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VIEWPOINT

Physiotherapy for functional motor disorders: a consensus recommendation

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ABSTRACT

Background Patients with functional motor disorder (FMD) including weakness and paralysis are commonly referred to physiotherapists. There is growing evidence that physiotherapy is an effective treatment, but the existing literature has limited explanations of what physiotherapy should consist of and there are insufficient data to produce evidence-based guidelines. We aim to address this issue by presenting recommendations for physiotherapy treatment.

Methods A meeting was held between physiotherapists, neurologists and neuropsychiatrists, all with extensive experience in treating FMD. A set of consensus recommendations were produced based on existing evidence and experience.

Results We recommend that physiotherapy treatment is based on a biopsychosocial aetiological framework. Treatment should address illness beliefs, self-directed attention and abnormal habitual movement patterns through a process of education, movement retraining and self-management strategies within a positive and non-judgemental context. We provide specific examples of these strategies for different symptoms.

Conclusions Physiotherapy has a key role in the multidisciplinary management of patients with FMD. There appear to be specific physiotherapy techniques which are useful in FMD and which are amenable to and require prospective evaluation. The processes involved in referral, treatment and discharge from physiotherapy should be considered carefully as a part of a treatment package.

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INTRODUCTION

Many regard physiotherapy for functional motor disorders (FMD) as a useful part of treatment and there is increasing evidence for its use including a randomised controlled trial.[1–3] There is, however, very little description, even in these studies, of what physiotherapy should actually consist of. A common view of physiotherapy for FMD is that when it helps, it does so only by providing a 'face saving way-out' for patients (another way of saying that the precise elements of treatment are unimportant as recovery is entirely under the control of the patient). On the contrary, evidence is emerging that the composition of physiotherapy does matter and that targeted physiotherapy based on an underpinning scientific rationale and embedded in transparent communication can address mechanisms that produce and maintain FMD. We therefore met as a group of geographically diverse and multidisciplinary health professionals to create recommendations for the content of physiotherapy for FMD to act as a guide for others and to form the basis of further treatment studies.

We use the term FMD to denote symptoms such as weakness, paralysis, tremor and dystonia that are not caused by a standard neurological disease. FMDs are among the most common reasons for people to seek neurological advice.[4] They are associated with high levels of disability and distress, prognosis is considered poor and the financial burden is high.[5–7]

In a recent survey of UK neurophysiotherapists,[8] it was found that most (77%) saw patients with FMD and had good levels of interest in treating patients with FMD. A lack of support from non-physiotherapy colleagues and inadequate service structures were commonly identified barriers to treatment. In addition, they rated their knowledge as low compared to other commonly seen conditions. This is not surprising, given the lack of evidence and descriptions of treatment techniques. In a recent systematic review of physiotherapy for FMD,[3] only 29 studies were identified with a combined total of 373 patients (only seven studies had more than 10 participants). Despite their limitations, these studies show promising results for physiotherapy (and physical rehabilitation), with improvement in 60–70% of patients. In addition, a recently published randomised trial of 60 patients showed highly encouraging results from a 3-week inpatient physical rehabilitation intervention in patients with functional gait disorder (7 point improvement on a 15 point scale).[1] However, the literature contains little practical advice about how best to carry out physiotherapy in an individual with FMD. There are no existing published recommendations. We attempt to address this issue by providing recommendations for physiotherapy practice. We introduce a pathophysiological model for FMDs, on which we base our treatment strategies and provide practical suggestions for the patient journey from referral to treatment and discharge.

DEVELOPMENT OF RECOMMENDATIONS

In 2013, an occupational therapist, physiotherapists, neurologists and neuropsychiatrists, all with extensive experience in treating patients with FMD, met in Edinburgh, UK to produce a set of recommendations for physiotherapy treatment.

This is explicitly not a guideline because of the lack of evidence available. Instead, the recommendations seek to combine the existing evidence in the literature[1 3] with experience from health professionals into a document that can form the basis of further studies and can be developed further as new evidence emerges.

This published document is shortened from a longer version available as an online supplementary file, which contains more examples of ways to discuss certain scenarios and also case examples.

SYMPTOM MODEL AND RATIONALE FOR PHYSIOTHERAPY

Our *aetiological* framework is a biopsychosocial framework in which heterogeneous mixtures of predisposing, precipitating and perpetuating factors need to be considered and formulated with the acceptance that relevant factors differ between different patients (table 1).

More specifically, for FMD we base some of our recommendations on a model for the *mechanism* of symptoms which may be more homogeneous between patients. In this model, FMD is conceived as an involuntary but learnt habitual movement pattern driven by abnormal self-directed attention. We emphasise that this is commonly triggered by physical or psychophysiological events such as injury, illness, pain and dissociation with panic and is mediated by illness beliefs and expectation.[9–11] Life events, emotional disorder and personality traits are relevant in understanding and treating some patients with FMD, especially in cases where a clear link exists between mood/anxiety and symptom exacerbation. However, our recommendations, in keeping with revised criteria in the Diagnostic and Statistical Manual of Mental Disorders fifth edition (in DSM-5),[12] move away from an assumption that 'recent stress' and a purely psychological model are essential to understand and treat patients with FMD.

PHYSIOTHERAPY WITHIN A MULTIDISCIPLINARY APPROACH TO FMD

Physiotherapy is one of many interventions that may help FMD. Others may include simple education, psychological treatment, occupational therapy, speech and language therapy, hypnosis, medication and vocational rehabilitation. We recommend, however, for patients with physical disability that physiotherapy informed by awareness of the complexities of FMD should take a primary role in treatment in many patients. We also suggest that when psychological treatment is indicated, in some cases it may be more effectively delivered after or alongside successful physiotherapy:

We propose that physiotherapy has an important role in normalising illness beliefs, reducing abnormal self-directed attention and breaking down learnt patterns of abnormal movement through.

1. Education
2. Demonstration that normal movement can occur
3. Retraining movement with diverted attention
4. Changing maladaptive behaviours related to symptoms.

DIAGNOSIS, PHYSICIAN EXPLANATION AND REFERRAL TO PHYSIOTHERAPY

Recommendations for assessment and correct diagnosis of FMD are available elsewhere.[14 15] There is a consensus among health professionals regarding the importance of a clear physician explanation to the patient and their carers regarding the diagnosis[16 17] (detailed further below). The critical outcomes of the explanation which appear to facilitate physiotherapy are:

1. An understanding by the patient that their treating health professionals accept that they have a genuine problem (ie, not 'imagined' or 'made up');
2. An understanding by the patient that they have a problem which has the potential for reversibility (ie, a problem with function of the nervous system, not damage to the nervous system) and thus is amenable to physiotherapy.

A physician referral to physiotherapy for FMD should ideally contain a description of what the patient has been told and should be shared with the patient. Awareness of other relevant symptoms that may be present such as pain, fatigue, memory and concentration problems, anxiety and depression is important.

Not all patients with FMD are suitable for physiotherapy. We recommend that the following criteria should usually be met:

1. Patients should have received an unambiguous diagnosis of FMD by a physician, preferably using the recommendations above.
2. The patient should have some confidence in or openness to the diagnosis of FMD. Physiotherapy is unlikely to be helpful to someone who believes the diagnosis is wrong.

Table 1 A range of potential mechanisms and aetiological factors in patients with functional motor disorders

Factors	Biological	Psychological	Social
Factors acting at all stages	▶ 'Organic' disease ▶ History of previous functional symptoms	▶ Emotional disorder ▶ Personality disorder	▶ Socio-economic/deprivation ▶ Life events and difficulties
Predisposing vulnerabilities	▶ Genetic factors affecting personality ▶ Biological vulnerabilities in the nervous system	▶ Perception of childhood experience as adverse ▶ Personality traits ▶ Poor attachment/coping style	▶ Childhood neglect/abuse ▶ Poor family functioning ▶ Symptom modelling of others
Precipitating mechanisms	▶ Abnormal physiological event or state (eg, drug side effect hyperventilation, sleep deprivation, sleep paralysis) ▶ Physical injury/pain	▶ Perception of life event as negative, unexpected ▶ Acute dissociative episode/panic attack.	
Perpetuating factors	▶ Plasticity in CNS motor and sensory (including pain) pathways leading to habitual abnormal movement ▶ Deconditioning ▶ Neuroendocrine and immunological abnormalities similar to those seen in depression and anxiety	▶ Illness beliefs (patient and family) ▶ Perception of symptoms as being irreversible ▶ Not feeling believed ▶ Perception that movement causes damage ▶ Avoidance of symptom provocation ▶ Fear of falling	▶ Social benefits of being ill ▶ Availability of legal compensation ▶ Ongoing medical investigations and uncertainty ▶ Excessive reliance on sources of information or group affiliations which reinforce beliefs that symptoms are irreversible and purely physical in nature

Adapted from Stone and Carson.[13]
CNS, central nervous system.

3. The patient desires improvement and can identify treatment goals.

Patients who do not fulfil all of these criteria may still benefit from physiotherapy. For example, to help them understand the diagnosis or for disability management where rehabilitation has explicitly failed. Not all patients with an acute onset of FMD will require additional specific treatment. A proportion will experience spontaneous remission, but follow-up studies have shown that the majority of patients remain symptomatic in the long term.[6 18] Since chronicity of symptoms is associated with poor outcome, we would still recommend early referral of appropriate patients to physiotherapy. The question of how much spontaneous improvement might account for the benefit seen from physiotherapy (or indeed any other treatment) is one that needs to be answered via randomised clinical trials.

PHYSIOTHERAPY ASSESSMENT

This is discussed in detail in the online supplementary material. The key elements are: to gain a detailed understanding of the range of symptoms experienced; the effect on day-to-day function; the patient's understanding of and level of confidence in the diagnosis already given; setting goals for physiotherapy treatment and gaining rapport. If it is clear at this stage that the patient has very fixed views about an alternative diagnosis or has no wish to have physiotherapy, then it may not be appropriate to proceed. The use of a treatment contract, as in other disorders, may have benefits in providing impetus for change and assisting discharge of patients not benefiting from treatment.

COMPONENTS OF PHYSIOTHERAPY

Broad principles which apply to treatment of most patients with FMD are shown in box 1.

Education

The physiotherapist, like the physician, is in an excellent position to improve the patient's understanding of their disorder throughout treatment. The explanation given should build on a thorough explanation from the referring physician.[15] Useful ingredients include:

1. Use of the term *functional* movement disorder/limb weakness/paralysis/tremor/dystonia/myoclonus to describe the disorder. The rationale for this in preference to 'psychogenic' or conversion disorder or other terms is explained elsewhere.[19]
2. Acknowledgement that such symptoms are real, and are not imagined or 'put on' (ie, you believe them).
3. Acknowledgement that such symptoms are common and that they are commonly seen by the treating physiotherapist.
4. Explanation that symptoms can get better, that the problem is to do with nervous system functioning, not irreversible damage to the nervous system.
5. Explanation of how FMD is diagnosed using the demonstration of positive clinical signs which demonstrate normal movement (see below).
6. Explanation that a wide variety of factors may be involved in triggering symptoms, including physical illness and injury, and that psychological factors such as anxiety, depression or trauma may also be important.
7. Introducing the role of physiotherapy in 'retraining' the nervous system to help regain control over movement.
8. It may be important to discuss other terms used for FMD and the fact that many health professionals have ambivalent or negative attitudes to FMD.

This information should be backed up with written or online information (eg, http://www.neurosymptoms.org). In patients in whom doubts about the diagnosis remain, these often improve if therapy progresses successfully.

Box 1 General treatment principles for physiotherapy for functional motor disorder (FMD)

- Build trust before challenging/pushing the patient.
- Project confidence making it clear that the physiotherapist knows about FMD.
- Create an expectation of improvement.
- Open and consistent communication between the multidisciplinary team and patient.
- Involve family and carers in treatment.
- Limited 'hands-on' treatment. When handling the patient, facilitate rather than support.
- Encourage early weight bearing. 'On the bed strength' will not usually correlate with ability to stand in functional weakness.
- Foster independence and self-management.
- Goal directed rehabilitation focusing on function and automatic movement (eg, walking) rather than the impairment (eg, weakness) and controlled ('attention-full') movement (eg, strengthening exercises).
- Minimise reinforcement of maladaptive movement patterns and postures.
- Avoid use of adaptive equipment and mobility aids (though these are not always contra-indicated).
- Avoid use of splints and devices that immobilise joints.
- Recognise and challenge unhelpful thoughts and behaviours.
- Develop a self-management and relapse prevention plan.

Positive signs of FMD which demonstrate the potential for normal movement

Demonstration that normal movement can occur (or that abnormal movement can stop) alters expectations about movement abnormalities, and can be a powerful way of convincing a sceptical patient (and their family) that their diagnosis of FMD is correct and the problem is potentially reversible.[20] Several clinical signs to elicit normal movement and differentiate functional symptoms from neurological disease have been described. These are used as part of the diagnosis to positively identify FMDs, rather than it being just a diagnosis of exclusion. Some of these signs are listed in table 2.

Retraining movement with diverted attention

The challenge for the physiotherapist is to demonstrate normal movement in the context of meaningful activity such as walking. The key is to minimise self-focused attention by distracting or preventing the patient from cognitively controlling movement and to stimulate automatically generated movement. This can be achieved by altering the focus of motor attention, such as thinking about a different part of the movement or trying fast, rhythmical, unfamiliar or unpredictable movement.

Distraction can occur on a cognitive level, for example, engaging attention away from the affected limb(s) with conversation, music or mental tasks such as arithmetic. However, task-orientated exercises (table 3) are preferred as they are often more effective, translate directly into improved function and encourage implicit motor control. Meaningful automatic movement and muscle activity can be generated by weight bearing or

Table 2 Clinical signs which can be shown to a patient with functional motor disorder to demonstrate the diagnosis and potential for reversibility and examples of how to discuss it with patients

Hoover's sign Weakness of hip extension which returns to normal with contralateral hip flexion against resistance	"I can see that when you try to push that leg down on the floor its weak, In fact the harder you try the weaker it becomes. But when you are lifting up your other leg, can you feel that the movement in your bad leg comes back to normal? Your affected leg is working much better when you move your good leg. What this tells me is that your brain is having difficulty sending messages to the leg but that problem improves when you are distracted and trying to move your other leg. This also shows us that the weakness must be reversible/cannot be due to damage"
Hip abductor sign Weakness of hip abduction which returns to normal with contralateral hip abduction against resistance	Similar to Hoover's sign
Distraction or entrainment of a tremor Abolishing tremor by asking the patient to copy rhythmical movements or generate ballistic movements with the contralateral limb (ie, index to thumb tapping at different speeds)	"When you are trying to copy the movement in your good hand can you see that the tremor in your affected hand improves? That is typical of functional tremor"

automatic postural responses such as when sitting on an unstable surface (eg, a therapy ball). Table 3 includes further suggestions of how to demonstrate normal movement in different situations and other specific techniques for individual symptoms.

Other physiotherapy treatment strategies

Use of language

Using the right language may matter. Explanations that correctly remove blame, fault or implications of voluntariness are useful. For example: "your brain is attending to your body in an abnormal way", or "tests have shown that your muscles are capable of movement", as opposed to "…you can move your muscles."

The words used when asking the patient to move may also be important. Language may help trigger automatic movement, for example, "allow your leg to come forward" may produce movement in a better way than "step/move your leg forward." During physiotherapy sessions, you may pick up on cues or prompts that are more useful for individual patients.

Exercise—non-specific and graded

Non-specific graded exercise should be considered as part of all general rehabilitation programmes to address reduced exercise tolerance and symptoms of chronic pain and fatigue. There is some evidence for this in FMD.[21] Success here is dependent on getting the intensity right to prevent exacerbation of symptoms and promote adherence/compliance with the programme. Graded exercise has been shown in large randomised trials to moderately improve outcomes in patients with chronic fatigue syndrome[22]—a common accompaniment to FMD (see below)—and is likely to be beneficial to many patients.

Visualisation

Some patients may find visualisation techniques helpful during movement. This may work as a form of distraction whereby the patient imagines a more fluid motor task or pleasant scenario while being engaged in tasks. Visualisation may be unhelpful if it encourages self-focus during movement.

Mirrors and video

Mirrors and the use of video can be helpful in providing feedback to patients about their movements, posture or gait pattern which are often significantly different from how they imagine them to be.[23] Moving in front of a mirror may also help distract attention from monitoring body sensations.

Hypersensitivity/allodynia

Interventions aimed at desensitisation may be appropriate where hypersensitivity and allodynia are present. This can include graded sensory stimulation, graded movement/exercise and transcutaneous electrical nerve stimulation (TENS).

Rehabilitation diary or workbook

Completion of a rehabilitation diary or workbook with support from the physiotherapist may be a useful technique to help the patient reflect, remember and reinforce the information provided during physiotherapy. The patient can use the diary to keep track of goals, outcome measures and achievements, treatment strategies, activity plans, etc. A diary may help improve compliance with treatment, and encourage self-management.

Pain and fatigue management

Persistent or chronic pain and fatigue are common in patients with FMD and often have a role in precipitating and maintaining symptoms. Preferably, the patient should have an understanding that these symptoms are all linked together as one problem (with many symptoms) rather than multiple separate illnesses. The core of evidence based treatments for pain and fatigue involve, as suggested for FMD, (1) a change in illness beliefs from perceiving symptoms as due to damage as potentially reversible; (2) recognising that chronic pain is not correlated with harm and (3) changing maladaptive behaviours, such as breaking cycles of over-activity and under-activity with graded exercise. It may be helpful to reformulate pain as another example of the nervous system sending out incorrect signals which, like FMD, can be helped by 're-training' (ie, establishing more normal motor-sensory feedback). A number of good quality evidence based guides to pain management education and helpful patient resources exist.[24 25]

Provision of equipment, adaptive aids, splints and plaster casts

We recommend avoiding adaptive aids where possible, especially in acute presentations. Provision of equipment and adaptive aids can lead to adaptive ways of functioning and behaviours that prevent the return of normal movement and result in secondary changes such as weakness and pain.

In some cases, use of equipment may be necessary for pragmatic reasons (eg, to ensure safety after proven injuries), in which case it should be considered as temporary and provided with a plan to wean its use. We recommend ensuring that the patient understands the potential harmful effects of equipment and a plan should be in place to minimise this (eg, ensuring that the patient

Table 3 Examples of techniques for specific symptoms to normalise movement

Symptom	Movement Strategy
Leg weakness	Early weight bearing with progressively less upper limb support, eg, 'finger-tip' support, preventing the patient from taking weight through walking aids/supporting surfaces Standing in a safe environment with side to side weight shift Crawling in 4 point then 2 point kneeling Increase walking speed Treadmill walking (with or without a body weight support harness and feedback from a mirror)
Ankle weakness	Elicit ankle dorsiflexion activity by asking the patient to walk backwards, with anterior/posterior weight shift while standing or by asking the patient to walk by sliding their feet, keeping the plantar surface of each foot in contact with the floor Use of electrical muscle stimulation
Upper limb weakness	Elicit upper limb muscle activity by asking the patient to bear weight through their hands (eg, 4 point kneeling or standing with hands resting on a table) weight bearing with weight shift or crawling Minimise habitual non-use by using the weak upper limb functionally to stabilise objects during tasks, for example, stabilise paper when writing, a plate when eating Practise tasks that are very familiar or important to the individual, that may not be associated with symptoms eg, use of mobile phone, computer and tablet Stimulate automatic upper limb postural response by sitting on an unstable surface such as a therapy ball, resting upper limbs on a supporting surface
Gait disturbance	Speed up walking (in some cases, this may worsen the walking pattern) Slow down walking speed Walk by sliding feet forward, keeping plantar surface of foot in contact with the ground (ie, like wearing skis). Progress towards normal walking in graded steps Build up a normal gait pattern from simple achievable components that progressively approximate normal walking. For example—side to side weight shift, continue weight shift allowing feet to 'automatically' advance forward by small amounts; progressively increase this step length with the focus on maintaining rhythmical weight shift rather than the action of stepping Walk carrying small weights/dumbbells in each hand Walking backwards or sideways Walk to a set rhythm (eg, in time to music, counting: 1, 2, 1, 2…) Exaggerated movement (eg, walking with high steps) Walking up or down the stairs (this is often easier that walking on flat ground)
Upper limb tremor	Make the movement 'voluntary' by actively doing the tremor, change the movement to a larger amplitude and slower frequency, then slow the movement to stillness Teach the patient how to relax their muscles by actively contracting their muscles for a few seconds, then relaxing Changing habitual postures and movement relevant to symptom production Perform a competing movement, for example, clapping to a rhythm or a large flowing movement of the symptomatic arm as if conducting an orchestra Focus on another body part, for example, tapping the other hand or a foot Muscle relaxation exercises. For example, progressive muscle relaxation techniques, EMG biofeedback from upper trapezius muscle or using mirror feedback
Lower limb tremor	Side to side or anterior-posterior weight shift. When the tremor has reduced slow weight, shift to stillness Competing movements such as toe-tapping. Ensure even weight distribution when standing. This can be helped by using weighing scales and/or a mirror for feedback Changing habitual postures relevant to symptom production. For example, reduce forefoot weight bearing
Fixed dystonia	Change habitual sitting and standing postures to prevent prolonged periods in end of range joint positions and promote postures with good alignment Normalise movement patterns (eg, sit to stand, transfers, walking) with an external or altered focus of attention (ie, not the dystonic limb) Discourage unhelpful protective avoidance behaviours and encourage normal sensory experiences (eg, wearing shoes and socks, weight bearing as tolerated, not having the arm in a 'protected' posture Prevent or address hypersensitivity and hypervigilance Teach strategies to turn overactive muscles off in sitting and lying (eg, by allowing the supporting surface to take the weight of a limb. Cushions or folded towels may be needed to bring the supporting surface up to the limb where contractures are present) The patient may need to be taught to be aware of maladaptive postures and overactive muscles in order to use strategies Consider examination under sedation, especially if completely fixed or concerned about contractures Consider a trial of electrical muscle stimulation or functional electrical stimulation to normalise limb posture and movement
Functional Jerks/ Myoclonus	Movement retraining may be less useful for intermittent or sudden jerky movements. Instead, look for self-focused attention or premonitory symptoms prior to a jerk that can be addressed with distraction or redirected attention When present, address pain, muscle over-activity or altered patterns of movement that may precede a jerk

EMG, electromyography.

with a wheelchair has the opportunity to stand and mobilise as much as is safe and possible). For patients with FMD who have not responded to treatment, adaptive equipment may improve independence and quality of life and should be considered.

We strongly advise against immobilising a patient in splints, plaster casts or similar devices. In one study of fixed (functional) dystonia (n=103), 15% developed their problem or deteriorated markedly during or after immobilisation in a plaster cast. In no case did immobilisation in a plaster cast result in lasting improvement.[26]

Electrotherapies—functional electrical stimulation, electromyography feedback, transcranial magnetic stimulation and TENS

The use of electricity has a long history in the treatment of FMD and can be traced back to the 19th century.[27 28] We would not recommend any of these electrotherapies as isolated treatments. Functional electrical stimulation (FES) may be a useful adjunct to treatment, particularly in patients with a functional gait disturbance.[29] Ideally, FES should be used as a therapeutic modality and not as a permanent mobility aid. Electrical

muscle stimulation (not necessarily FES) can be used to demonstrate normal movement and help change illness beliefs. It may also work at the level of motor relearning.

Electromyography (EMG) biofeedback can be used to address illness beliefs and may be useful to retrain movement in functional weakness[30] or muscle relaxation for tremor and fixed postures.

Recent studies of transcranial magnetic stimulation (TMS) also offer some promise.[31] None of the published studies were controlled and none involved exposure to protocols of TMS that could be considered neuromodulatory. It is most likely that placebo and suggestion play a large role in patients where this is successful, although TMS may have a specific role, like hypnosis or therapeutic sedation,[32 33] in being able to demonstrate movement in limbs that cannot be seen to move any other way.[34] TMS, like FES, may therefore be a useful additional tool for some patients, and one that specialised physiotherapists could incorporate into their practice.

TENS, which produces a tingling sensation without pain or a muscle twitch, has been described as a treatment for patients with FMD.[35] For patients with functional anaesthesia or marked sensory loss, we have used a TENS machine with the stimulus setting increased to a high level to improve sensory awareness.

Falls and self-harming behaviour

Falls in patients with FMD are often considered to have a low risk of injury, in particular the common pattern of 'controlled descents'. Where this is the case, staff should be made aware of this possibility and it may be appropriate for the patient to take greater (apparent) risk. The situation is more complex where there is a history of self-harm which may sometimes manifest as a fall. The risk of injury during therapy sessions is likely to be higher. In this case, clinical decisions should be made with support from a multidisciplinary team (MDT). The physiotherapist can help manage this situation by being upfront about falls injury risk, document discussions and clinical decisions in the medical notes and encourage the patient to be involved in decision-making.

TECHNIQUES WE DO NOT RECOMMEND

There are a number of rehabilitation approaches described in the literature that we advise against using as first-line treatment. These are:

1. Deception of the patient through any form. For example, telling the patient that lack of recovery means the symptoms are all in the mind,[36] including the use of deceptive placebo treatments.
2. Confining the patient to a wheelchair outside of therapy sessions while their gait pattern remained affected by functional symptoms.[37]
3. Managing functional symptoms with surgery. Surgical procedures are a commonly reported precipitant of FMD.[10 26] Some patients with fixed functional dystonia seek amputations which usually result in a worsening of symptoms.[38] There may be a role for tendon lengthening surgeries in cases with fixed contractures confirmed by evaluation under anaesthesia; however, this comes with a risk of exacerbating functional symptoms and chronic pain.

TREATMENT PARAMETERS

The optimum treatment setting, duration and intensity are unknown and are likely to vary with symptom severity, chronicity and possibly presentation/phenotype. Inpatient settings allow for the reduction of social and environmental factors that may be working to trigger or maintain symptoms and for higher intensity of treatment. Domiciliary treatment can target real world problems that the patient will face on discharge, which may result in symptom relapse. Outpatient settings have the advantage of service provision over a longer period of time. A 'stepped care' approach to treatment is the ideal situation, where treatment complexity can be escalated according to patient need.[39]

OUTCOME MEASURES

This is an unresolved issue in studies of FMD. Changes in disability (eg, using the Functional Independence Measure),[40–43] quality of life (eg, the SF-36), clinical global impression (5 point scale)[2 44] and cost benefit have been used. Objective research measures for FMD, such as the Psychogenic Movement Disorders Rating Scale,[45] have questionable value in clinical practice and also for research because FMD symptoms are so variable.

DISCHARGE AND FOLLOW-UP/CONCLUDING TREATMENT

A set discharge process agreed at the start of treatment (Treatment Contract/Agreement) is beneficial as it helps both parties plan for the conclusion of treatment and limit potential associated problems. A self-management plan should be in place that may include strategies and exercises that have been helpful, future goals with realistic time frames and strategies to prevent a return to unhelpful behaviours (eg, pacing, graded activity and exercise plans to prevent boom-bust activity cycles). Setbacks and symptom relapses following treatment are common and it is important for the patient to be prepared to manage this. A follow-up appointment several months after discharge can be helpful to review and reset goals and to 'troubleshoot' issues that may have arisen.

A discharge summary letter to the patient, general practitioner and relevant clinicians can have therapeutic value if it is used as an opportunity to reinforce information given to the patient and to educate others about the diagnosis and treatment.

FMD AND PSYCHIATRIC COMORBIDITY

Patients with psychiatric comorbidity are generally more highly represented in a group of patients with FMD compared to the general population. For some patients, psychiatric comorbidity may be present, relevant to the onset of FMD and require specialist psychiatric treatment. This may need to be before (eg, where an individual is at risk of self-harm or reluctant to engage in physical rehabilitation), during or after physiotherapy. Our experience is that psychotherapy (in particular, treatment for anxiety and depression) is often more successful after some improvement has occurred during physiotherapy.

LIMITATIONS

This document aims to address the problem of a lack of information and evidence for physiotherapists treating patients with FMD. We recognise that there are a number of limitations to our recommendations. Most significant is that they are based on limited evidence. Our aim is only to provide advice for physiotherapists. We recognise that physiotherapy is only one part of the MDT, and other disciplines such as occupational therapy and psychological therapies may have an equal or greater role in particular patients. Patients with FMD are a heterogeneous group and each patient will have unique factors contributing to their symptoms.

CONCLUSIONS/SUMMARY

FMDs are complex and the aetiology is multifactorial. Patients with this diagnosis are therefore heterogeneous. Treatment needs to reflect this. Physiotherapy aimed at restoring movement and function has face validity, is becoming evidence based and is

acceptable to patients. Physiotherapy resources are currently employed for patients with FMD, but the supporting structures do not exist and there is a lack of information for physiotherapists to help plan their treatment. The biopsychosocial model and recommendations that we present are aimed at helping physiotherapists to plan individualised treatments that target the problems that contribute to a patient's symptoms. A stepped care approach is important to escalate treatment when necessary.

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