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MORE IN ONE PLACE: RETHINKING THE TYPICAL INTERDISCIPLINARY TEAM IN TRAUMATIC BRAIN INJURY REHABILITATION. A CASE STUDY.

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Introduction

The benefits of intensive rehabilitation following severe, complex traumatic brain injury (TBI) are widely acknowledged, however there is limited evidence to suggest what this rehabilitation should include (NICE, 2022). At a residential neurological and complex injury rehabilitation centre, additional therapies have been integrated into the interdisciplinary team (IDT) to provide new treatment approaches to help meet the diverse needs of clients. This case study **aims** to demonstrate how having more therapy options, in one setting, provided new opportunities to address the unmet complex needs of an individual with a TBI enabling progress in areas which had shown limited improvement previously.

Client

- 35-year-old male
- 14 months post TBI
- Given the prognosis of "**no rehab potential**"
- Received eight months of intensive specialist residential rehabilitation

"lost my daughter"

"Empty"

"[I] don't feel human"

The Specialist IDT members provided the following:

ACUPUNCTURE	ART PSYCHOTHERAPY (AT)	CONSULTANT STROKE & NEUROREHABILITATION PHYSICIAN	
NEUROLOGIC MUSIC THERAPY (NMT)	COMPLEMENTARY THERAPY (CT)	OCCUPATIONAL THERAPY (OT)	PHYSIOTHERAPY (PT)
CLINICAL PSYCHOLOGY (CP)	SOLUTION FOCUSED HYPNOTHERAPY (SFH)	NURSING	SPEECH & LANGUAGE THERAPY (SLT)

Examples of Key IDT input:

Memory

- **AT**: Provided space to find and express sense of self and identity
- **GROUP ATTENDANCE**: Cognitive Music Group with **NMT** & **OT** to help with memory retrieval, emotional self-awareness and regulation
- **NMT**: Client chosen music helped to build a bank of memories through association
- **OT**: Memory and cognitive strategies, abstract thinking, visual diary app, self-awareness and insight
- **SFH**: Memories started returning during trance, created photographic timeline of daughter's life.
- **SLT**: Word recall practice and strategies

Mobility

- **ACUPUNCTURE, CT & SFH**: Pain management enabling reduction in pain medication
- **CONSULTANT**: Botulinum toxin right gastrocnemius (calf), medication review to reduce medication exacerbating asthma
- **CT**: 1:1 yoga improved spatial awareness, breathing, concentration, muscle length and balance
- **GROUP ATTENDANCE**: Balance Group with Patterned Sensory Enhancement run by **NMT** & **PT**
- **NMT**: Adaptive gait training using Rhythmic Auditory Stimulation jointly with **PT**
- **NURSING**: 24hour consistent approach to mobility
- **PT**: "Standard" input, hydrotherapy & rehabilitation technology
- **SLT**: Breathing exercises to help improve physical fitness

Social Participation

- **AT**: Created a series of drawings he then exhibited on World Art Day
- **CLINICAL PSYCHOLOGY**: behavioural plan to help with de-escalating situations, trigger recognition and self-reflection
- **GROUP ATTENDANCE**: Peer support group with **AT**
- **SFH**: Helped client to identify that social participation was an important part of who he was pre-injury
- **NMT**: emotional regulation through sharing of mood-inducing music choices
- **OT**: Orientation, insight, higher level functional tasks e.g. planning outings.
- **SLT**: Social conversation, expressive aphasia, functional memory tasks
- **WHOLE IDT**: Social integration into the community via activities enjoyed by client pre-injury, fatigue management approaches to reduce frustration and overwhelm

Independence

- **ACUPUNCTURE, CT & SFH**: Pain management to increase confidence in pain free movement during Activities of Daily Living (ADLs).
- **AT**: Improvements in upper limb (UL) enabled client to enjoy art independently in his room
- **EYE TEST**: New glasses reduced headaches and improved independence
- **GROUP ATTENDANCE**: UL group run by **NMT**, **OT** and **PT**
- **NMT**: Fine motor control of fingers using piano with repetition of sequenced movements
- **NURSING**: Improved continence, 24hour consistent approach to ADLs
- **OT**: Cognitive strategies around planning, cooking, and other ADLs
- **PT** & **OT**: UL rehabilitation
- **SLT**: writing/typing to manage own life admin tasks

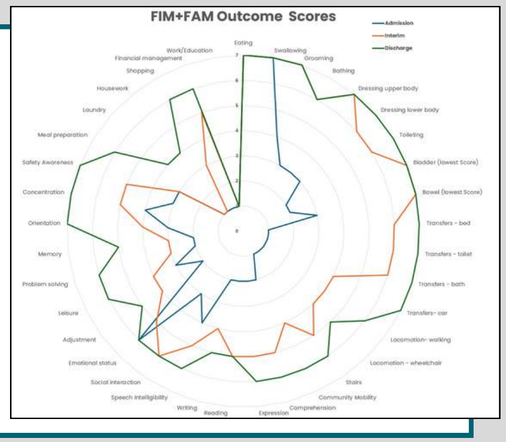
Results

There were improvements across formal outcome measures (see table and FIM+FAM chart). Additionally, for the client the regaining of **memories** provided **"a window into [his] old life"**. This in turn helped him to rediscover his **identity** and enabled more **connection** with friends and family, crucially with his daughter.

Rediscovering his identity **reduced social isolation** as he became **more self-confident** in social situations. Alongside substantial progress made with mobility and ADLs, this ultimately lead to him socialising with peers outside of formal rehabilitation sessions and accessing meaningful community settings with support.

On discharge he was now **positive about his future** at home.

Outcome Measure	Admission	Interim	Discharge
6-minute walk test	0	88m	210m
Timed Up and Go Test	0	51.07s	15.45s
10m Walk Test	0	25.34s	7.68s
Berg Balance Score	0/56	45/56	55/56
Waterlow (pressure ulcer risk) Score	14/25	14/25	7/25



Conclusion

The integration of additional therapies as part of the IDT in TBI rehabilitation is not known to be widely used, and in this case was key in providing rehabilitation that could help him achieve his goals. Although limited in its generalisation as a single case study, this case provides an interesting example of the improvements an individual with complex needs post TBI achieved with input from an IDT with additional therapies all in one rehabilitation setting.

Take Home Message:

A fully integrated IDT with different therapies and expertise provided new approaches and exciting opportunities for an individual's recovery post-TBI.

References:
NICE (2022). Rehabilitation after traumatic injury. Available at: https://www.nice.org.uk/guidance/ng211 [Accessed 28.04.25]

DESIGN: Dale Hornsby, STEPS Rehabilitation, UK