

# Improved functioning and mental health outcomes in patients with Functional Movement Disorders (FMD) receiving a physiotherapy delivered intervention as part of a multidisciplinary team approach

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## Background

- Functional Neurological Disorder (FND) is defined by the presence of neurological symptoms that are not explained by an identifiable neurological pathology.
- Functional movement disorders (FMD), a subset of FND, are abnormalities of movement e.g. limb weakness gait and abnormality that are incongruous with known neurologic disease but are genuine and cause distress and/or psychosocial impairment.
- High rates of co-morbid depression, anxiety and personality disorders are found in patients with FMD. Symptoms are best conceptualised using a bio-psycho-social approach.
- Patients with FMD account for 15% of new referrals at neurology clinics and often have lengthy inpatient stays, generating significant costs to the health service.
- Internationally, specialist rehabilitation services for FMD are led by psychiatry and neurology and incorporate a range of specialties including physiotherapy.
- There are limited services for the multi-disciplinary (MDT) outpatient treatment of patients with FND in Ireland.

## Aims

- Characterise the clinical features and outcomes of patients diagnosed with FMD receiving a physiotherapy delivered intervention as part of a cross specialty MDT approach to functional recovery.

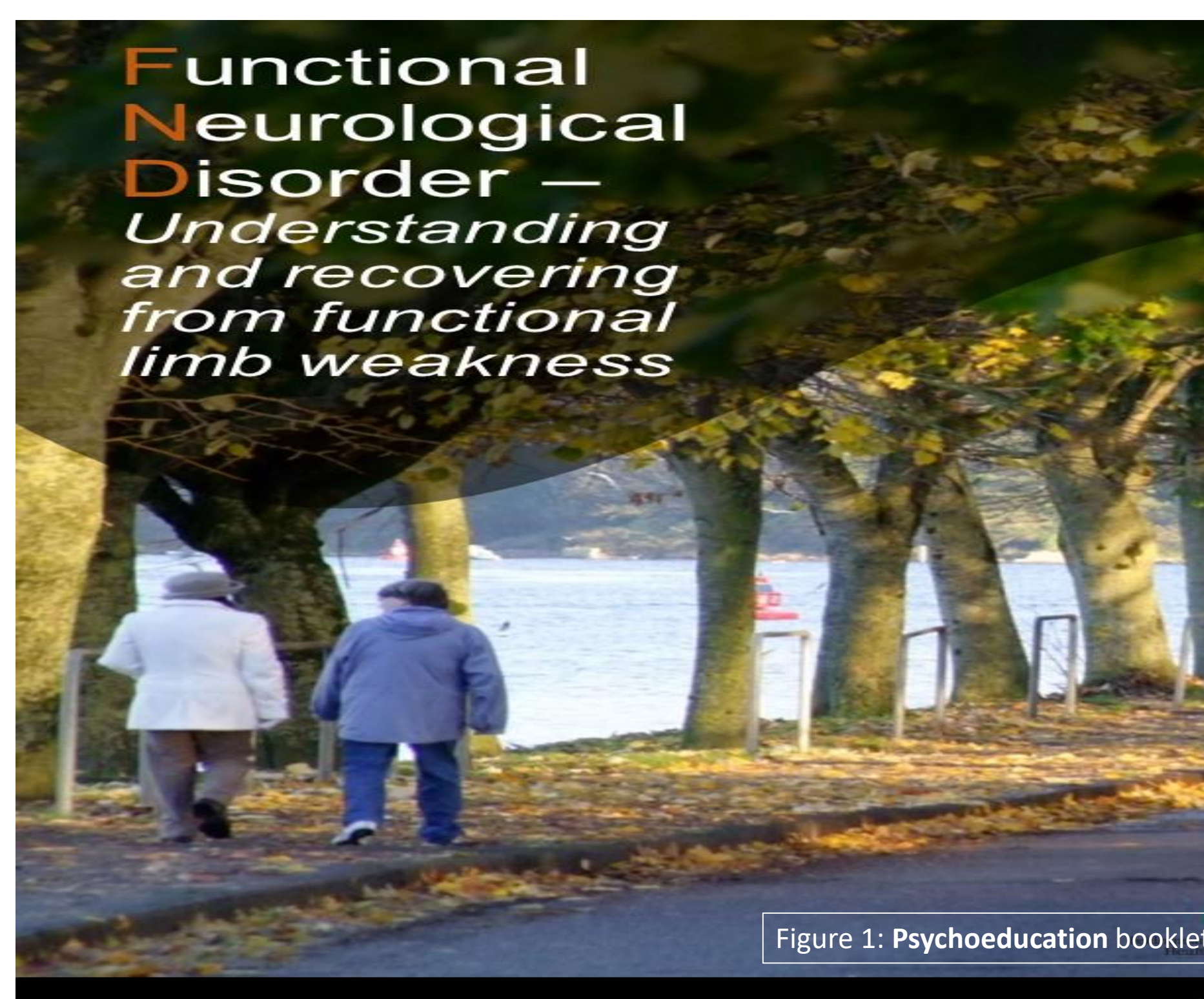
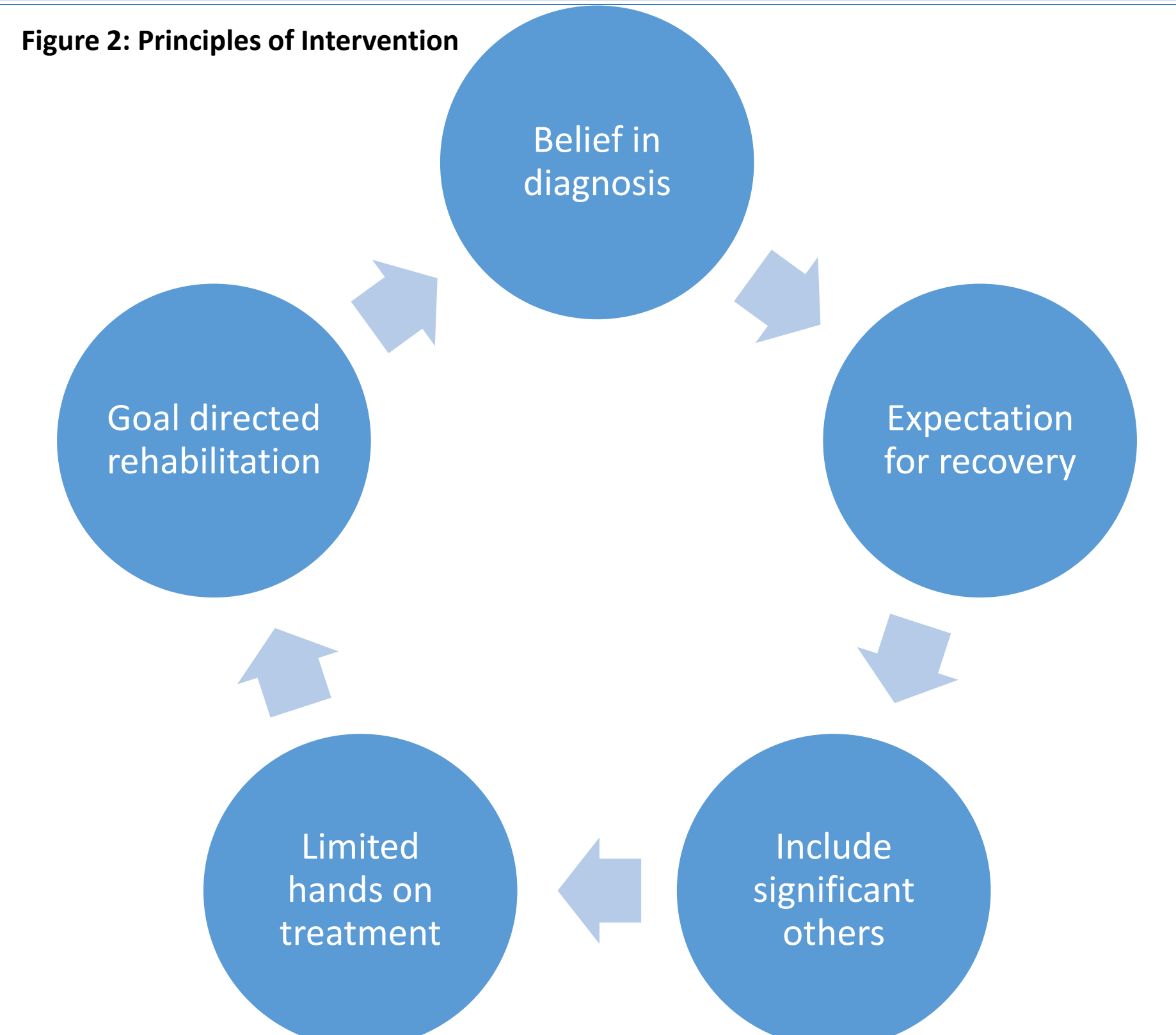
## Study Criteria

Inclusion	Exclusion
First presentations of FND to neurology	Organic diagnosis explains majority of symptoms
Diagnosed with FMD by neurology	Pain, fatigue, functional seizures are most disabling symptoms
Investigations completed	Patient can't understand English
Patient agreeable to engaging in research assessment	Learning Disability prevents them answering questions independently
Agreeable to working with physiotherapy as a model of care	Patients lack capacity to give informed consent
Aged over 18 years	Ongoing litigation

## Methods

- First presentations of FMD were diagnosed by consultants in neurology, liaison psychiatry services and senior clinical physiotherapists.
- Patients received psychoeducation from Consultants & Senior Registrar in Liaison Psychiatry. Educational leaflet created. (Fig. 1)
- Invited to participate in outpatient individualised physiotherapy programme delivered by neuro-physiotherapists. (Fig. 2)
- Participants were assessed **pre** and **post** physiotherapy intervention using:
  - EQ-5D-5L Health Questionnaire
  - Workplace and Impairment Questionnaire
  - Short Form -36 Health Questionnaire
  - Hospital Anxiety and Depression Scales (HADS)
- Patients continued to attend Liaison Psychiatry outpatients.
- Ethical Approval obtained.

## Principles of Intervention



## Results

- 11 participants: 5 males and 6 females, median age 46 years (range 22-57) completed the programme to date. 9/11 participants completed follow-up.
- All demonstrated significant improvements across all domains apart from HADS. (Table 1)
- No patients were readmitted as inpatients.

Table 1: Changes in assessment scores and gait speeds following physiotherapy intervention

Assessment Tool	Pre-mean score (n=9)	Post-mean score (n=9)	p-value
<b>EQ-5D-5L</b>			
Improved General Health	54	73	<0.05
<b>Short -Form 36</b>			
Physical Functioning	43	79	<0.05
Fatigue	26	55	<0.05
Emotional Wellbeing	48	68	<0.05
<b>Workplace &amp; Impairment</b>			
Reduction on the impact of clinical symptoms daily	5	3	<0.05
<b>HADS</b>	18	14	=0.07
<b>Gait Speed</b>			<b>p-value</b>
Distance walked in m/sec	0.32	1.1	<0.05

## Discussion

- Successful cross-specialty collaboration between neurology, liaison psychiatry and physiotherapy leading to development of integrated pathway for patients with FMD.
- Significant functional improvement among the participants and greater quality of life.
- Reduction in use of healthcare resources and cost-savings through early discharge and delivery of care in outpatient setting.
- During the pandemic, delivery of physiotherapy sessions via Telemedicine enabled ongoing treatment of people from large geographical area.
- Limitations: group size, selection bias.
- Results demonstrate the success & feasibility of this physiotherapy intervention in an Irish outpatient setting with support from Liaison Psychiatry. Future work should include expansion to patients with chronic symptoms.

## Acknowledgements

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