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Insights into Chronic Functional Movement Disorders: the Value of Qualitative Psychiatric Interviews

Steven A. Epstein, MD[1], **Carine W. Maurer, MD/PhD**[2], **Kathrin LaFaver, MD**[2,3], **Rezvan Ameli, PhD**[4], **Stephen Sinclair, PhD**[5], and **Mark Hallett, MD**[2]

Steven A. Epstein: epsteins@gunet.georgetown.edu; Carine W. Maurer: carine.maurer@nih.gov; Kathrin LaFaver: kathrin.lafaver@louisville.edu; Rezvan Ameli: amelir@mail.nih.gov; Stephen Sinclair: sinclairs2@mail.nih.gov; Mark Hallett: hallettm@ninds.nih.gov

[1]Georgetown University School of Medicine and MedStar Health, Department of Psychiatry, Washington, DC

[2]Human Motor Control Section, Medical Neurology Branch, National Institute of Neurological Disorders and Stroke, National Institutes of Health, Bethesda, MD

[3]University of Louisville, Department of Neurology, Louisville, KY

[4]Experimental Therapeutics and Pathophysiology Branch, National Institute of Mental Health, National Institutes of Health, Bethesda, MD

[5]Section on Affective Cognitive Neuroscience, National Institute of Mental Health, National Institutes of Health, Bethesda, MD

Abstract

Background—Patients with functional movement disorders (FMD) are commonly seen by neurologists and psychosomatic medicine psychiatrists. Research literature provides scant information about the subjective experiences of individuals with this unfortunate and often chronic problem.

Corresponding author: Steven A. Epstein, MD, Department of Psychiatry, Georgetown University School of Medicine, 2115 Wisconsin Ave NW, Washington, DC 20007.

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Drs. Ameli, Lafaver, Maurer and Sinclair do not have any disclosures.

Dr. Epstein is President of the Academy of Psychosomatic Medicine and is a member of the editorial board of Psychosomatics.

Dr. Hallett serves as Chair of the Medical Advisory Board for and may receive honoraria and funding for travel from the Neurotoxin Institute. He is involved in the development of Neuroglyphics for tremor assessment, and has a collaboration with Portland State University to develop sensors to measure tremor. He may accrue revenue on US Patent #6,780,413 B2 (Issued: August 24, 2004): Immunotoxin (MAB-Ricin) for the treatment of focal movement disorders, and US Patent #7,407,478 (Issued: August 5, 2008): Coil for Magnetic Stimulation and methods for using the same (H-coil); in relation to the latter, he has received license fee payments from the NIH (from Brainsway) for licensing of this patent. He is on the Editorial Board of 20 journals, and received royalties and/or honoraria from publishing from Cambridge University Press, Oxford University Press, John Wiley & Sons, Wolters Kluwer, Springer, and Elsevier. He has received honoraria for lecturing from Columbia University. Dr. Hallett's research at the NIH is largely supported by the NIH Intramural Program. Supplemental research funds have been granted by BCN Peptides, S.A. for treatment studies of blepharospasm, Medtronics, Inc., for studies of deep brain stimulation, Parkinson Alliance for studies of eye movements in Parkinson's disease, UniQure for a clinical trial of AAV2-GDNF for Parkinson Disease, Merz for treatment studies of focal hand dystonia, and Allergan for studies of methods to inject botulinum toxins.

Objective—To enhance our understanding of psychological aspects of FMD by conducting qualitative interviews of research subjects.

Methods—Thirty-six patients with FMD were recruited from the Human Motor Control clinic at the National Institutes of Health (NIH). Each subject participated in a qualitative psychiatric interview and a structured diagnostic psychiatric interview.

Results—Of our 36 subjects, 28 had current or lifetime psychiatric disorders in addition to conversion disorder and 22 had current disorders. Qualitative interviews provided rich information on patients' understanding of their illnesses and emotional processing dysfunction.

Conclusion—Our study supports the addition of open-ended qualitative interviews to delineate emotional dynamics and conceptual frameworks among such patients. Exploratory interviews generate enhanced understanding of such complex patients, above and beyond that gained by assessing DSM diagnostic comorbidities.

Keywords

functional movement disorder; psychogenic movement disorder; conversion disorder; qualitative; interview

Introduction

Functional movement disorders (FMD), previously termed psychogenic movement disorders, have been reported in 3–20% of movement disorder clinic patients.[1] General psychiatrists and psychosomatic medicine specialists are frequently asked to treat these individuals. Previous research has generally used structured psychiatric interviews and self-report scales to examine psychiatric comorbidities in these patients and in those with related disorders such as psychogenic non-epileptic seizures (PNES). These reports have highlighted the often substantial associations with comorbid psychiatric diagnoses such as depression and anxiety, trauma history, and alexithymia.[2,3,4] These comorbidities may help to explain the unfortunate fact that many patients with FMD have a chronic course.[5] To our knowledge, this is the first large case series study using qualitative interviews to attempt to enhance understanding of patients with a prolonged course of illness. In this report, we present summative information on 36 subjects as well as brief vignettes of eight of those subjects with the goal of enriching the clinician's appreciation of the value of patients' own language and conceptualizations in the understanding of this complex disorder.

Methods

Participants

Thirty-six patients with "clinically definite" FMD[6], as diagnosed by at least two movement disorders specialists (including M.H.), were recruited from the Human Motor Control clinic at the National Institutes of Health (NIH) between 2011 and 2016 to participate in a three day study examining the neurobiological underpinnings of FMD. Patients partially overlap with those reported in previous manuscripts.[7] Exclusion criteria included: a) comorbid neurological disease; b) psychotic disorder, bipolar disorder, current substance abuse; c) history of traumatic brain injury with loss of consciousness; d) active autoimmune disorder;

e) current suicidal ideation; f) disease severity requiring inpatient treatment; g) current use of tricyclic antidepressants or antiepileptic medication; and h) pregnancy. All participants provided written informed consent. The NIH Institutional Review Board approved the study.

Psychiatric Assessment

Each subject participated in a qualitative 30 to 60 minute psychiatric interview with an experienced psychosomatic medicine (PM) psychiatrist (S.E.). The goals of the interview were primarily to explore the patient's understanding of their illness and conceptualizations of their emotions in coping with stressors. Patients additionally met with an experienced clinical psychologist (R.A. or S.S.), who administered the Structured Clinical Interview for Diagnostic and Statistical Manual of Mental Disorders, Version IV-TR, Patient Edition (SCID-I/P).[8]

Results

36 patients with functional movement disorders were included in our analysis. Patients ranged in age from 24 to 70 years, with an average age of 46.7 +/− 12.5. 81% (29/36) of patients were female. Patients exhibited a variety of functional movements (Table 1). Average time since onset of functional neurological symptoms was 6.9 years, with a range from 4 months to 32 years. Table 1 includes demographic information, phenomenological characterization of the patients' abnormal movements, current and lifetime psychiatric disorders, insight assessment, and selected additional historical and interview information on all 36 patients. In order to capture in greater depth some of the richness of language and self-assessments, we have included patient quotes in the table as well as in the selected cases below.

Selected cases

Case 1—This 33 year old female with functional speech impairment reports feeling socially ostracized after moving to the United States at age 11. She states "because I had no friends, I barely spoke. I was basically mute in school, but at the time I felt fine, not depressed". She reports that currently, "the biggest problem I have in my life is the speech thing, not life necessarily… [My] speech issues have really contributed to my not having friends." She tends to minimize the emotional impacts of trauma, for example reporting no psychological sequelae from being robbed at gunpoint.

Case 2—When asked about how she experiences stress, this 24 year old female with functional tremor and migraine reports, "[I feel] like my brain is being squished and about to explode … like a balloon fills with water and is about to burst. When I get a migraine [the balloon] bursts. It comes out in movements too -- my head and chest will shake." The patient reports that while she previously "made the balloon go down" by cutting, now she uses healthier means learned in part from psychotherapy including reading a book, spending time with her boyfriend, and exercising. Escitalopram also helps with anxiety.

Case 3—This 65 year old male with long history of functional tremor, when speaking about his means of dealing with stress, reports that, "I more or less ignored it." He reports

that his childhood was characterized by the following: “for 15 years my parents almost yearly were getting a divorce, a lot of fighting … I tried to pretend it wasn’t happening.” His parents never discussed the patient’s emotions, and he states that every year, “Around my birthday, it wasn’t unusual that I got sick, hoping they wouldn’t argue on my birthday”. He reports that his movements have worsened over the past five months after his psychiatrist enabled him to see that he has never recognized his emotions.

Case 4—This 66 year old female with blepharospasm acknowledges that she has received attention for both physical and emotional pain in the past, and states that “I liked identifying as handicapped.” Her functional movements began after a leg injury years ago. She states that when she was a child, “my mother could only be there for me if I was in emotional pain … the only time I could count on her was when I was emotionally or physically sick.” She exhibits insight into her symptoms, stating, “I’m always afraid when people don’t see me [figuratively] … isn’t it interesting that my movement disorder is in my eyes.”

Case 5—This 67 year old female with a variety of functional movements acknowledges a “rough upbringing” with a mother who was verbally abusive. She describes having had a rocky marriage with a demanding husband; she had considered leaving him but remained due to concerns about the financial implications of a separation. Her symptoms started three years after her husband died. She states that, “[I have had] much trauma in my life -- I always just sucked it up. It’s afterwards I fall apart, like a few days of diarrhea or depression. The movements came on slowly after [my husband] died”. After he died, before the movements started she was “medicating with alcohol.”

Case 6—This 53 year old female with multiple abnormal movements, history of depression and anxiety, reports persistent guilt since the age of 24, when her mother, who had advanced stage cancer, shot and killed herself with a gun that the patient thought she had hidden from her. She reports that, “No one in my family would ever talk about it … it was like the dirty secret.” This pattern of failing to process trauma is also evident by the patient’s response to an extramarital affair she was involved in ten years prior to study participation. Despite the fact that she felt guilty for the affair, “I went through the motions of being OK.” At the present time her son takes care of her when she has her abnormal movements.

Case 7—This 28 year old female with functional trunk and pelvic myoclonus reports a childhood that was perhaps perceived by others as idyllic. She notes that, “people called us the Brady Bunch” and her mother raised her with the rule: “If you’re ever sad, don’t let anyone know. Always be happy.” After she was raped as an adult, her mother “told me to wrap [the rape] in a little box and put it in the back of my closet.” After her grandmother died, the patient’s mother’s “caregiver need went straight to me; I feel suffocated. I’ve been learning about boundaries from my therapist.”

Case 8—This 70 year old male with abdominal jerking movements notes that, “I’ve always had the feeling that I would get sick. My father died of a brain tumor, and I have always had migraines.” As a child, his family had financial difficulties due to his father’s illness. His functional movements started after a cruise with his wife, when he describes that “we were buying things, probably [spending] more money than we should spend, [although] my wife

said it was OK." He has had psychotherapy in his twenties to help with his migraines and the loss of his father, but he reports that "talking about my problems made my migraines worse."

Discussion

This study demonstrates that brief open-ended exploratory psychiatric interviews can add valuable qualitative information to our understanding of the potential underpinnings of chronic functional movement disorders. This information supplements previous work[2,3] which has generally focused on data from self-report structured measures and structured clinical interviews. The qualitative information may be grouped into common themes, one or more of which apply to virtually all of our subjects. These include the following:

1. Minimization of emotional impact of trauma, e.g. Subjects 1, 5, 6, 7, 10: "every day you get up and put one foot down after another"
2. Symbolic conversion of psychological stressors into a specific movement disorder, e.g. Subjects 1 (speech), 4 (blepharospasm), and 23 who "can't move forward" out of an abusive relationship
3. Emotional states converted into physical symptoms and expressed in somatic language, e.g. Subjects 2, 8, 9 ("my emotions become motions"), 16, 28, 29
4. Avoidance of or inability to recognize emotional states, e.g. Subjects 3, 17, 25, 27, 29, 33
5. Secondary gain from symptoms, e.g. Subjects 4, 6, 11, 20 (43 year old woman now cared for by her parents who had abused her), 21, 27

Perpetuation of functional symptoms is usually due to complex and interacting factors which may vary between individuals. In the discussion below, we have focused on the following: 1) comorbid psychiatric disorders; 2) emotion processing and other psychological factors; and 3) brain dysfunction.

1) Comorbid psychiatric disorders

For many patients, chronic symptoms are likely best conceptualized as physical manifestations of comorbid current psychiatric disorders. As Breuer and Freud theorized in Studies on Hysteria[9], "we adopt the term 'conversion' to signify the transformation of psychical excitation into chronic somatic symptoms, which is so characteristic of hysteria." Of our 36 subjects, 28 had current or lifetime psychiatric disorders in addition to conversion disorder, 22 had current disorders, and eight had no lifetime or current psychiatric comorbidities. Of the eight without comorbidities, five had clear emotional processing problems evident from the unstructured interview. Thus, we found no obvious psychological or psychiatric dysfunction in only three of our 36 subjects. Our psychiatric diagnostic prevalence findings are comparable to those found in other studies.[5,10] Kranick and colleagues previously found major depression in 37.1% and an anxiety disorder in 37.2% of patients with functional movement disorders.[2] Some have found predictors of chronic course including gradual symptom onset and comorbid psychiatric conditions.[5] For many of these

individuals, the mere presence of insight does not eliminate the movements. By analogy, patients with chronic anxiety may have insight into the fact that their worries are disproportionate, but manifest persistent symptoms nonetheless. It is also important to note that for some individuals, the diagnostic psychopathology was so clearly evident that it cannot be stated that additional qualitative interviews were essential to the understanding of the patient. For example, subject 12, a 44 year old woman with chronic depression and an extensive trauma history and subject 30, a 43 year old woman with psychiatric comorbidities and adult trauma.

2) Emotion processing and other psychological factors

Dysfunctional emotion processing appears to play a major role in the perpetuation of symptoms for some patients. For 24 of our subjects, emotion processing issues were revealed despite the fact that our interviews were brief. Only 11 had poor insight, underscoring the importance of more complex evaluations that extend beyond simply whether someone is aware that stress or psychosocial factors could be contributing to their movements.

For the individual who cannot recognize or is not permitted to express emotions in response to stressors such as neglect or trauma, abnormal movements may be produced and maintained. Some of our patients appear to have primary gain and/or secondary gain of sufficient strength to maintain the illness. Others have speculated that these factors are often contributory for individuals with FMD and PNES.[9,11,12] Psychological explanations may also include the construct of alexithymia which has been found to be elevated among some patients with FMD[13] and PNES.[4] Thus, some patients with impairment of cognitive processing of emotions may manifest movements rather than recognize and report psychological symptoms such as anxiety.[13,14]

3) Dysfunctional network interactions

While not the focus of the present report, it is important to include in any conceptual model some of the evidence that has accrued supporting impairments in brain connectivity in individuals with FMD. Several studies have demonstrated impaired limbic network processing in these patients, as well as altered functional connectivity between limbic and motor preparatory regions.[15,16] Patients have also been demonstrated to exhibit abnormalities in the self-agency network, with impaired connectivity between the right temporo-parietal junction, which plays a critical role in self-agency, and bilateral sensorimotor regions.[17] Although these studies support a functional disruption in network connectivity in patients with FMD, it remains difficult to explicitly demonstrate that these impairments are the cause, rather than consequence, of the disorder.

How can we explain the lack of any psychiatric findings in three of our subjects and similar individuals in other studies? Possibilities include: no psychiatric comorbidities, but other relevant factors may be present, e.g. interpersonal dynamics serving to maintain behavior; subthreshold comorbidities; past or current comorbidities that are undetected by interview; the presence of comorbidities but the patient denies them; and brain dysfunction entirely unrelated to psychiatric disorders or emotional processing problems.

Though our report suggests the presence of unresolved emotional and psychodynamic issues in some patients, we would not conclude that insight-oriented or psychodynamic psychotherapies are indicated for most patients. Some have reported success with psychodynamic therapies, as far back as Freud. A small single blind trial showed benefit[18] but a small crossover study did not.[19] Cognitive behavioral therapy continues to be the preferred treatment for most individuals with FMD, though data are sparse and limited to PNES, a similar condition.[20] In addition, a multidisciplinary treatment approach incorporating physical therapy has shown promise.[21,22]

Limitations of this study include reliance on one psychiatrist, the use of a single brief interview, one-time assessment, open-ended interviews without independent raters, and lack of administration of structured self-report scales to assess constructs such as insight and alexithymia. On the other hand, SCID interviews were performed by trained raters and the use of a single experienced PM psychiatrist obviated concerns about inter-rater reliability. And, as stated above, the purpose of the study was to demonstrate the utility of brief open-ended exploratory psychiatric interviews, not to replicate structured self-report data that has been generated in other research.

CONCLUSIONS

While an attempt to understand maintaining factors in patients with chronic FMD should include neurologic explanations and address clear psychiatric comorbidities such as depression and anxiety, our study supports the addition of open-ended qualitative interviews to explore emotional dynamics and conceptual frameworks among such patients. Exploratory interviews generate enhanced understanding of such complex patients, above and beyond that gained by simply assessing DSM diagnostic comorbidities. Future studies could explore the role of formulation in guiding individualized treatment programs. For some, such information might guide CBT treatment. For others, recommendations could be made for emotion regulation therapies such as mindfulness-based stress reduction (MBSR) and potentially for psychodynamic psychotherapy. Although some patients unfortunately do not obtain full symptom relief despite such treatments, it is nonetheless important to understand and communicate the factors that may be contributing to their unfortunate and debilitating disorder.

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TABLE 1

Patient Demographic & Clinical Characteristics

Subject	Age	Sex	Years since FMD onset	Phenomenology of functional movements	Psychiatric disorders, current	Additional lifetime psychiatric disorders	Insight	Selected additional information & patient language
1	33	F	16	Functional speech, facial spasms	None	MDD	partial	See case 1
2	24	F	5	Tremor	Dysthymia, GAD, Social Anxiety Disorder	None	good	See case 2
3	65	M	10	Tremor	None	None	partial	See case 3
4	66	F	1.67	Blepharospasm	None	MDD, Alcohol Use Disorder	good	See case 4
5	67	F	5	Dystonia	GAD	MDD	Good	See case 5
6	53	F	9	Functional speech, jerking movements, gait abnormalities	MDD, GAD, PTSD	Panic disorder	partial	See case 6
7	28	F	8	Truncal and pelvic jerking movements	Somatization disorder	MDD, GAD, PTSD, Borderline PD (probable)	Poor	See case 7
8	70	M	0.33	Abdominal jerking movements	GAD, Marijuana dependence	None	partial	See case 8
9	39	F	3	Tremor	PTSD	MDD	good	Stressor: Physical and verbal abuse from father Full understanding of psychological underpinnings: “my emotions become motions”.
10	58	M	13	Tremor	None	None	poor	Stressor: Ex-wife murdered son “Every day you get up and put one foot down after another”
11	54	F	14	Functional speech, tremor, dystonia	None	None	poor	Mother used to berate her. Now patient’s illness prevents her from caring for mother.
12	44	F	1.5	Tremor	MDD, OCD,	None	unclear	Chronically depressed; extensive

Subject	Age	Sex	Years since FMD onset	Phenomenology of functional movements	Psychiatric disorders, current	Additional lifetime psychiatric disorders	Insight	Selected additional information & patient language
					GAD, PTSD, Personality Disorder NOS			trauma history; disability pending (possible component of malingering); movements started after an affair
13	42	F	1	Functional speech, tremor	Somatization disorder, GAD	None	good	Can express emotions such as anger
14	55	F	1	Tremor	None	None	good	Acknowledges “irritation” with living with depressed relative
15	31	M	26	Tremor	GAD, Social Anxiety Disorder	None	good	Some dependency on parents but no clear dynamic issues
16	52	F	32	Tremor	Somatization disorder, MDD, PTSD	None	good	Mixed response to stress. She states that when her dogs died “I didn’t want to be alive, so I started to fail … my leg started not to work.” “The more tense I am, the more I tremble.”
17	58	F	3	Chewing dystonia	None	None	poor	“I tend to not go into those places where you feel depressed … [instead I] have a cup of tea or listen to music.”
18	42	F	0.75	Dystonia	None	Depressive disorder NOS	poor	Symptoms improving
19	33	M	9	Palatal myoclonus	None	Panic disorder, Social Anxiety Disorder—both mild	partial	Less focused on movements after “coming out” as homosexual, although movements have persisted
20	43	F	11	Functional speech, dystonia	MDD, GAD	None	partial	Abusive/neglectful parents when she was a child. She now lives with parents and relationships now improved.
21	62	F	2	Blepharospasm	None	None	partial	Conflictual marriage; “during his time being my caregiver … [my husband] feels needed and that I depend on him”
22	47	F	4	Tremor	GAD, Social Anxiety Disorder	MDD, PTSD	good	Symptoms started after surgery for thyroid cancer and then death of mother

Subject	Age	Sex	Years since FMD onset	Phenomenology of functional movements	Psychiatric disorders, current	Additional lifetime psychiatric disorders	Insight	Selected additional information & patient language
23	30	F	7	Gait abnormalities, tremor	GAD, possible dependent personality traits	None	good	History of abusive boyfriends; Stays with current boyfriend despite emotional abuse; when he mistreats her, her legs stick to the ground: "I can't move forward."
24	43	F	13	Dystonia, gait abnormalities	Probable mixed personality disorder	MDD	unclear	
25	54	M	2.5	Dystonia	None	None	poor	"I still don't know why" I left my first wife: "stress doesn't really get to me"; "I don't ever remember feeling anxious." Sad?—"very occasionally"; disability denial under review
26	35	F	3.5	Dystonia, gait abnormalities	None	None	poor	Also has chronic fatigue and "brain fog"
27	45	F	7	Gait abnormalities	Social Anxiety Disorder		good	"I keep a lot of stuff in me"; on disability for FMD; trial period working as a home health aide; "Ive completely burnt out taking care of other people."
28	39	M	3	Jerking movements, gait abnormalities	Somatization disorder, Hypochondriasis, OCD	MDD	partial	Father was selfish, now when around selfish people: mind starts "crashing and fogging up … static in my head"; sometimes "my lungs just stop"
29	46	F	5	Functional speech, tremor, gait abnormalities	Somatization disorder	MDD, PTSD	good	Severe childhood sexual trauma with past repression of those memories. Improving with psychotherapy and pharmacotherapy. "I had patterns of stuffing emotions away and doing something like getting good grades"; "I have to be very stressed before I notice anything … it comes out as a stomachache [and] I get a lot of headaches."

Subject	Age	Sex	Years since FMD onset	Phenomenology of functional movements	Psychiatric disorders, current	Additional lifetime psychiatric disorders	Insight	Selected additional information & patient language
30	43	F	4	Gait abnormalities	Somatization disorder	MDD, Panic Disorder, Social Anxiety Disorder, PTSD	good	Severe trauma as an adult. “Now I am more attuned to my body—now when I have a down day, my family knows they need to cook and clean and take care of the house” “I used to never cry, hold it all in. Now with FMD, I get emotional”
31	27	F	1	Tremor, jerking movements	None	GAD	poor	Lyme disease reported from 2004–2008; Sometimes “my hair shakes”
32	48	F	1.5	Tremor	MDD, dysthymia, Anxiety Disorder NOS	None	partial	Childhood abuse. Currently on disability.
33	58	F	3	Tremor	Somatization Disorder	None	poor	Chronic headache since age 2; mother had schizophrenia; husband carries her upstairs when she has a headache; on disability. Reports feeling depressed for years but now “it’s not good to wallow”; “I’m pretty darn calm”
34	32	F	1	Tremor	None	None	poor	Takes care of mother with Parkinson’s disease. When feels anger: “I bite my tongue or scream in pillow … if I get really mad I start cleaning.”
35	53	F	1	Palatal myoclonus	Hypochondriasis, OCD, GAD	None	poor	“I’ve always been a pessimist … I always worry.” Had been told that aspergillus was “eating into the bones of your brain”—not reassured by physicians who say she does not have that.
36	61	F	19	Tremor	Somatization disorder, GAD, histrionic and dramatic traits	None	partial	Recognizes role of stress but also environment. Magical thinking: Has theory that her fat cells break down at night and release toxins. After my leg biopsy Dr A described all the tissue down to my bone to be the strangest he had ever seen”

Abbreviations: FMD: functional movement disorder; MDD: major depressive disorder; PTSD: post-traumatic stress disorder; GAD: generalized anxiety disorder; OCD: obsessive compulsive disorder; NOS: not otherwise specified; PD: personality disorder.

Psychiatric disorders listed are in addition to Conversion Disorder.
Diagnoses were made using SCID, and confirmed by clinical interview with psychosomatic psychiatrist. Personality disorders were diagnosed from clinical interview with psychiatrist.
Years since FMD onset refers to years since initial FMD presentation; course may be episodic in some.