The Children's Trust
For children with brain injury

Speech and language therapy needs of children and young people with severe acquired brain injury on admission and discharge to a neuro-rehabilitation unit

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Background

- Approximately 350 children per year have a new severe acquired brain injury (ABI) in the UK (Hayes, 2017).
- Children and young people (CYP) present with a range of difficulties following ABI that require speech and language therapy (SLT) input.
- Few studies have investigated the prevalence of these difficulties and how they change during neuro-rehabilitation.

Objective

To investigate the SLT profile of CYP in a residential neuro-rehabilitation service, to evaluate their change over rehabilitation and discuss their ongoing needs.

Methodology

- All CYP with high rehabilitation needs following ABI, admitted to one residential rehabilitation unit between April 2014 and August 2018, were included.
- Therapy Outcome Measures (TOMs) (Enderby, 2015), were collected by SLT team on admission and discharge.
- TOMs scales address four dimensions in line with the ICF framework (WHO, 2013). Scales range from 0-5 (0 = worst case scenario; 5 = best possible presentation).
- Data was reviewed retrospectively.

Demographics

- n=165,age range 1-17 years, 91 male, 74 female.
- 36 % had traumatic brain injuries, 21 % had stroke, 14 % had inflammatory illnesses, 10 % had hypoxic injuries, 10 % had seizure related injuries, 8 % had tumours and 1 % other.
- Average age at injury: 9.8 years (1-17.6 years).
- Average length of stay: 19.7 weeks (2-149 weeks).

Results

- The most prevalent SLT needs in this group are cognition and dysphagia.
- CYP made significant improvements in all TOMs scales during rehabilitation, including impairment, activity, participation and wellbeing scales (see figures 1, 2 & 3). However, mean discharge scores did not exceed 4 (from a maximum of 5) for any scale.

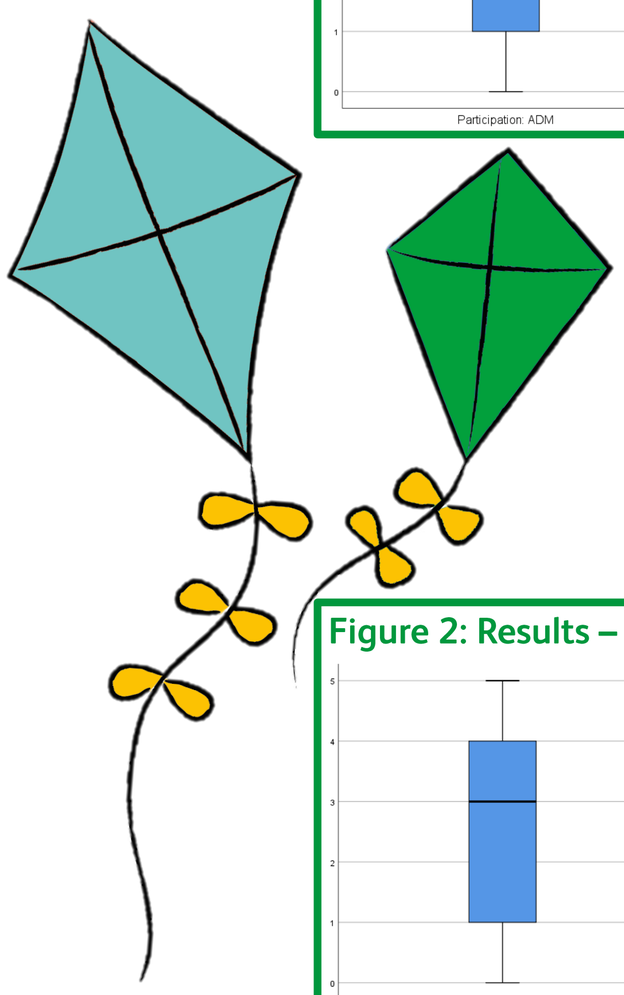


Figure 1: Results – Participation

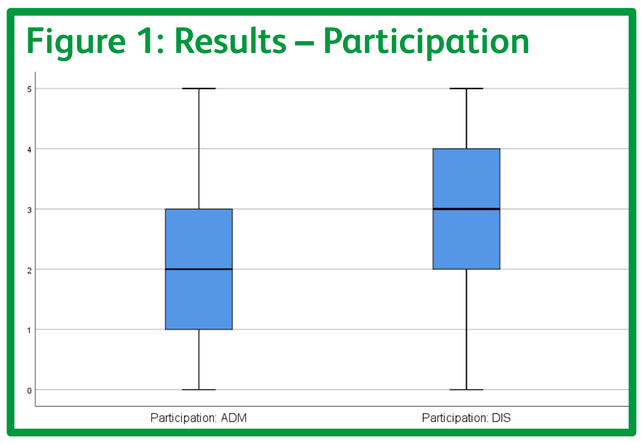
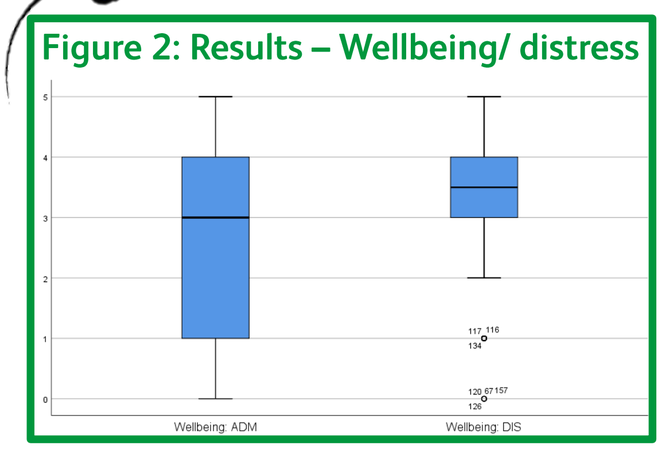


Figure 2: Results – Wellbeing/ distress



TOMs Scale		Mean (SD) Adm.	Mean (SD) Dis.	Wilcoxon z=	p=
Tracheostomy (n=15; 9%)	Impairment	1.40(0.83)	2.37(1.49)	-2.539	0.011
	Activity	1.00(0.85)	1.80(1.46)	-2.388	0.017
Child Speech/ Language Impairment (n=38; 23%)	Impairment	2.11(1.31)	2.70(1.39)	-4.119	<0.001
	Activity	1.81(1.13)	2.65(1.38)	-4.815	<0.001
Dysarthria (n=46; 28%)	Impairment	2(1.00)	3(1.00)	-5.816	<0.001
	Activity	2(1.00)	4(1.00)	-5.636	<0.001
Aphasia (n=30; 18%)	Impairment	2.00(1.00)	3.00(1.00)	-3.893	<0.001
	Activity	2.00 (1.00)	3.00(1.00)	-4.348	<0.001
Cognition (n=125; 76%)	Impairment	2.00(1.00)	3.000(1.00)	-8.876	<0.001
	Activity	1.00(1.00)	2.00(1.00)	-7.774	<0.001
ACC (n=51; 31%)	Impairment	0.00(1.00)	1.00(1.00)	-4.805	<0.001
	Activity	1.00(1.00)	3.00(1.00)	-5.500	<0.001
Dysphagia (n=86; 52%)	Impairment	1.56(1.18)	2.66(1.40)	-6.585	<0.001
	Activity	1.29(1.42)	2.50(1.63)	-6.625	<0.001

Figure 3: Table – TOMs Scale

Discussion/ Conclusions/ implications for practice

- CYP attending the neuro-rehabilitation setting presented with a range of SLT needs, demonstrating that treating SLTs need a wide range of skills covering these areas.
- While significant improvements are seen during rehabilitation, CYP leave with ongoing SLT needs, requiring input from community services to address this range of ongoing difficulties.

References

1. Enderby, P., John, A. (2015). *Therapy Outcome Measures for Rehabilitation Professionals Third Edition.* J&R Press Ltd.
2. Hayes et al. (2017). *archdischild*-2016-312166.
3. World Health Organisation (2013) International Classification of Functioning, Disability and Health Available from: http://www.who.int/classifications/icf/en/>

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