Evaluation of an outpatient multidisciplinary rehabilitative therapy programme for functional neurological disorder.

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Introduction

Functional Neurological Disorder (FND) is a complex condition characterised by the presence of genuinely experienced neurological symptoms in the absence of an organic neurological cause [1].

With a broad range of associated symptoms, individuals tend to experience a unique combination of symptoms which can vary in duration, frequency, and severity over time [2].

Despite differences in symptom presentation across the FND population, high levels of disability and distress tend to be reported as a result of the condition [3].

Treatment for FND tends to be offered either in the form of outpatient Cognitive Behavioural Therapy (CBT), or admission to a specialist inpatient unit.

The FiND programme was developed to provide an alternative to inpatient admission, whilst providing specialist multidisciplinary treatment in an outpatient setting.

Aim

The FiND programme is an eight-week course of rehabilitative therapy delivered in a neuropsychiatric outpatient setting, which aims to reduce symptom severity and improve functional mobility, in selected adults with a diagnosis of FND.

We assessed the effectiveness of the programme based on outcome data routinely collected throughout the programme, and at three-month follow-up.

Image 1: The Museum of the Mind, Bethlem Royal Hospital at the main entrance to the hospital grounds.

Method

Situated in Bethlem Royal Hospital, the programme comprised individual sessions of physiotherapy, CBT, and self-management, as well as group-based physiotherapy workshops and psycho-educational sessions.

Suitable individuals attended as day patients for two days per week over an eight week period, and a follow-up session provided at three months.

Outcome measures included the Beck Anxiety Inventory (BAI), Beck Depression Inventory (BDI-ii), Work and Social Adjustment Scale (WSAS), and mobility-aid requirement.

Mobility-aid requirement was categorised as follows: unaided, walking-aid, and wheelchair user.

Analyses included only data from individuals completing both treatment and follow-up (n = 31).

Friedman's ANOVA assessed overall change in outcome measure scores over time. Bonferroni corrected Wilcoxon signed-rank tests compared pairs of time-points (Weeks 1, 8, three-month follow-up).

Image 2: Physiotherapy gym located within the FiND programme, available to attendees during individual physiotherapy sessions.

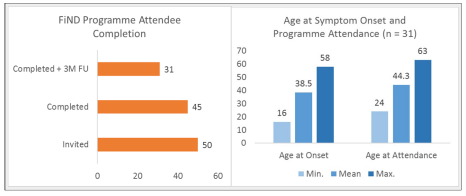

Figure 1: Attendee attrition throughout the programme, Figure 2: Demographic information regarding age at FND onset and age at programme attendance.

Results

There were statistically significant overall improvements on the BAI, $\chi^2(2) = 15.35$, $p < .001$, BDI-ii, $\chi^2(2) = 24.61$, $p < .001$, WSAS, $\chi^2(2) = 24.61$, $p = .001$, and in category of mobility-aid requirement, $\chi^2(2) = 19.50$, $p < .001$.

Descriptive statistics indicated that 45% of patients could mobilise unaided prior to programme attendance, with 84% able to mobilise unaided at follow-up.

Post-hoc Wilcoxon signed-rank tests indicated that reductions in scores were significant between Week 1 and Week 8 for the BAI, $Z = -3.54$, $p < .001$, $r = -.45$, BDI-ii, $Z = -3.94$, $p < .001$, $r = -.50$, and WSAS, $Z = -3.61$, $p < .001$, $r = -.46$.

Significant reductions in outcome measure scores were also present between Week 1 and three-month follow-up for the BAI, $Z = -3.17$, $p = .002$, $r = -.40$, BDI-ii, $Z = -3.57$, $p < .001$, $r = -.45$, and WSAS, $Z = -2.97$, $p = .003$, $r = -.38$.

Post-hoc Wilcoxon signed-rank tests comparing outcome measure scores at Week 8 and three-month follow-up did not demonstrate significant differences, which may indicate that improvements were maintained throughout the follow-up period.

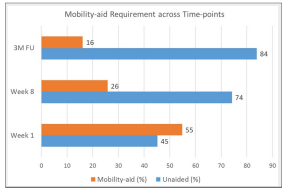

Figure 3: Number of attendee requiring a mobility-aid across programme start to end, and at three-month follow-up.

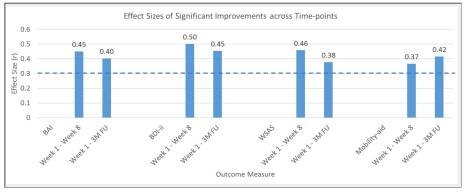

Figure 4: Effect sizes of significant post-hoc tests comparing outcome measures at different time-points. Dashed line indicates threshold for a "moderate" effect size.

Example Timetable

	Monday	Tuesday
0930 - 1030	Patient A: CBT Patient B: PT Patient C: SM	Patient A: CBT Patient B: PT Patient C: SM
1045 - 1145	Patient A: PT Patient B: SM Patient C: CBT	Patient A: PT Patient B: SM Patient C: CBT
1200 - 1300	Patient A: SM Patient B: CBT Patient C: PT	Patient A: SM Patient B: CBT Patient C: PT
1300 - 1345	Lunch	Lunch
1345 - 1445	Psycho-educational Presentation	Physiotherapy Workshop
1445 - 1545	Alumni Group	Psycho-educational Presentation
1545 - 1600	Relaxation Techniques	Community Meeting

Table 1: Example timetable for one week's attendance at the FiND programme.

Conclusion

These findings suggest that an outpatient rehabilitative therapy programme can be a beneficial treatment approach. Patients reported reduced symptom severity in terms of anxiety, depression, and functional impairment, as demonstrated by scores on the BAI, BDI-ii and WSAS, and displayed improvements in mobility, as determined by reduced mobility-aid requirement.

Although further evaluation would be encouraged to address limitations of these findings, they serve as a positive indication of an effective alternative to inpatient treatment.

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[1] Stone, J. (2009). Functional symptoms in neurology: The Bare Essentials. *Practical neurology*, *9*(3), 179-189.
[2] Nicholson, T. R., Carson, A., Edwards, M. J., Goldstein, L. H., Hallett, M., Mildon, B., ... & FND-COM Group. (2020). Outcome measures for functional neurological disorder: a review of the theoretical complexities. *The Journal of neuropsychiatry and clinical neurosciences*, *32*(1), 33-42.
[3] Carson, A., Stone, J., Hibberd, C., Murray, G., Duncan, R., Coleman, R., ... & Sharpe, M. (2011). Disability, distress and unemployment in neurology outpatients with symptoms 'unexplained by organic disease'. *Journal of Neurology, Neurosurgery & Psychiatry*, *82*(7), 810-813.