

INPATIENT THERAPEUTIC STRATEGIES FOR PATIENTS WITH FUNCTIONAL NEUROLOGIC DISORDERS

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Introduction

Treatment for functional neurologic disorders (FND) is challenging, largely due to the incomplete understanding of pathophysiology and maintaining factors of these conditions. Traditionally, the prognosis for patients suffering from FND has been thought to be poor, especially if symptoms have been present for over a year at treatment onset [1] [2]. A survey in 2009 led by Espay et al. [3] showed a broad range of variability in attitudes and treatment approaches among movement disorder specialists. Going back to Sigmund Freud's theories on conversion disorder, an unresolved psychological conflict has long been thought to present itself as a somatic symptom such as weakness or jerking of limbs. Despite the popularity of this theory, this concept has remained unproven and presence of a psychological trauma is no longer required for the diagnosis of a FND per DSM-V criteria [4]. Several studies comparing psychometric profiles between FND patients and control groups fail to demonstrate higher levels of psychiatric comorbidities in FND [5] [6].

The following considerations on treatment for FND will focus on the treatment of functional movement disorders (FMD). Patients suffering from paroxysmal disorders such as psychogenic non-epileptic seizures (PNES) are likely best served with a predominantly psychotherapeutic approach, specifically using cognitive behavioral therapy (CBT) [7].

Treatment Approaches for Functional Movement Disorders

Based on the assumed predominant psychological etiology of FMDs, neurologists often refer patients for psychiatric assessment and recommend psychotherapy with the goal of uncovering and resolving an underlying psychological conflict. It is assumed that improvement in neurological symptoms will follow as a consequence. Although there is a lack of treatment studies in this area, outcomes reported from psychotherapy or antidepressant therapy have overall been modest [8, 9] and treatment may be especially challenging if no underlying psychopathology is determined.

Over the past several years, there has been an increased interest in the role of physical therapy for rehabilitation of FMDs. Czarnecki et al. report on outcomes of a five-day treatment program at the Mayo Clinic, based on physical and occupational therapy [10]. Patients achieved significant improvement in motor symptoms in 73.5% rated by a movement specialist and treatment success was maintained in 60.4% of patients after a two-year follow-up. A similar five day treatment approach based on physiotherapy in a day hospital setting was recently replicated by Nielsen et al. in the UK [11]. At 6 month follow-up, 72% of the treatment group compared to 18% of the control group reported symptom improvement. Dallochio et al. observed improvement in FMD symptoms in 62% of patients participating in a small study involving a structured walking program [12]. Physiotherapists surveyed in the UK in a study by Edwards et al. professed interest in the treatment of FMD patients, but cited low knowledge about these conditions, poor support by referring neurologists and inadequate service structures as hurdles for optimal therapy [13]. A recent publication by the same group provided consensus recommendations for physiotherapy trying to address some of these obstacles [14].

Therapy in the outpatient setting can be difficult if patients have severe functional impairment, have no access to therapists experienced in treatment of FMDs locally or are in situations where treatment success is jeopardized by secondary enabling factors in their usual surroundings. Patients with severe limitations of neurological function may best be treated in an inpatient setting and often show dramatic improvement over a relative short period of 1-2 weeks. Several studies have reported benefit from a multidisciplinary inpatient treatment approach with integrated physical, occupational and psychological treatment. A retrospective study published by Saifee et al. in 2012 [15] reported 26 patients failing prior treatment interventions and admitted to an inpatient rehabilitation program consisting of physical and occupational therapy, cognitive behavioral therapy and neuropsychiatric assessment. After a mean hospital stay of 6 weeks, 58% of patients reported treatment benefit, which was maintained at a mean follow-up time of 7 years. A study by McCormack et al. [16] reported similar outcomes from a multidisciplinary inpatient program combining physical and occupational therapy, psychoeducation and cognitive

behavioral therapy in patients with severe, chronic FMDs. Patients at baseline had higher rates of childhood sexual abuse and mental illness compared to patient with chronic brain injuries treated on the same unit, but these were no predictors of a worse outcome. Treatment length in this study was not standardized and patients with presence of non-epileptic dissociative features required longer hospital stays. Another study from Norway [17] evaluated a three-week inpatient rehabilitation program for patients with functional gait disorders, integrating a physical therapy and a cognitive behavioral treatment approach. Sixty patients were randomly assigned to immediate treatment or delayed treatment after four weeks. Patients significantly improved their walking ability and quality of life measures compared to the control group and treatment success was maintained at a one-month and one-year follow up.

Example of a multidisciplinary inpatient, short-term rehabilitation program

At University of Louisville, patients with a FMD with sufficient severity to impact their ability to work or perform activities of daily living are offered admission to a rehabilitation hospital for a one-week inpatient motor retraining (“MoRe”) program. Prior to admission, patients undergo a detailed evaluation by a movement disorder specialist, physical therapist and psychologist to confirm their diagnosis, determine psychiatric comorbidities and prepare them for the treatment week. The program is aimed at improving patients’ motor symptoms, gaining insight into disease mechanisms, regaining control over abnormal movements and learning better coping strategies. Patients are scheduled for daily sessions with physical, occupational and speech therapy as well as a one-hour session with a psychologist. Psychologists work with a validated treatment manual for treatment of functional neurological symptoms [18] and also incorporate mental imagery training into the session [19], [20]. A supportive environment is provided by the psychiatrist overseeing the treatment week, therapists and nurses, with daily positive reinforcement of treatment success. Patients are videotaped on the first and last day of therapy to document treatment outcomes and self-rated symptom questionnaires are completed before and after the program as well as after a 6 month follow-up period. Patients are given exercises to perform at home to maintain treatment success and are referred for appropriate outpatient follow-up. A retrospective analysis of 32 patients completing the program showed an excellent outcome with minimal to no abnormal movement symptoms in 66.7%, a good outcome with significant reduction in abnormal movements in 20.0%, and treatment benefit was largely maintained at 6 month follow up (unpublished data). The program was well accepted and 96.6% of patients indicated they would elect to do the program again if given the opportunity.

Motor Retraining (MoRe) Principles

- I. The diagnosis of a functional movement disorder is communicated by the neurologist after completing an appropriate comprehensive workup, before the patient is referred to the treatment program.
- II. There is consistency among all members of the therapy team in communication and treatment goals.
- III. Motor dysfunction is described in functional rather than psychological terms, avoiding pejorative implications. It can be helpful to use analogies, e.g. having a computer “software” rather than “hardware” problem. The term “functional movement disorder” is preferred over “psychogenic” or “conversion disorder”, as these imply a purely psychological etiology of the movement disorder. Attributing symptoms to “stress” can be unhelpful as patient will often state they are no longer experiencing stress but symptoms persist.
- IV. The principle of “motor retraining” (MoRe) is relearning of normal movements analogous to treatment of other neurological conditions (e.g. hemiparesis, paraplegia or ataxia) with the stated goal of neurologic normality.
- V. Mental practice is used at the beginning of the first therapy session every day. Patients are guided to imagine their goal activity, e.g. walking down a corridor with a normal gait pattern or eating with a fork and knife without tremor. Patients are asked to recall their mental imagery during therapy sessions and given encouragement that they will be able to relearn normal movements. Patients are instructed to perform Mental Practice on their own every morning and every evening.
- VI. Treatment begins with establishing very elementary movements in the affected limb or body region, and building on those. As simple movements are satisfactorily performed, appropriate motor complexity is added. More complex movements are only introduced after simple movements are performed successfully.
- VII. Emphasis is placed on the quality of movement instead of the quantity of movement. The patient receives verbal cueing to regain control of his or her motor performance and focuses on the quality of the movement instead of the speed or distance.

- VIII. Ample opportunity for rest if provided. The patient is asked to focus on breathing or relaxing imagery when feeling overwhelmed. Pushing the patient too hard too soon can lead to regression of skills and worsening of symptoms.
- IX. Positive gains are verbally reinforced. Abnormal movements are ignored, although major and frequent adventitious intrusions may suggest the need to rest. Repetition is important to lock in the gains.
- X. Assistive devices are removed as soon as possible.

Summary

According to both self-report and physician rated measures, the majority of patients participating in our one-week, inpatient MoRe rehabilitation program improved at discharge and maintained improvement 6 months later. These results indicate that short-term inpatient rehabilitation is a promising approach in the treatment of FMD patients and may be more cost effective than longer programs.

Clearly, the management of FMD patients remains challenging and further research comparing the long-term outcomes of different treatment approaches is needed. A better understanding of risk factors, pathophysiology and maintaining factors for FMD is necessary to individualize best therapeutic strategies for each patient. However, with the reported positive outcomes from our and several other rehabilitation programs, there is certainly reason for optimism and patients should be encouraged to seek out providers with experience in FMD and actively engage in treatment efforts.

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