adaptation, a feasibility study with 50 PwD, divided into 2 groups (intervention vs. treatment as usual) will be conducted. Neuroimaging data collection is also planned.

Results: Results from focus groups with stakeholders will be presented, with a discussion on how the materials and procedures are being adapted for a developing country.

Conclusions: The main features of CST are applicable to a Brazilian sample, but special attention should be paid to adjusting the procedures to participants with heterogeneous educational level. Stakeholders’ input reinforces the case for an urgent clinical and economic need, given that PwD in Brazil are currently offered no psychosocial treatment upon diagnosis.

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Session 4: Patient and family experiences – Datablitz

People with impaired person recognition: Are they able to recognise personally known individuals better than celebrities? A Review

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Aims: There has been an increasing body of literature investigating person recognition in people with acquired or developmental prosopagnosia or people with progressive atrophy of the temporal lobes such as in Semantic Dementia. Many studies have used famous individuals in recognition tests, rather than people who are personally known (such as friends or family). This review aimed to investigate differences in performance on recognition tests involving personally known individuals compared to famous individuals in people with impaired person recognition.

Methods: A systematic search of PubMed, Embase and PsychINFO was conducted to identify studies including both personally known and famous individuals in person recognition tests for clinical populations with impaired person recognition.

Results: 14 studies were reviewed, six which included people with acquired or developmental prosopagnosia and 12 including people with progressive atrophy resulting in impaired recognition. The quality of these studies was moderate, with most consisting of single case reports. The majority of cases were better able to recognise personally known individuals compared to celebrities, although exceptions to this were also found.

Conclusion: Current evidence suggests that individuals with recognition problems perform better on tests involving personally known individuals. Explanations for this difference are discussed as well as potential implications for rehabilitation.

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The experiences of younger stroke survivors in New Zealand

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Background and aims: Stroke is predominantly experienced by those over 65 years and most research about post-stroke difficulties is focused on people of that age. Little is known about the problems experienced by young stroke survivors, which are likely to be unique. Therefore, the current study aimed to investigate the experiences of younger stroke survivors in New Zealand.

Method: The current study used an online survey to collect both quantitative and qualitative data regarding problems experienced by younger stroke survivors who were recruited through the New Zealand Stroke Foundation.

Results: Although 13 of the 16 problems that were enquired about were stated as being at least somewhat of a problem, problems associated with invisible disabilities was rated as a significant problem. Responses to the open-ended questions provided a deeper understanding of how these problems are experienced, and the variability across all stroke survivors, demonstrating that the post-stroke journey is unique to each individual.

Conclusions: Post-stroke services should endeavour to acknowledge and address these different difficulties, in order to enhance the rehabilitation process and quality of life of the younger stroke survivors.

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Experiencing the journey towards acceptance after acquired brain injury

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Background and aims: Acceptance is often viewed as an important contributor to effective rehabilitation after acquired brain injury. However, a clear conceptualization of this key construct in the context of recovery from a brain injury is lacking. It is also unclear how it is experienced and viewed by those who have a brain injury.

Method: Ten people with a brain injury were interviewed about their experience of acceptance during the course of their recovery. Interpretative phenomenological analysis was used to analyse the data.

Results: Participants described their understanding of the concept; their journey from awareness to understanding and then to acceptance and moving on; changing views of the self that accompanied this journey; things that facilitated or hindered them on the journey; and the emotional aspects of the journey. Some felt ambivalent about the value of acceptance, but others discussed its advantages in terms of helping them deal with the brain injury.

Conclusions: To support people in coming to terms with their brain injury, clinicians need to understand how the individual understands and experiences acceptance.

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Family interventions after brain injury: A systematic review

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Background and aims: Lezak (1988) stated brain injury (BI) as a “family affair”. Family members are affected along with the BI patient, causing significant change in family relationships, thus negatively impacting patient well-being. Engaging family in intervention will therefore help both patient and their family, maximise recovery of the patient (Klonoff et al. 2001), and help maintain family well-being.

The purpose of the study was summarizing types of family interventions that helps maintain individual and family well-being after BI, and their clinical effectiveness.

Method: Using 6 databases, articles in English between 1984-2017 were searched. Inclusion criteria was: a) interventions for individual members and/or for family functioning after BI, and its effectiveness b) conducted in home or community settings c) age group 18 & above. 45 studies were selected and analysed using quality framework.

Results: The study assembled articles on interventions focused on improving family functioning (FF) after BI. Findings reveal, some studies included all family members in interventions, while others included primary care givers only. Types of interventions varied. Some used qualitative while some quantitative approach in data analysis. Few studies reported interventions having positive effect on both individuals and family dynamics.

Conclusions: Many studies administered interventions involving family members, but their focus being on the injured person, family needs were not targeted. Though some targeted FF, they were based on general theories of FF and didn't consider specific effects of BI on family. Every family being different, personalised approach is required, with documentation of interventions and their effectiveness measured.

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Session 5: Child neuropsychology

The father's experience: A South African perspective on caring for a child with autism spectrum disorder

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Background and aims: Autism spectrum disorder (ASD) is a developmental disorder that currently affects millions of individuals and their families across the globe. This study aimed to explore the experiences of fathers of children with ASD within the South African demographic, with a focus on the challenges experienced by these fathers in their caregiving role as well as the resources they employ to cope with these challenges.

Method: The study was exploratory and qualitative in nature. Semi- structured interviews were conducted with 15 fathers of children with ASD and the responses were thematically analysed.

Results: The challenges experienced by the participants included lack of respite, symptomatic challenges, health related issues in the child, the diagnosis, family dynamics, uninformed general public, financial challenges and services. On the other hand, giving it a name, respite, support, finances, characteristics of the child, beliefs, services and adjustment over time were all resources that the fathers employed.

Conclusions: This study suggests that even though fathers experience a multitude of challenges that impact their lives significantly, they also make use of various resources to assist them in their caregiving task. The major strength these fathers seem to have is an ability to employ problem-focused coping mechanisms to cope regardless of the particular challenge that they face. This study provides a point of departure for future studies to continue studying the well-being of fathers caring for children with ASD.

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Prospective memory performance following severe childhood traumatic brain injury: results of a prospective longitudinal study: the seven-year follow-up of the TGE cohort

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Background and aims: To assess long term prospective memory (PM) performance, seven years after childhood severe traumatic brain injury (TBI).

Method: Children (0–15 years; n=65) consecutively admitted in a single trauma center for severe non-inflicted TBI were included in a prospective longitudinal study. At 7-8 years they were compared with a matched (on age, gender and parental education level) control group (n=37) regarding PM, using three short novel tasks, varying in the delay, motivation and context: "Letter task": participants are asked to send a letter to the examiner the next time it rains; "Amusement park prize-draw competition": participants are told they can enter a prize-draw competition at the end of the testing session, to win entries for an amusement park; "Post-it/faces task": participants are asked to remove coloured post-its from the pages during a facial emotion recognition test.

Results: After a mean delay of 7.7 years, 39 patients participated in the study (66% boys; mean coma duration: 6.6 days; SD=4.83; mean age at injury: 7.6 years, SD=4.72; mean age at assessment: 15.3 years, SD=4.46, 7.2-22.2).

Patients showed significantly poorer PM than controls in the two low-motivation PM tasks: the "letter task" (p=0.047, odds ratio=2.6) and the "post-it/faces task" (p=0.004, r=0.34). Differences on the high motivation task were not significant.

Conclusions: Severe childhood TBI leads to PM impairments, evident several years post-injury, which represent frequent complaints in daily life. Specific assessments should be performed more routinely, in order to develop and implement adequate interventions using high motivation tasks/incentives.

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CBT for Anxious Children with Comorbid ADHD: Outcomes from a Large, Combined Sample

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Background and aims: Attention-deficit hyperactivity disorder (ADHD) and anxiety are the most common psychiatric disorders of childhood and are highly comorbid. While cognitive behavioural therapy (CBT) has demonstrated general efficacy in treating paediatric anxiety, it is not clear whether ADHD comorbidity impacts treatment response. While some previous studies have found a negative impact of comorbidity, others have found no difference, and the role of ADHD subtype has never been assessed.

Method: We examined ADHD diagnosis as a predictor of treatment response and remission in a study of 842 children and adolescents aged 6 to 18 years undergoing group-based CBT for primary anxiety. A subsample of 94 children met criteria for comorbid, mild-to-moderate ADHD, mostly comprising Predominantly Inattentive (*n* = 61) and Combined (*n* = 27) subtypes.

Results: Neither ADHD diagnosis nor subtype predicted response or remission rates for children's primary anxiety disorders. Children with ADHD also showed modest yet significant improvements in ADHD symptoms after CBT treatment for anxiety.

Conclusions: Our findings strongly support the suitability of manualised group-based CBT for anxiety treatment in children with non-primary ADHD. Further research should examine whether the positive outcomes reported can be extended to children with primary or severe ADHD. Implications for treatment of anxiety in paediatric ABI are also discussed.

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An update on establishing a South African pediatric neuropsychology research and rehabilitation program: What we've done, what we've learned and where we're going

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Background and aims: Despite the disproportionate impact of acquired brain injuries (ABIs) on low- and middle-income countries like South Africa, as compared to high-income countries, cognitive rehabilitation following ABIs in developing country settings is lacking. This paper provides an update on cognitive rehabilitation studies conducted within our laboratory to date, what we have learned about implementing cognitive rehabilitation interventions in our local context, and our future plans.

Method: The designs for the 6 studies reviewed include a single case design, case studies, and case-controlled studies, with sample sizes ranging from *n*=1 to *n*=15. Most of the children who participated in these studies were from socio-economically disadvantaged backgrounds. Interventions reviewed were aimed at attention remediation (using Pay Attention! and the Amsterdam Memory and Attention Training for Children interventions) and the rehabilitation of some executive functions (using an adapted pediatric Goal Management Training intervention).

Results: Results of the studies show some positive yet limited gains in terms of favourable outcomes post-intervention. Regarding feasibility, results show that contextual factors unduly affect the ability to conduct, and consequently the efficacy of, such studies.

Discussion: Results provide information on both efficacy and feasibility in terms of implementing cognitive rehabilitation interventions in LAMIC contexts like South Africa where cognitive rehabilitation is much needed but still relatively absent at present.

Conclusion: Ongoing research of this nature is needed for us to understand unique needs and contextual constraints around conducting cognitive rehabilitation locally, so as to inform future efforts of this nature for children with ABIs.

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Parents' and PE teachers' knowledge of sports related concussion within a paediatric population in Ireland

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Background and Aims: There are no epidemiological data for concussion rates in Ireland but there was a 41% increase in the number of 14-18 year olds reporting to hospital with head injury between the 2012/12 and 2013/14 sporting seasons. This study investigated parents' and PE teachers' knowledge of sports related concussion.

Method: A cross sectional survey design using the Rosenbaum Concussion Knowledge and Attitude Survey (Rosenbaum & Arnett, 2010) was used assess knowledge and attitudes to concussion from parents and PE teachers. The RoCKAS generates a Concussion Knowledge Index (CKI) and Concussion Attitude Index (CAI).

Results: There were 262 valid responses from parents and 159 from teachers. Shapiro-Wilks tests indicated that data were not normally distributed so descriptive and non-parametric analysis was used. Results indicate that while parents and PE teachers have a basic understanding of concussion there are significant gaps in knowledge. 49.2% of parents and 50.6% of P.E. teachers did not recognise that people who have had one concussion are more likely to have another and 23.6% and 19% respectively thought that concussion can only occur if there is a direct blow to the head. 76.3% of P.E. teachers reported that after a concussion, people can forget who they are and not recognise others. Both groups demonstrated safe attitudes towards concussion.

Conclusion: This study identified specific gaps in knowledge, particularly in relation to signs and symptoms, mechanism of injury and risk factors for concussion. Educational intervention may be used to improve knowledge in relation to concussion to facilitate safe and effective concussion management practices.

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Session 6: Assessment

My Brain Made Me Do It: Using An Ecologically-Valid Assessment Of Executive Functions To Investigate The Potential Involvement Of Head Injuries In Subsequent Criminal Behaviour

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Background and Aims: Research has suggested that many prison inmates have sustained a head injury during childhood/adolescence and often, this was prior to committing their first offence (Wald & Helgeson, 2014). Many head injuries damage frontal cortices which are still developing through adolescence. We investigated executive functions (EFs) in ex-offenders with the Jansari assessment of Executive Functions (JEF©), an ecologically-valid task. JEF© has been demonstrated to be sensitive for assessing adults with acquired brain injury (Jansari et al, 2014). Performance is evaluated on eight EF constructs: Planning, Prioritisation, Selective-Thinking, Creative-Thinking, Adaptive-Thinking,

Action-Based Prospective Memory (PM), Event-Based PM and Time-Based PM.
Methods: Sixteen ex-offenders were compared to 30 age and IQ-matched non-offenders on JEF©. Level of head injury during childhood was evaluated using a Traumatic Brian Injury (TBI) questionnaire.
Results: A one-way MANOVA on JEF© performance revealed a main effect of group F(9,36)=21.16, p=.009, Wilks λ= 0.159, ή2 of 0.841 with the power to detect the effect high (1.0); the ex-offenders were significantly impaired on all 8 individual constructs. Further, 87% of the ex-offenders had sustained a TBI preceding the age of their first offence and severity of head injury was positively related to difficulty on JEF©.
Conclusions: Our results demonstrate significantly impaired EFs in ex-offenders and a relationship between these and childhood head injuries. We suggest that a substantial proportion of ex-offenders should be viewed as adults with undiagnosed TBI; rehabilitation techniques should be used with this population to help reduce the high reoffending rates currently found in many countries.
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The European Brain Injury Questionnaire (EBIQ) and Outcomes Following Encephalitis

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Background: Encephalitis is inflammation of the brain, a neurological condition devastating lives across the world. There is a growing evidence base that outcomes and quality of life for people post-encephalitis may be greater than for some other brain injury populations.
Aims: To explore, using the European Brain Injury Questionnaire (EBIQ), outcomes following encephalitis in a large cohort of survivors and relatives.
Method: The EBIQ was used to explore self-reported outcomes among 246 people directly affected by encephalitis and as perceived by 89 relatives. Data was used to compare outcome against other brain injury populations (for example Stroke and Traumatic Brain Injury).
Results: In nearly every one of the nine EBIQ domains survivor mean scores were worse than the other brain injury populations.

In addition, relatives generally reported a greater depth of problems experienced by their brain-injured relatives when compared to the self-reports of those directly affected by encephalitis, suggesting that either the burden of caring results in a more grave perception of their relative's outcomes following encephalitis, or that people directly affected may be under-reporting as a result of a lack of awareness or a desire to distance themselves from their dis/abilities.

Further analyses showed a significant association among male relatives reporting more outcomes/problems for their post-encephalitic relative, perhaps suggesting that male relatives find the consequences of encephalitis more noticeable or onerous than their female relative counterparts.
Conclusions: The findings suggest, that although more in-depth investigations are needed, the level of outcomes or depth of problems for a post-encephalitic population may in many ways be greater than for some other types of brain injury.
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Feasibility and sensitivity of a modified version of Goal Attainment Scaling (GAS) across different neuropsychological intervention contexts

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Background and aims: Goal Attainment Scaling (GAS) has been used extensively in multidisciplinary rehabilitation but its widespread use among neuropsychologists has been hampered by its ipsative and non-standardized nature and the length of time required to set and scale goals (Grant & Ponsford, 2014). GAS has also been criticized as being unsuitable for use as a primary outcome measure in group studies such as randomized controlled trials. A modified version of GAS (GAS 2.0) was developed to address these and other barriers to uptake among neuropsychologists.
Method: GAS 2.0 was trialed in three separate contexts: a) a single case study of neuropsychological intervention for a community dwelling individual with acquired brain injury, b) a non-randomised controlled trial (NRCT) of cognitive remediation involving n=33 residents of an alcohol and other drug (AOD) residential rehabilitation setting, and c) a randomized controlled trial (RCT) of mental contrasting and implementation intentions to improve study habits in a sample of n=58 university students. Effect sizes were calculated for the group interventions.
Results: Clinicians and researchers involved in the GAS 2.0 trials reported high levels of satisfaction with the tool. Effect sizes were in the moderate to strong ranges for the group studies.
Conclusions: Preliminary use of GAS 2.0 for both single case and group studies was feasible and acceptable and sensitivity to real world changes across a range of populations, interventions and methodologies was high. GAS 2.0 has addressed some of the shortcomings of conventional GAS.
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Executive function predicts responsiveness to memory rehabilitation for individuals with multiple sclerosis

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Background and aims: The self-generation learning program (*self-GEN* trial) is a 6-session behavioral intervention, teaching self-generation techniques while using metacognitive strategies to improve learning and memory abilities in persons with MS. This study examines the influence of executive functioning on the ability to benefit from the *self-GEN* trial treatment in persons with Multiple Sclerosis (MS).
Methods: Participants consisted of 20 individuals with MS who participated in an RCT to improve memory functioning and were in the treatment group of the *self-GEN* trial. Participants were divided into 2 groups based on their executive functions scores (i.e. Low-EX and High-EX groups). Executive functions were assessed with the D-KEFS verbal fluency Test. Benefit from the *self-GEN* trial was assessed via a verbal memory test

(California Verbal and Learning Test-II) and a functional everyday test, the Actual reality test.

Results: Participants with MS with better executive functions showed greater benefit from the *Self-Gen* treatment on both the CVLT-II retention measure and the Actual Reality test compared with participants in the Low-EX group.

Conclusions: Executive functioning is critical for the ability of individuals with MS to benefit from memory treatment. Especially if the treatment is based on teaching a strategy use, such as the self-generation strategy.

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ABSTRACTS – TUESDAY 11th JULY

Session 7: Emotions and social cognition

Heart rate variability biofeedback: Can it be used to regulate emotion for individuals with traumatic brain injury?

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Background and aims: While difficulties regulating emotion are almost ubiquitous after traumatic brain injury (TBI), remediation techniques are limited. Heart-rate variability (HRV) is a physiological measure of an individual's response to environmental demands and can be modified using biofeedback training. It is not known, however, whether biofeedback can be used to regulation emotions or whether it is a feasible technique following TBI. In these studies, we investigated whether biofeedback can mediate response to anger-inducing stimuli in healthy controls and examined the feasibility of using HRV biofeedback for individuals with TBI.

Method: In experiment 1, fifty-eight participants received HRV biofeedback (n = 29) or an active control condition (n = 29) and measures of HRV were recorded during baseline, biofeedback training and anger induction. In experiment 2, HRV was recorded in 30 individuals with severe TBI and 30 controls at rest and during a single session of biofeedback.

Results: In experiment 1, the biofeedback group had higher HRV than active controls during both training and anger induction, with HRV associated with self-reported emotional response for participants receiving biofeedback but not for controls. In experiment 2, both TBI and controls showed increased HRV during biofeedback compared to baseline.

Conclusion: HRV can be used as an index of emotion regulation, specifically anger, and that a single session of HRV biofeedback can improve objective and subjective response to anger-inducing stimuli. Given individuals with TBI and controls respond similarly to biofeedback, this may represent a novel technique for mediating emotional difficulties following injury.

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A qualitative investigation of stroke survivors' experiences of participation in MELLO – a pilot randomised controlled trial of music listening and mindfulness interventions.

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Background and aims: Low mood and cognitive deficits are common consequences of stroke. Music listening is suggested to have beneficial effects on cognition, while mindfulness has been shown to benefit the treatment of mood disorders. The MELLO pilot randomised controlled trial (RCT) investigated the feasibility and acceptability of combining these approaches post-stroke. This nested study explored study participants' experiences of engaging in the interventions and themes emerging from their reflections.

Method: 56 stroke survivors, who had been randomised to receive an 8-week daily listening intervention of mindful music listening (n=15), music listening (n=21) or audiobook listening (n=20, control) using self-selected material during the first 3 months after stroke, participated in a post-intervention individual semi-structured interview with a researcher not involved in their intervention delivery. Interview questions focused on affective, cognitive and physical experiences. Data were coded and analysed using thematic analysis.

Results: A greater proportion of participants in the mindful music group than in the music or audiobook groups reported increased relaxation and improved mood/enjoyment. Improved attention/concentration was also mentioned by relatively more participants in the mindful music group, although to a lesser extent. A greater proportion of participants in the music group than in the other two groups reported increased physical activity and memory reminiscence. Participants also provided valuable feedback on the feasibility and acceptability of the interventions.

Conclusions: This study provides a broad and rich understanding of stroke survivors' experiences of listening-based interventions in an RCT context early post-stroke, and supports the feasibility of future full-scale efficacy research.

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Session 8: Health care - Datablitz

Training Support Workers to ensure continued rehabilitation success

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Aim: To illustrate how support worker training can be used to ensure a successful rehabilitation programme does not fail following discharge.

Background: A 68-year-old man became severely amnesic following limbic encephalitis. He was referred to a rehabilitation centre for help with the resulting cognitive and emotional consequences. Following a successful programme focussing on use of a compensatory system the time came for planning his discharge. The team realised he required further

help at home, yet no funds were available so another means of support was sought.
Method: Psychology students were seen as an ideal group to provide such support. Not only would they have the right skills to help, this work would provide them with an opportunity to learn about the brain, gain practical experience of working with people with neurological conditions, and enable access to supervision from health professionals. Three volunteer students were recruited with the man himself fully involved in the process. The students entered the programme with commitment and enthusiasm. After training at the rehabilitation centre, they had weekly supervision via Skype.
Results: The man now participates in a range of community activities. Questionnaire measures were used to evaluate the outcomes of rehabilitation. His wife reported a 25% improvement in his overall functioning, and a 43% reduction in the carer strain she experienced
Conclusion: Support Worker Training is a viable and cost effective way to ensure successful rehabilitation and the model has now been used with other patients.
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If brain injury is a family injury, how can we better frame research to improve the lives of whānau and impact policy? An Aotearoa New Zealand perspective

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Background and aims: We have described brain injury as a family injury for decades, and family-focused, holistic and relational treatments and supports are available and reasonably supported by research. Māori (indigenous) health models focus on the whānau (family). From these models, restoring health in an individual involves understanding the needs of whānau, yet rehabilitation funding, largely through the Accident Compensation Corporation (ACC), has remained focused on the individual, resulting in families struggling to get the supports they need.
My aim was to conduct research that could influence policy to close the gap between knowledge and funded practice. A philosophy was needed that bridged disability and human rights in order to assert the rights of the family.
Method: The philosophical framework of the Capablity Approach was used to explore the human rights that are relevant to families with ABI, including the ICF concept of third-party disability.
Results: Real world results of the research include a Māori co-researcher now serving on our local Brain Injury Association board and an ACC policy development group, as well as ACC attending, speaking and supporting the funding of a Māori-centred training initiative developed by our co-researchers.
Conclusion: The Capability Approach is a relevant framework for asserting the rights of people with disability, and their families, to rehabilitation services that will better meet their needs.
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A novel approach to interdisciplinary team assessment: Joining the dots

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Background and aims: Traditionally, rehabilitation assessments are completed by a member of each discipline to which the patient is referred. Each professional assesses according to discipline-specific guidelines. Goals and rehabilitation plans are developed separate from input from other disciplines. As a result, individual clinicians may duplicate information; may arrive at contradictory conclusions; and may set goals and develop plans that differ from each other, all of which may lead to reduced quality, confusion for the patient, and reduced team cohesiveness.
We present a model of interdisciplinary team assessment drawn from several models that guide us to view the individual as complex and multi-faceted, whose experience with brain injury affects physical, cognitive, and emotional spheres in an interactive manner. Therefore, assessments must reflect this complexity.
Method: Our two-day assessment consists of participation in community meetings; interviews focused on pre-injury identity and post-injury consequences; mood assessment; neuropsychological testing, family assessment; structured community observation; functional task (i.e., preparing food); and a feedback session to review the formulation and plan rehabilitation. Staff time includes two team meetings, nine clinical sessions, and report preparation.
Results: Qualitative analysis of feedback from clients following their assessment indicates that clients routinely experience a powerful sense of validation; they feel understood as well as hopeful and motivated for rehabilitation. One client even went on to publish a book inspired by his experience of assessment.
Conclusions: Clients view this assessment as therapeutic while staff create a fully informed formulation to kickstart rehabilitation. The process is both efficient and effective.
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A pilot study of the impact of cost-effective dementia friendly environments on participation and agitation of people with dementia in residential care

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Background: Approximately 14,000 people in Ireland have a diagnosis of dementia two thirds of whom live in residential care. There is a growing body of evidence for the efficacy of dementia friendly environments with research suggesting that the creation of such environments can result in improved behaviour, increased participation and reduced levels of agitation.
Method: A mixed methods approach was used. A low-cost dementia friendly environment was created. Measures of agitation and behaviour using the Neuropsychiatric Inventory (Nursing Home Version) and the Behavioural Pathology in Alzheimer's Disease Scale were taken pre and post change. Objective environmental observations were taken using the Therapeutic Environment Screening Survey for Nursing Homes. Interviews were conducted to gain insight into caregivers' perspectives of the effectiveness of the intervention.
Results: Four residents completed the study. All residents demonstrated a reduction in in neuropsychiatric symptoms, following intervention. All participants also demonstrated a decrease in behavioural and psychological symptoms with

extinction of both in two residents. There was a particular reduction in aggression with three residents showing no signs of aggression after intervention. All four residents demonstrated improvements in orientation. Qualitative analysis of interview data identified the benefits of the dementia friendly environment for residents but also identified challenges in maintaining this.

Conclusion: The implementation of a dementia friendly environment had positive effects on agitation, aggression and neuropsychiatric symptoms. The results of this pilot study confirm that further development and evaluation of this approach is warranted.

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Session 9: Participation

Participation trajectories in the first 2 years after stroke

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Objective: To describe the course of societal participation in the first 2 years' post-stroke.

Methods: The Restore4stroke study is a prospective longitudinal cohort study including 395 stroke patients who were followed for 2 years. Participation was measured directly after stroke to estimate the premorbid level of participation and at 2, 6, 12 and 24 months. Participation was assessed using the Utrecht Scale for Evaluation of Rehabilitation-Participation (USER-P) measuring frequency of, restrictions in, and satisfaction with participation related to stroke.

Results: Data of 217 participants were available for analyses. Frequency of participation decreased after stroke and was lowest at 2 months; a slight increase was observed over the 2 years but levels did not return to premorbid functioning. Restrictions in participation were worst at 2 months and reduced over 2 years with the largest reduction in the first 6 months. Satisfaction with participation slightly increased over 2 years. At 2 months' participation restrictions were most prevalent in work and education (79%), household activities (64.6%) and day trips (61.9%). Restrictions in these domains reduced but remained the most restricted at 2 years (46.7%, 45.0%, 44.0%). At 2 months, most dissatisfaction was seen in sports activities (59.0%), going out (56.5%) and day trips (55.8%). Satisfaction increased at 2 years but dissatisfaction in these domains remained the highest (43.7%, 44.1%, 44.2%). Correlations between dimensions of participation were high and became stronger over time.

Conclusions: Participation is decreased after stroke; with a high rate of restrictions and dissatisfaction evident in specific activity domains, even in the longer term.

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Staying connected after brain tumour: changes in social networks and relationship to wellbeing after brain tumour

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Background and aims: Social networks facilitate positive wellbeing in chronic illness; yet, for people with brain tumour, cognitive or physical impairments can occur and impair social integration. This mixed methods study aimed to: 1) examine associations between perceived functioning, social integration and psychological wellbeing in adults with primary brain tumour; and 2) explore changes in social networks and identify barriers/facilitators to social integration.

Method: Thirty-nine people with primary brain tumour (38% benign; 8% low grade; 54% high grade) aged 28-75 years were recruited from hospital and community services in Queensland, Australia. Participants completed a cognitive screener and self-report measures of cognitive and physical functioning (Functional Assessment of Cancer Therapy), social integration (structured interview & Exeter Identity Transition Scale), depression, anxiety and life satisfaction. A purposive sample (n = 10) completed in-depth semi-structured interviews focused on the social impact of brain tumour.

Results: Controlling for age, participants reporting greater cognitive and physical impairments had poorer maintenance of pre-existing social groups (r = -.42, p = .005). Participants with poorer maintenance of pre-existing social groups reported greater symptoms of depression (r = -.55) and anxiety (r = -.44) and lower life satisfaction (r = .33, p<.05) irrespective of their tumour type and global cognitive status. The qualitative analysis highlighted the diverse ways in which participants cope with social losses and strategies for maintaining and expanding social connections.

Conclusions: Disease-related barriers to social integration may need to be addressed to optimise wellbeing after brain tumour.

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Psychological factors after stroke: are they stable over time?

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Objective: Psychological factors influence stroke outcome in terms of participation and quality of life. Some factors such as proactive coping and self-efficacy seem to have a positive influence while others such as passive coping and pessimism have a negative influence. Not much is known about the stability of these factors over time. Such information may help to guide rehabilitation programs.

Methods: The Restore4stroke study is a prospective longitudinal cohort study including 395 stroke patients who were followed for a period of 2 years. The following psychological factors were measured at 2 months and 2 years' post stroke: Proactive coping, passive coping, self-efficacy, neuroticism, extraversion, optimism and pessimism. Change over time and associations between factors over time were considered.

Results: Data of 324 participants were available for analyses. Most psychological factors changed significantly over the 2-year period showing less pro-active coping, lower self-efficacy, less extraversion, less optimism, more neuroticism and more pessimism. The psychological factors correlated highly with each other and over time. Strongest correlations were found between self-efficacy and proactive coping both at 2 months and 2 years. The psychological factors clustered into 2 factors with positive aspects (proactive coping, self-efficacy, extraversion) and negative aspects (passive coping, neuroticism).

Discussion: Despite the fact that most factors we measured were expected to be stable over time (i.e. personality traits), changes into a less favourable outcome were found. Clinicians should be aware of these changes and if possible intervene to enhance the positive factors such as proactive coping, self-efficacy and extraversion.

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Session 10: MS, PD and HS – Datablitz

Psychosocial impact of Impulse Control Disorders in Parkinson's Disease

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Background and Aims: Up to 17% of patients prescribed dopamine agonists (DAs) to treat the symptoms of Parkinson's Disease (PD) may develop Impulse Control Disorders (ICDs). These involve the emergence of specific, often hedonistic, behaviours and include compulsive gambling, hypersexuality, punding, hobbyism and binge eating and/or drinking. Patterns of behaviour are reminiscent of those seen in substance-related disorders and have been conceptualised as behavioural addictions (Leeman and Potenza, 2011): continued engagement in behaviours despite negative psychosocial consequences, dose tolerance, repeated unsuccessful quit attempts and withdrawal effects upon disengaging. Overdose theory proposes that treatment with DAs may risk overdosing particular dopaminergic pathways within the striatum (Voon, et al., 2011), which results in heightened responsivity to reward. To date there has been no investigation of the psychosocial impact of ICD behaviours on the individual and their family.

Methods: Case series.

Results: We present a case series in which ICDs emerged after individuals with PD commenced treatment with DAs. These behaviours were not present prior and severely impacted upon psychosocial functioning and quality of life for both patients and their loved ones, including significant carer strain. ICD behaviours were eliminated upon the withdrawal of DAs.

Conclusions: The psychosocial impact of ICDs upon patients and their families cannot be understated. We recommend that health care professionals working with individuals taking dopamine agonists for PD are alert to the possible emergence of new-onset ICDs. Further, we propose that additional study in this area is warranted in exploring these behaviours and the impact on relationships.

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Thirty-two years in the perpetual present: a long-term follow up of profound amnesia following herpes simplex virus encephalitis

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Background and aims: CW is a 78-year old man who in 1985 became profoundly amnesic following herpes simplex virus encephalitis. His case has been widely documented and is considered one of the most severe on record. Here we present an update on his cognitive and behavioural functioning, including changes that have taken place and his current care needs.

Method: We summarise the results from neuropsychological assessments conducted over the 30-year period, including results from cognitive tests, behavioural observations, and interviews with his wife.

Results: CW's memory remains as impaired as ever; he retains information for no more than a few seconds without active rehearsal. He demonstrates implicit learning, though this is exceptionally impoverished. His performance on tests of reading and naming has declined in recent years. He engages in brief conversations on a small repertoire of topics, and spontaneous conversation is restricted to directly observable phenomena (e.g. one's appearance). Whereas CW previously exhibited behaviours that were challenging to manage, these have moderated over time and care staff are generally able to prevent and manage them. More broadly, his health and care needs are extensive and there is a continual need for his family to facilitate staff monitoring and understanding of his condition, and to advocate on his behalf.

Conclusion: Though CW has remained relatively stable, his care needs remain acute and in need of regular monitoring. Psychological consultation has been necessary to facilitate transitions between care homes and provide staff training, and to input into health funding decisions.

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Session 11: Assistive technology

Initiate Project; Developing Assistive Technologies to Increase Activity and Engagement in Meaningful Activities for People with Acquired Brain Injury

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Background and Aims: Cognitive and behavioural difficulties after acquired brain injury (ABI) may lead to reduced engagement in leisure and social activities. Increasing participation is a goal of neuropsychological rehabilitation and assistive and behaviour change technology can play an important role in this.

Method: We held focus groups with people with ABI (n = 6), caregivers (n = 3) and clinicians (n = 3) in order to understand the barriers to engaging in meaningful activities and what helps to overcome these barriers. Smartphone behaviour change applications were also discussed in a 'keep, lose, change' co-design session.

Results: A collaborative thematic analysis was performed by a multi-disciplinary research team using an approach based on Grounded Theory. Five central, interlinked, barriers were found; *Practical Issues, Physical Disabilities, Cognitive Difficulties, Anticipation* (of Physical or Cognitive Difficulties) and *Low Motivation.* To overcome these barriers participants mentioned *External Motivation* from both *Other People* and *Technology,* discussed *Technology as a Platform for Social Motivation* and mentioned different aspects of *Being Planful.* The co-design session indicated that goal-setting and 'Just-in-time' prompting applications are the most suitable currently available behaviour change software for this group.

Conclusions: This work ties together behaviour change, persuasive computing and neuropsychological rehabilitation literatures. The current literature and state-of-the-art technology will be discussed along with the feedback from stakeholders.

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The frontal paradox demonstrated in patients with focal neurosurgical prefrontal lesions using a virtual reality measurement of multi-tasking

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Background & Aims: The 'frontal paradox' is often observed in patients with prefrontal lesions, in which there is normal performance on tests of executive functioning but behavioural disorganisation in everyday life. Virtual reality (VR) has the potential to demonstrate this paradox using laboratory based procedures to mimic everyday activity. The Jansari assessment of Executive Functions, (JEF©, Jansari et al., 2014), a VR multi-tasking procedure which simulates clerical office work, was used to explore the multitasking performance of individuals with neurosurgical prefrontal lobe lesions, this was compared to performance on traditional 'paper and pencil' executive function tests.

Method: Nineteen individuals with neurosurgical prefrontal lobe lesions (PLL) were compared with 19 healthy matched controls on JEF© versus non-VR measures of neuropsychological functioning, including tests and questionnaires concerning executive functioning.

Results: There were differences between groups on only two of the eight non-Virtual Reality EF measures. There were significant differences between the groups on JEF© total score F(2, 37)=17.21, p<.001, η_p^2 =3.2 and on five of the eight individual measures relating to planning, adaptive-thinking, creative-thinking and both event and time based prospective memory (all ps<0.05). Within the PLL group, impairments were not related to lesion location and laterality.

Conclusions: The frontal paradox can be shown using virtual reality, irrespective over of prefrontal brain location, suggesting a 'mass action' effect regarding impairment. The findings support the use of laboratory based VR in detecting impairments in EF in individuals with prefrontal lobe lesions and also potentially for simulating everyday impairment when developing new rehabilitation approaches.

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Session 12: Assessment – Datablitz

Early recovery profiles of language and executive functions in blingual persons following brain injury

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Background: There is a burgeoning body of research on the impact of very early intervention in aphasia and related disorders. The process of recovery in the acute phase is important to understand as it will impact the choice, timing, and nature of therapy. This is particularly the case for bilingual persons.

Aims: To develop a simple, effective battery which in a multicultural and multilingual context, is able to distinguish normal from pathological profiles.

To explore possible relationships between linguistic and executive function (EF) factors in bilinguals with communication disorders.

Methods: A multivalent comparison study with a longitudinal component was conducted by assessing a sample of 29 bilingual, second language English speaking participants (who had sustained either a cerebral vascular accident or traumatic brain injury) at two time periods within the first 12 weeks' post injury. A control group was assessed employing the same battery.

Results: A between- group analysis identified statistically significant differences between etiologies for language assessment as well as the EF assessment, and differentiated normal from pathological individuals. A within- group analysis determined unique profiles of language and EF skills according to etiology.

Conclusion: These results confirm recovery processes in language but also highlight changes in executive functioning. Such evidence may support the decision-making process with regard to the nature and language of therapy. Appropriate

language assessment and treatment in the acute phase for bilingual persons needs to be framed by a detailed understanding of recovery patterns, and which cognitive deficits are contributing to the language behaviour.
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What is the relationship between the JFK Coma Recovery Scale -revised and the Wessex Head Injury Matrix?

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Background and aims: Two frequently used assessment measures administered to patients diagnosed with a Disorder of Consciousness are the JFK Coma Recovery Scale - Revised (JFKCRS-R) and the Wessex Head Injury Matrix (WHIM). This study investigated how these measures compared to one another. The aims were 1) to determine whether scores on the two tests correlate and 2) to see if the two tests predict whether patients had a traumatic brain injury (TBI) or non-traumatic brain injury (NTBI).
Method: All patients (N=20: 9 with a TBI) in a rehabilitation centre diagnosed with a DOC were assessed on the JFKCRS-R and the WHIM at least 10 times. Scores on each test were averaged and either correlated with a Pearson's r or analysed with chi-square.
Results: 1. Scores on the two measures correlated (r = 0.619; p>0.05). 2. The JFKCRS-R did not predict whether the patient had sustained a TBI whereas the WHIM did determine this.
Conclusions: Both tests are useful for assessing patients with a DOC and provide different information. The WHIM appeared to discriminate those patients with a TBI better than the JFK probably because there was a greater spread of scores.
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Session 13: Assessment

Cross-cultural and trans-diagnostic facilitators and barriers to remote assessment in healthcare for people with multiple sclerosis, epilepsy and depression: a qualitative analysis

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Background: Chronic health conditions require a healthcare approach that enables continuous self-management to prevent deterioration and maintain well-being. RADAR-CNS is an international research project aiming to improve healthcare provision by collecting information through smartphones and wearable devices ('remote assessment'), with a focus on multiple sclerosis, epilepsy and depression.
Aims: The aim of this initial study was to be guided on the potential facilitators and barriers to adoption of remote assessment by service users.
Method: Nine focus groups (three for each health condition) were performed in three countries: Italy, Spain and the UK. Participants were asked how they would feel about using remote assessment to predict changes in their condition. Discussions were audio recorded, transcribed and translated, where necessary, into English. Themes were systematically extracted by two researchers, independently.
Results: Facilitators and barriers were structured in four main categories: (1) service user-related factors including perceived rewards, costs, intrinsic value, acceptance and control; (2) systemic-related factors including perceived rewards, costs, intrinsic value and acceptance for carers and clinicians, availability of support and willingness to share data with others; (3) technology-related factors including convenience, accessibility, usability and intrusiveness; and (4) health-related factors including symptom intensity or severity, cognitive and physical abilities, awareness and emotional resources.
Conclusion: This study identifies cross-cultural and trans-diagnostic similarities and differences that may impact on adoption of remote assessment to inform the design of remote assessment in healthcare for people with neurological conditions and depression.
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How similarly do patients with Locked-In Syndrome (LIS) perform on neuropsychological tests? A comparison of two survivors of LIS

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Aims: To determine whether neuropsychological test scores differ between LIS patients of different ages and gender.
Background: Preserved cognitive functioning is a pre-requisite for the diagnosis of LIS. Although such patients do not have severe intellectual difficulties, some minor problems are common. The most detailed assessment of a patient with LIS is a young woman (Wilson and Okines 2014). She developed LIS after a fall in the gym at the age of 27 years. Since then a man who sustained a brain stem stroke at the age of 56 years, has been assessed with the same tests. The cognitive assessment addressed (1) Premorbid functioning (2) Language and Naming (3) Memory (4) Visuo-perceptual functioning and organisation (5) Visuo-spatial functioning (6) Executive functioning and (7) Non-verbal reasoning.
Results: In many ways, both people scored similarly: they were above average in premorbid functioning, language skills and tests of executive functioning. Neither had severe memory problems although they had some mild difficulties with recognition memory (the young woman with faces and the man on Doors from the Doors and People test). Their basic visual perceptual skills were adequate, although both struggled with some aspects, probably because of eyesight problems. One had diplopia and blurred vision and one poor acuity.
Conclusions: These assessments confirm earlier studies that people with LIS have no severe cognitive deficits although some minor problems may sometimes be seen. This may be due to sensory problems such as poor eyesight or hearing or to other brain lesions.
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Connections matter: Social cognition and white matter loss following Traumatic Brain Injury

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Background: Difficulty interpreting social cues, is common following severe traumatic brain injury (TBI) and often attributed to frontal and temporal pathology. However, social cues (e.g. words, faces, voices) require multi-modal and multi-sensory integration and thus, good connectivity between brain areas. Diffuse axonal injury and white matter loss is common following TBI. In this study, we examined what white matter tracts mediate poor social cognition in severe TBI, using track-based spatial statistics.

Method: 17 participants (14 male: mean age 46 yrs, SD: 13) with mod-severe TBI (PTA: 50 days, SD: 35) and 17 matched controls underwent MRI scans using a 3T Tx scanner. Functional anisotropy (indexing white matter integrity) was registered to a common skeleton. Voxel-wise statistics ($p<0.025$ corrected for multiple comparisons) were conducted, aligned across participants and covarying for cognitive function. Participants were assessed on The Awareness of Social Inference Test (TASIT): part 1 (emotion recognition) and part 2 (understanding social inference).

Results: The group with TBI was impaired on TASIT part 1 and 2. They also had extensive white matter pathology. Emotion recognition was correlated with loss of white matter integrity in bilateral thalami, the external capsule and planum temporale on the right and the corpus callosum and fornix. Understanding social inference additionally involved bilateral fronto-occipital tracts, intraparietal sulci, uncinate fasiculi, corticospinal tracts as well as the superior longitudinal tract, putamen and cingulum on the left.

Conclusions: This study highlights the potentially complex contribution played by white matter damage following TBI to everyday social judgements.

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Symptom Validity in Neuropsychological Rehabilitation

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Background: An individual neuropsychological rehabilitation program is mostly based on an extensive neuropsychological assessment including neuropsychological tests and questionnaires on personality characteristics and affective symptoms. It is assumed that patients respond honestly to all questions and put forward their full effort on the tests. For different reasons, patients fail to do so, also known as poor symptom validity (SV). Some patients may deliberately fake symptoms (malingering), but mostly patients are not aware of the fact that they are overreporting symptoms or underperforming on tests. In this case, poor SV may be seen as specific illness behavior. Poor SV might lead to misdiagnosis and unsuccessful or even harmful neuropsychological interventions. In this presentation, an overview is presented on the prevalence of poor SV in neuropsychological rehabilitation and the underlying causes. Guidelines are presented how to discuss poor SV with the patient and the team. Finally, suggestions are made how poor SV may be targeted in neuropsychological intervention.

Method: Literature review

Results: Although the interest in SV in neurorehabilitation is emerging, specific research in this area is still sparse. It is clear however that poor SV is a problem that is also present in neurorehabilitation and requires additional practical and ethical guidelines

Conclusions: Workers in the field of neurorehabilitation should be aware of the problem of poor SV. It requires the use of specific SV tests and questionnaires in neuropsychological assessment. Poor SV should be clearly communicated to the patient and team and preferably be a treatment goal in intervention.

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POSTER ABSTRACTS

Working 9 to 5: Vocational Rehabilitation in Post Concussion Syndrome

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Background and Aims: Traumatic brain injury remains one of the most complex conditions affecting adults who receive rehabilitation services. Indeed, the nature of the trauma causing TBI varies considerably, as does the characteristics of people who sustain TBI`s. Of course, these variations also bring increased heterogeneity in premorbid cognitive and psychological functioning, previous life experiences, socioeconomic status, drug and alcohol abuse history, social support systems and even genetic differences. It is suggested that, for many, TBI is not a once off event but the start of a lifelong recovery process.

Definitions of what constitutes mild traumatic brain injury differ, but a constellation of difficulties are commonly experienced. This includes physical difficulties (fatigue, dizziness, nausea, blurred vision etc.), alterations to cognition and mental health complaints such as anxiety, depression, irritability etc. For most, these symptoms resolve within three months of the injury event, but for some symptoms persist well beyond-in literature commonly referred to as Post-Concussion Syndrome (PCS).

Method: A biopsychosocial formulation of PCS is proposed, prioritising the interplay between physical, neurocognitive and emotional factors in PCS. Of these a specific focus of this presentation will be on pre-injury occupational factors influencing a successful return to work in PCS. Motivation, self-confidence, self-perception and performance capacity are all factors that will be explored via the use of a clinical case study.

Conclusions: Hence this paper will attempt to highlight the factors that present barriers and opportunities towards a return to work as well as proposing interventions to address these.

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One size does not fit all: stroke survivor views on a group self-management interventions

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Background: Stroke is the main cause of complex disability in the UK. Many stroke survivors feel abandoned when rehabilitation ends and more than half are left with long-term unmet needs. There is now emerging interest in whether group self-management programs (SMP) specifically for stroke survivors could help. However, more work is required to understand the acceptability of group SMPs to stroke survivors and the factors of concern that could impact efficacy.

Aims: To explore stroke survivor's views on (1) possible benefits of a group SMP, (2) possible challenges of a group SMP, and (3) when/where to implement a SMP in an individual's stroke journey.

Method: Fourteen stroke survivors took part in semi-structured interviews, which were analysed using an inductive thematic approach.

Results: Three main themes were identified in the data: (1) a space to share support, (2) it is not a one size fits all problem, and (3) how is it all going to happen?

Conclusions A varied group of stroke survivors can provide valuable insight and ideas about how group SMP's should be constructed. To the best of our knowledge, this is the first patient engagement study that explores group SMPs for stroke. In future work, researchers may find it helpful to consider the findings from this study to inform the design of group SMPs. This work informed the wider aim of my ongoing research: To assess whether or not it is feasible to implement a group SMP for stroke.

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Relationship continuity and the understanding and management of challenging behaviours in partners of people with acquired brain injury

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Background and aims: Partners of people with ABI differ in terms of whether they perceive the other person and their relationship to be essentially continuous with the pre-injury person and relationship, or as radically changed. This may have implications for how partners understand and manage challenging behaviours. Those who perceive continuity may draw upon their knowledge of the other person as an individual and of their relationship together, built up over their time together, in conjunction with knowledge they gain about the effects of brain injury, in trying to understand the behaviours. By contrast, those who perceive discontinuity may not draw on their prior knowledge of the individual and relationship because it is no longer perceived as relevant. Instead, they may rely primarily on knowledge acquired about the effects of brain injury. The richer understandings of those who perceive continuity may, in turn, enable them to generate more complex and proactive approaches to managing the behaviours; whereas those who perceive discontinuity may be more reactive and limited.

Method: These ideas were tested in a study involving 26 partners of people with ABI. Participants were interviewed about their understanding and management of challenging behaviours. These interviews were coded according to what categories of explanation were used, and whether management was proactive or reactive. Participants also completed the Birmingham Relationship Continuity Measure. It was hypothesized that those perceiving continuity would draw on a wider range of explanatory categories and be more proactive in management.

Results: Data are currently being analysed.

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Analysis of human dynamic behavior in space: assessment and evaluation of mobility-related functional impairments

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Background: The authors describe a biomechanics system consisting of a stack of superimposed kinematic hierarchical segments in which each lower segment tends to transfer its motion to the other superimposed segments. This segmental chain enables the derivation of both conscious perception and sensory control of action in space. The measurements of the complex motor behavior applied a wearable multisensory system to perform qualitative and quantitative measurements of the complex motor behavior.

Methods: The authors measured the complex human motor behavior using the fusion of multiple sensor data for the reliable and efficient acquisition of the kinetic, kinematics and electromyographic data of the human spatial behavior. To gain insight into the basis for this long-term dependence, the authors have applied the fusion of multiple sensor data to investigate the effects of Cerebral Palsy, Multiple Sclerosis and Diabetic Neuropathy conditions, on biomechanical/neurophysiological changes that may alter the ability of the human locomotor system to generate ambulation, balance and posture.

Results: The acquired kinematic and related kinetic signals represent attributive features of the internal reconstruction of the physical links between the superimposed body segments. Indeed, this reconstruction of the physical links was established as a result of the fusion of the multiple sensor data. These signals depict the global variables necessary for sensorimotor adaptation.

Conclusion: This study has demonstrated that the application of multiple sensor data fusion for the analysis of human dynamic behavior in space exhibits efficiency, validity, reliability, responsiveness and practicability in the assessment and evaluation of mobility-related functional impairments.

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