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Original Research Article

Symptom Preoccupation in Fibromyalgia: Prevalence and Correlates of Somatic Symptom Disorder in a Self-Recruited Sample

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Background: *Somatic symptom disorder (SSD) is characterized by a persistent and distressing psychological reaction to somatic symptoms. In pain disorders, the preoccupation with physical symptoms is associated with poor long-term outcomes. SSD may therefore be of use to identify and help chronic pain patients with particular needs.* **Objective:** *To test the hypothesis that in fibromyalgia, SSD is associated with higher anxiety sensitivity, health anxiety, and reactivity to pain, in addition to lower nonreactivity to inner experiences. In addition, to investigate if individuals with SSD report a larger impact of fibromyalgia core symptoms, more somatic symptoms, and higher psychiatric comorbidity.* **Methods:** *Using data from a clinical trial involving self-referred individuals with fibromyalgia, we compared participants with SSD to participants without SSD using* t*-tests and logistic regression.* **Results:** *Forty-nine out of 140 participants (35%) had SSD. Most findings corroborate that individuals with fibromyalgia who also meet criteria for SSD are worse off in terms of traits previously found to be predictive of a poor course in pain disorders. Post hoc analyses indicated that this could not be explained merely by a higher level of fibromyalgia core symptoms.* **Conclusion:** *SSD appears to be associated with a higher symptom burden in fibromyalgia, but further research is needed to draw firm conclusions regarding the reliability, acceptability, and utility of the SSD diagnosis in the clinic.*

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Key words: chronic pain, fibromyalgia, somatic symptom disorder, somatoform disorders.

INTRODUCTION

Somatic symptom disorder (SSD) is characterized by a distressing or disruptive psychological response to physical symptoms.[1] This psychological response may involve either (a) excessive and persistent thoughts about the seriousness of symptoms, (b) a persistently high level of anxiety about health or symptoms, or (c) excessive time and energy devoted to health or symptoms. In SSD, physical symptoms may or may not be explained by a somatic condition, but the psychological reaction is always clinically significant.[2] In pain conditions, several psychological traits that appear to show a conceptual overlap with SSD—traits such as health anxiety (fear of, or preoccupation with, severe illness) and anxiety sensitivity (fear of fear)—have been found to be predictive of chronicity and poor long-term outcomes.[3,4] The preoccupation with health and

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somatoform diagnoses of the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) such as hypochondriasis have also been found to be associated with pain severity in numerous studies.[5] Therefore, conceivably, a diagnosis of SSD could be used by clinicians as a broad "catch all" category to identify patients with pain who run the risk of particularly adverse long-term outcomes. Yet, little work has been done to characterize SSD in chronic pain or to investigate if the SSD diagnosis could be of use in clinical practice.

Fibromyalgia is a condition that is primarily characterized by chronic widespread musculoskeletal pain, although sufferers of fibromyalgia also commonly report other symptoms, such as fatigue, depression, sleep disturbance, cognitive impairment, and digestive problems.[6,7] Fibromyalgia has a global general population prevalence of approximately 2.7%[8] and is associated with significant distress, impairment, and societal costs.[9,10] As treatment effects are typically modest,[11] there is a need for a better understanding of this heterogeneous patient group. This has led to an increased interest in fibromyalgia subgroups.[12] Two studies have investigated the characteristics of SSD in fibromyalgia. In the first study, the authors came to the conclusion that most individuals with fibromyalgia are likely to also meet criteria for SSD and that having SSD was likely to be associated with lower age and higher psychiatric comorbidity.[13] In the second study, 26% of patients with fibromyalgia were deemed likely to meet criteria for SSD. Having a probable diagnosis of SSD was unrelated to sociodemographic variables, such as age and gender, but associated with more pronounced fibromyalgia core symptoms, a moderately higher burden of somatic symptoms, much higher psychiatric comorbidity, and much higher pain catastrophizing.[14] A limitation of both of these studies, however, is that they were based on self-rated questionnaires rather than a diagnosis of SSD made by a clinician.

The aim of the present study was to explore empirically the characteristics of SSD in fibromyalgia, as based on a clinical diagnosis of SSD. We hypothesized that those diagnosed with fibromyalgia who also met criteria for SSD would score higher in anxiety sensitivity, health anxiety, and reactivity to pain, while scoring lower in non-reactivity to inner experiences, than those who had fibromyalgia without SSD. We also hypothesized that participants with SSD would report an elevated impact of fibromyalgia core symptoms (the combined impact of pain, fatigue, sleepiness, and mood disturbance), more somatic symptoms (e.g., tinnitus), and higher psychiatric comorbidity. Finally, we also explored the possibility of a link between SSD and sociodemographic factors, somatic pathology, and response to exposure-based treatment (auxiliary analyses).

METHODS

Participants With Fibromyalgia

This study was based on data from a clinical trial of Internet-delivered exposure therapy for fibromyalgia,[15] ClinicalTrials.gov: NCT02638636. Applicants were self-referred and provided informed consent via a Web-based platform that was also used for data collection. Eligibility for the trial was assessed based on a screening battery and a structured telephone interview. Main eligibility criteria were a self-reported diagnosis of fibromyalgia given by a physician, not severe depression or suicidal ideation, no alcohol or substance use disorder, and no severe illness or other somatic condition requiring immediate treatment thus making treatment unfeasible.

Measures

Diagnostic assessment of SSD was based on the Health Preoccupation Diagnostic Interview which has demonstrated adequate interrater reliability in the assessment of SSD and illness anxiety disorder in applicants for a clinical trial of treatment for severe health anxiety ($\kappa = 0.59$).[16] Comorbid psychiatric diagnoses were surveyed using the Mini-International Neuropsychiatric Interview.[17] We also used the hypochondriasis module of the Anxiety Disorders Interview Schedule for DSM-IV[18] to validate SSD against the hypochondriasis diagnosis that formed the basis for most research on health anxiety during the DSM-III/IV era and which is similar to the diagnosis retained in the ICD-11, scheduled to come into effect in 2022.[19]

Several self-rated questionnaires were also administered. The impact of fibromyalgia core symptoms (pain, fatigue, sleepiness, and mood disturbance) was measured with the Fibromyalgia Impact Questionnaire (FIQ).[20] Other somatic symptoms were measured in terms of gastrointestinal symptoms using the Gastrointestinal Symptom Rating Scale–Irritable Bowel

Syndrome version,[21] and tinnitus symptoms using a 4-point scale from "No" (as in no tinnitus or recurrent sound) to "Yes, that is constantly noticed in all ordinary acoustic environments" as adapted from the study by Klockhoff and Lindblom.[22] Depression was measured with the self-report version of the Patient Health Questionnaire-9,[23] and general anxiety was measured with the GAD-7.[24] Anxiety sensitivity, that is, fear of fear, was measured with the 16-item Anxiety Sensitivity Index.[25] Health anxiety, that is, the fear or preoccupation with severe illness, was measured with the 14-item Short Health Anxiety Inventory.[26] Non-reactivity to inner experiences was measured with the Five Facet Mindfulness Questionnaire–Non-Reactivity to inner experience subscale.[27] Finally, reactivity to pain in terms of worrying, anger, and sadness was measured with the Pain Reactivity Scale.[28]

Procedure

Assessment Strategy and Diagnosis of SSD

This study was primarily based on data collected at baseline in the clinical trial. All participants completed the online questionnaires and underwent a telephone interview with a psychologist. The interview was scripted, took approximately 20–60 minutes to complete, and was a necessary step to be included in the trial. In conjunction with the eligibility interview, participants underwent a brief psychiatric assessment based primarily on the Mini-International Neuropsychiatric Interview, and SSD was assessed using the Health Preoccupation Diagnostic Interview. The psychologist also asked participants about somatic conditions out of the ordinary but did not attempt to diagnose specific somatic conditions such as irritable bowel syndrome or tinnitus in a systematic manner.

Exposure-Based Treatment

By means of randomization (1:1), half of the sample was assigned to receive 10 weeks of exposure therapy for fibromyalgia, whereas the other half of the sample was put on a waiting list. The exposure-based treatment was delivered via the Internet and conveyed via text, which is a proven treatment format.[29] The protocol was based on the assumption that pain and other fibromyalgia symptoms are maintained and exacerbated by avoidance of stimuli that elicit pain and pain-related distress. Exposure exercises were tailor-made to suit each participant and to address overt (using short-term analgesics, heat pads, or other aids, symptom-contingent resting) as well as covert (i.e., distraction, positive thinking) avoidance behaviors. Patients received continuous support from a licensed psychologist or graduate psychology student via a communication system reminiscent of email. As this was a psychological treatment with a waitlist control, it was not possible for patients or therapists to be blind to treatment assignment. More details about the treatment are provided in the primary publication.[15] The impact of fibromyalgia (i.e., FIQ) was measured on a weekly basis over the 10-week treatment period.

Statistical Analysis

Data were analyzed in Stata/MP 14.2. The primary analysis was a series of comparisons between participants with fibromyalgia who also met criteria for SSD and participants with fibromyalgia who did not have SSD. Differences in continuous variables were analyzed using *t*-tests, complemented by Hedges' *g* effect sizes. In the analysis of core symptoms, because the FIQ sum score amalgamates pain, fatigue, sleepiness, and mood disturbance, we also analyzed the pain, fatigue, and sleepiness subscales separately. With regard to *g*, absolute values of 0.2 are commonly regarded as small, 0.5 as moderate, and 0.8 as large.[30] Differences in dichotomous outcomes, such as the proportion of participants with a particular diagnosis, were analyzed using logistic regression, complemented with odds ratios. The exception to this was when cell sizes were lower than 5. In these cases, we used exact logistic regression.[31] Because we wanted to test for several possible differences between the SSD and non-SSD groups, Bonferroni correction was used to allow for multiple comparisons of similar phenomena. That is, alpha was divided by the number of tests within each domain where there was a high degree of dependency (e.g., the domain of psychiatric comorbidity). Based on the clustering of variables in domains, the expected effect sizes from a previous study on research criteria SSD in fibromyalgia[14] and the proportion of SSD participants in the present study, we decided a priori on which variables to test in order for the power of all tests to be at least 80% to find true between-group effects.

Because it is known that fibromyalgia symptoms exist on a continuum, we wanted to see if the SSD diagnosis had an explanatory value over and above that

TABLE 1. Comparison of Participants With and Without Somatic Symptom Disorder

Participant characteristics	SSD (n = 49)	Not SSD (n = 91)	Total (n = 140)	SSD vs. not SSD: g/OR (95% CI)	P
Sociodemographic factors					α = 0.05
Age, M (SD)	47.5 (8.8)	51.2 (10.9)	49.9 (10.4)	g = −0.36 (−0.71, −0.01)	0.0419
Education > USS (1/0)	33 (67%)	55 (60%)	88 (63%)	OR = 1.35 (0.65, 2.80)	0.4205
Employed and working (1/0)	27 (55%)	49 (54%)	76 (54%)	OR = 1.05 (0.52, 2.11)	0.8869
Fibromyalgia core symptoms					α = 0.05
Impact of fibromyalgia (FIQ)	61.9 (15.8)	53.5 (15.8)	56.4 (16.3)	g = 0.52 (0.17, 0.87)	0.0035
Pain severity (0–10)	6.4 (1.7)	5.9 (2.3)	6.1 (2.1)	g = 0.24 (−0.11, 0.59)	
Fatigue severity (0–10)	8.2 (1.8)	7.3 (2.5)	7.6 (2.3)	g = 0.41 (0.06, 0.76)	
Sleepiness severity (0–10)	8.0 (2.1)	7.2 (2.5)	7.5 (2.4)	g = 0.33 (−0.02, 0.67)	
Somatic conditions/symptoms					α = 0.05
At least one self-reported somatic condition out of the ordinary (1/0)	35 (71%)	56 (62%)	91 (65%)	OR = 1.56 (0.74, 3.31)	0.2435
IBS symptoms (GSRS-IBS)	24.7 (15.2)	20.7 (13.2)	22.1 (14.0)	g = 0.29 (−0.06, 0.63)	0.1058
Tinnitus symptoms*	1.1 (1.2)	0.6 (1.0)	0.8 (1.1)	g = 0.52 (0.17, 0.87)	0.0037
Psychiatric comorbidity					α = 0.01
Psychiatric disorders†	2.2 (1.6)	1.1 (1.1)	1.5 (1.4)	g = 0.81 (0.45, 1.16)	<0.0001
DSM-IV hypochondriasis (1/0)	9 (18%)	0 (0%)	9 (6%)	OR = 27.44 (4.18, ∞)§	<0.0001
Depression (PHQ-9)	12.9 (5.7)	9.4 (4.8)	10.6 (5.4)	g = 0.68 (0.32, 1.03)	0.0002
General anxiety (GAD-7)	8.5 (5.6)	5.2 (4.2)	6.4 (5.0)	g = 0.69 (0.33, 1.04)	0.0002
Psychotropic medication (1/0)‡	32 (65%)	46 (51%)	78 (56%)	OR = 1.84 (0.90, 3.77)	0.0954
Symptom preoccupation					α = 0.0125
Anxiety sensitivity (ASI)	23.9 (12.6)	14.3 (9.1)	17.7 (11.4)	g = 0.91 (0.55, 1.27)	<0.0001
Health anxiety (SHAI-14)	19.1 (6.8)	12.2 (4.6)	14.7 (6.4)	g = 1.26 (0.88, 1.63)	<0.0001
Nonreactivity (FFMQ-NR)	17.8 (4.1)	19.9 (4.6)	19.1 (4.5)	g = −0.47 (−0.82, −0.12)	0.0086
Reactivity to pain (PRS)	21.2 (6.8)	13.7 (5.9)	16.3 (7.2)	g = 1.21 (0.83, 1.58)	<0.0001

ASI = Anxiety Sensitivity Index[25]; CI = confidence interval; DSM-IV = Diagnostic and Statistical Manual of Mental Disorders IV; DSM-5 = Diagnostic and Statistical Manual of Mental Disorders 5; FFMQ-NR = Five Facet Mindfulness Questionnaire–Non-Reactivity to inner experience subscale[27]; FIQ = Fibromyalgia Impact Questionnaire[20]; GAD-7 = Generalized Anxiety Disorder-7[24]; GSRS-IBS = Gastrointestinal Symptom Rating Scale–Irritable Bowel Syndrome version[21]; OR = odds ratio; PHQ-9 = Patient Health Questionnaire-9[23]; PRS = Pain Reactivity Scale[28]; SHAI-14 = 14-item Short Health Anxiety Inventory[26]; SSD = somatic symptom disorder; USS = upper secondary school (Swedish: "gymnasium") equivalent to International standard classification of education level 3.

* Scale with range 0–3 adapted from Klockhoff and Lindblom.[22]

† DSM-5 somatic symptom disorder and DSM-IV hypochondriasis was not included.

‡ This refers to monoamine agonists (without regard for indication), anxiolytics, and sleep medications.

§ Exact logistic regression with median-unbiased estimates.

of the core symptoms of fibromyalgia (i.e., a "non-specific" fibromyalgia severity measure weighing in pain, fatigue, sleepiness, and mood disturbance). As a post hoc sensitivity analysis, we therefore added the impact of fibromyalgia (the grand mean centered FIQ sum score) as a covariate (simple effect and interaction with SSD) to the primary analyses. To control the Bonferroni-adjusted significance level and maintain acceptable power for these post hoc significance tests (Table 2 in the results), we chose to test only 3 key indicators of psychiatric comorbidity (general anxiety, depression, and the number of psychiatric disorders) and 3 key indicators of symptom preoccupation (anxiety sensitivity, health anxiety, and pain reactivity).

Finally, as an auxiliary analysis, we wanted to investigate if SSD was predictive of response to exposure therapy for fibromyalgia. For this analysis, we used a linear mixed-effects regression model, with a random intercept and random slope (time), where the impact of fibromyalgia (i.e., the FIQ) was regressed on time (week in treatment), group (exposure therapy vs. waiting-list), and diagnosis (SSD vs. not SSD). The

TABLE 2. Sensitivity Analyses With Fibromyalgia Core Symptoms as Covariate

Participant characteristics	Coefficient									Variance explained
	SSD (1/0)			FIQ sum score (grand mean centered)			SSD * FIQ interaction			
	b	95% CI	*P*	b	95% CI	*P*	b	95% CI	*P*	R^2/pseudo R^2
Sociodemographic factors			α = 0.05			α = 0.05			α = 0.05	
Age, M (SD)	−3.10	−6.83, 0.62	0.1019	−0.13	−0.26, 0.01	0.0610	0.08	−0.15, 0.31	0.4822	0.06
Education > USS (1/0)	0.42	−0.36, 1.19	0.2944	−0.02	−0.05, 0.00	0.0888	0.01	−0.03, 0.06	0.5643	0.02
Employed and working (1/0)	0.28	−0.48, 1.03	0.4742	−0.03	−0.06, −0.01	0.0171	0.01	−0.04, 0.06	0.6424	0.04
Somatic conditions/symptoms			α = 0.05			α = 0.05			α = 0.05	
At least one self-reported somatic condition out of the ordinary (1/0)	0.36	−0.42, 1.14	0.3599	0.01	−0.01, 0.04	0.3722	0.00	−0.05, 0.04	0.8766	0.01
IBS symptoms (GSRS-IBS)	1.69	−3.22, 6.60	0.4973	0.22	0.04, 0.39	0.0170	0.10	−0.20, 0.40	0.5253	0.10
Tinnitus symptoms*	0.58	0.20, 0.96	0.0030	0.01	0.00, 0.03	0.1033	−0.02	−0.05, 0.00	0.0476	0.09
Psychiatric comorbidity			α = 0.017			α = 0.017			α = 0.017	
Number of psychiatric disorders†	1.20	0.15, 2.26	0.0256	0.03	0.00, 0.06	0.0289	0.00	−0.07, 0.06	0.9475	0.10
Depression (PHQ-9)	1.47	0.07, 2.86	0.0397	0.17	0.12, 0.22	<0.0001	0.11	0.02, 0.19	0.0134	0.50
General anxiety (GAD-7)	1.65	0.20, 3.11	0.0264	0.11	0.05, 0.16	0.0001	0.14	0.05, 0.23	0.0024	0.38
Symptom preoccupation			α = 0.017			α = 0.017			α = 0.017	
Anxiety sensitivity (ASI)	8.03	4.28, 11.77	<0.0001	0.10	−0.03, 0.24	0.1280	0.13	−0.10, 0.36	0.2720	0.21
Health anxiety (SHAI-14)	5.75	3.85, 7.64	<0.0001	0.05	−0.01, 0.12	0.1251	0.13	0.02, 0.25	0.0268	0.35
Reactivity to pain (PRS)	5.88	3.81, 7.96	<0.0001	0.09	0.02, 0.17	0.0155	0.16	0.04, 0.29	0.0114	0.39

ASI = Anxiety Sensitivity Index[25]; CI = confidence interval; DSM-IV = Diagnostic and Statistical Manual of Mental Disorders IV; DSM-5 = Diagnostic and Statistical Manual of Mental Disorders 5; FFMQ-NR = Five Facet Mindfulness Questionnaire–Non-Reactivity to inner experience subscale[27]; FIQ = Fibromyalgia Impact Questionnaire[20]; GAD-7 = Generalized Anxiety Disorder-7[24]; GSRS-IBS = Gastrointestinal Symptom Rating Scale–Irritable Bowel Syndrome version[21]; OR = odds ratio; PHQ-9 = Patient Health Questionnaire-9[23]; PRS = Pain Reactivity Scale[28]; SHAI-14 = 14-item Short Health Anxiety Inventory[26]; SD = standard deviation; SSD = somatic symptom disorder; USS = upper secondary school (Swedish: "gymnasium") equivalent to International standard classification of education level 3.

* Scale with range 0–3 adapted from Klockhoff and Lindblom.[22]

† DSM-5 somatic symptom disorder and DSM-IV hypochondriasis was not included.

explanatory variables were added as simple-effects, 2-way interactions (all combinations) and a 3-way interaction. We tested the predictive value of SSD based on the 3-way interaction of time, group, and diagnosis. The study protocol was preregistered in the Open Science Framework repository (https://osf.io/3hgpn/?pid=vqhgn).

RESULTS

Prevalence and Sociodemographic Characteristics

Thirty-five percent (49/140) of the sample met criteria for SSD. Participants with SSD were younger than participants without SSD (small to moderate effect), but there was no difference in the level of education or employment status (Table 1).

Fibromyalgia Core Symptoms, Somatic Comorbidity, and Somatic Symptoms

As seen in Table 1, the impact of core symptoms of fibromyalgia (i.e., the FIQ) was significantly higher in participants with SSD than in those without SSD (moderate effect). Participants with SSD reported higher levels of tinnitus symptoms (moderate effect) but were not significantly more likely to report a somatic condition out of the ordinary. In addition, there was no significant difference in gastrointestinal symptoms.

Psychiatric Comorbidity and Medications

Participants with SSD had a significantly higher number of psychiatric disorders (large effect), and all who had hypochondriasis according to the DSM-IV had SSD according to the DSM-5 (large effect). Symptoms

of depression and general anxiety were higher in SSD (moderate to large effects), but there was no significant difference in the proportion of participants (SSD vs. not SSD) that reported at least one psychotropic medication (Table 1).

Symptom Preoccupation

Anxiety sensitivity—the fear of fear—was higher in participants with SSD (large effect). Health anxiety—the fear of, or preoccupation with, severe illness—was higher in those with SSD (large effect). Nonreactivity to inner experiences, that is, the ability to experience thoughts and emotions without acting on them, was lower in SSD (moderate effect). Finally, the reactivity to pain in terms of worrying, anger, and sadness was also higher in SSD (large effect). See Table 1 for details.

Fibromyalgia Core Symptoms as Covariate

As a post hoc sensitivity analysis, we repeated most primary tests with fibromyalgia core symptoms as a covariate (Table 2). When fibromyalgia core symptoms were included in the model, SSD was primarily associated with symptom preoccupation and, based on adjusted alpha levels, showed no statistically significant relationship with any other indicator of psychiatric comorbidity.

Response to Exposure Therapy

As reported in the primary publication,[15] 52 (74%) of the participants in treatment actively worked with the content and conducted at least one exposure exercise. There was a large and significant waitlist-controlled effect of exposure treatment on the impact of fibromyalgia in this clinical trial. In an explorative analysis, we analyzed treatment outcome data to see if baseline SSD moderated the effect of exposure therapy for fibromyalgia. The 3-way interaction of time (week in treatment), group (exposure therapy vs. waiting-list), and SSD diagnosis on the impact of fibromyalgia was not significant ($b = -0.18$, $P = 0.7991$).

DISCUSSION

This was the first study of SSD in fibromyalgia, as based on an SSD diagnosis given by a clinician. Approximately 35% of the participants had SSD. Most of our results were in line with our hypotheses and previous self-report data[13,14] in the sense that participants with SSD had substantially higher average anxiety sensitivity, health anxiety, and reactivity to pain, in addition to moderately lower non-reactivity to inner experiences. In line with our hypotheses, participants with SSD also had substantially higher psychiatric comorbidity and moderately higher impact of core fibromyalgia symptoms such as pain and fatigue. There was a similar overrepresentation of tinnitus symptoms. However, the picture was somewhat complicated by the lack of overrepresentation of irritable bowel syndrome symptoms, which was unexpected given the hypothesis that a higher degree of preoccupation with health is likely to lead to a higher symptom burden. We see no obvious explanation for this, but note that the overall level of irritable bowel syndrome symptoms in this sample with fibromyalgia was relatively low[32] and await future attempts at replication. On the whole, our findings corroborate that, in fibromyalgia, a diagnosis of SSD indicates that psychological processes commonly believed to maintain and exacerbate pain problems are likely to be especially pronounced.

Potential Utility of the SSD Construct

As alluded to in the introduction, the symptoms and effects of fibromyalgia can differ much from patient to patient, and it is thus probably important to tailor interventions for the patient at hand. In this context, based on our findings, SSD holds some promise as a useful tool in the real-life clinical management of fibromyalgia. This is since SSD appears to be common, perhaps affecting around one in 3 patients with fibromyalgia, and patients with SSD are especially likely to devote a large proportion of their time to behaviors aimed at evaluating physical symptoms and reducing symptom-related discomfort. In response to their physical symptoms, patients with SSD display strong emotional responses such as fear, frustration, or resentment, and these emotional reactions are likely to themselves become debilitating and difficult to manage. Patients may struggle with thoughts of severe disease states, the prospect of future disability, or catastrophic beliefs about not being able to manage other pain-related outcomes. It is probably important to identify these patients because numerous studies have found that symptom preoccupation—in terms of health anxiety, anxiety sensitivity, and reactivity to pain—is predictive of a less favorable long-term course in pain conditions.[3] This poor long-term course and the comorbidity associated with SSD, in turn, is very much in line with mainstream theoretical approaches to chronic pain and medically

unexplained symptoms, notable examples being the fear-avoidance theory of pain[3] and the cognitive behavioral model of health anxiety.[33] Moreover, several psychological and pharmacological treatments have notable effects on traits that overlap with the psychological response that is present in SSD, for example, in terms of health anxiety,[34,35] anxiety sensitivity,[36,37] and pain catastrophizing.[38,39] In summary, the fact that SSD appears to be reasonably common in fibromyalgia, SSD appears to capture a group of patients who score high in traits indicative of a poor prognosis, and SSD is likely to respond to known interventions speaks for its clinical utility.

What About Acceptability?

For the common clinician, there are also valid reasons to remain cautious about using the SSD diagnosis in routine practice until more is known about its relationship with chronic pain and common functional somatic disorders. Here, at least 4 cautionary notes are called for. First, there is the question of acceptability, that is, whether patients with fibromyalgia typically find a diagnosis of SSD, which is listed in the DSM-5, to be helpful and not too stigmatizing. In this study, the acceptability of the SSD diagnosis in the eyes of the individual with fibromyalgia was not investigated. We got the impression that the vast majority of participants were willing and able to discuss how they managed and felt about their physical symptoms, but the participants were never told whether they met full criteria for SSD.

Drawing the Line: Pros and Cons of Dichotomization

Second, individuals' preoccupation with health is likely to vary on a continuum, from benign awareness about the body to full-blown obsession with somatic health and everyday minute changes in physical symptoms.[40] It is widely recognized that categories such as SSD where the threshold for clinical significance is based on clinical judgment do not mirror the true dimensional nature of common psychological traits.[41] So far, in the case of SSD, little is also known about the reliability of the diagnostic process in individuals with fibromyalgia. On the other hand, a key advantage of the categorical approach is that it has the potential to facilitate the organization of the health-care system. That is, health-care guidelines are commonly built around the notion of offering particular interventions for particular diagnoses. Based on the available evidence, it also appears that SSD can be diagnosed with acceptable interrater reliability in some patient groups.[16,42]

Value of Classification vs. Dangers of Pathologization

Third, the SSD diagnosis has been famously criticized for being too inclusive, thereby introducing the risk of pathologizing normal psychological reactions.[43] In the context of this study, we wish to emphasize that we do not mean to suggest that it is unreasonable to react strongly to common symptoms of fibromyalgia or that fibromyalgia should be regarded as a psychiatric condition. We also do not wish to discredit the daily struggle and substantial impairment of the many suffering from fibromyalgia. We merely wish to highlight that for some patients, the psychological response to symptoms such as pain and fatigue may itself contribute to clinically significant distress or impairment. That being said, clinicians need be aware that numerous factors are likely to contribute to chronic pain regardless of whether the patient meets criteria for SSD or not, and the value of classification always has to be weighed against the dangers of pathologization. Whether or not SSD can pass this test and, if so, in what situations remains an open question that asks to be addressed on an empirical basis.

Does SSD Inform Clinical Practice?

Fourth, the notion that SSD may be important for the prognosis and treatment of chronic pain is so far based entirely on indirect evidence, for example, studies indicating that anxiety sensitivity and pain catastrophizing are important for understanding chronicity in pain. Whether a diagnosis of SSD can be tied directly to prognosis is yet not known, and there is yet no direct evidence, at least that we are aware of, that it is possible to gain additional effects on fibromyalgia by diagnosing and directly targeting SSD. In the present study, it was rather the case that the SSD diagnosis did not moderate the outcome of exposure treatment.

Limitations

There were notable limitations to this study. First, because we analyzed data from a clinical trial, the sample was not fully representative of the fibromyalgia population as a whole. On the other hand, participants are likely to have much in common with other patients actively seeking treatment. Second, recruitment was

based on self-referral, which evidently resulted in a high level of education compared with many other clinical samples. On the other hand, core fibromyalgia symptoms were high. Third, we did not ourselves establish the diagnosis of fibromyalgia which means that it is highly likely that at least some participants did not meet full criteria for fibromyalgia at the time of the study. On the other hand, this situation is similar to the routine care context, where a certain proportion of patients no longer meet full criteria for fibromyalgia albeit identifying with their diagnosis. Fourth, only one clinician diagnosed participants with SSD, and we cannot know for certain that the results had been similar if the interviews had been conducted by another clinician. On the other hand, interviews were guided by a structured instrument and there are no previous published data on SSD in fibromyalgia as based on clinical assessment.

CONCLUSION

SSD appears to be associated with heightened health anxiety, anxiety sensitivity, and pain catastrophizing in fibromyalgia, even when fibromyalgia core severity is already known. SSD appears to be relatively common in fibromyalgia, and owing to its relationship with predictors of long-term outcomes constitutes a potential target of interventions for this large and often neglected patient group. Studies need explore further the reliability and acceptability of SSD, and also whether SSD can be used to directly predict clinical outcomes in chronic pain and fibromyalgia.

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