Article

Dissociation, Childhood Interpersonal Trauma, and Family Functioning in Patients With Somatization Disorder

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Objective: The goals of this study were to determine 1) the occurrence of various dissociative phenomena in patients with somatization disorder, 2) the occurrence of six different types of childhood interpersonal trauma in these patients, and 3) the nature of these patients' early family environment.

Method: Twenty-two patients with somatization disorder and 19 medical comparison subjects completed the Structured Clinical Interview for DSM-IV Dissociative Disorders, the Childhood Trauma Interview, and the Family Functioning Scale.

Results: The somatization disorder patients reported significantly higher level of dissociative amnesia than the comparison subjects. The two groups reported similar levels of depersonalization, derealization, identity confusion, and identity alteration. Somatization disorder patients reported significantly greater childhood emotional abuse and more severe forms of physical abuse, relative to the comparison subjects, with chronic emotional abuse being the best predictor of unexplained symptoms. Childhood sexual abuse, separation/loss, and witnessing violence were equally common in the two groups. The somatization disorder group reported significantly more family conflict and less family cohesion.

Conclusions: Only some types of dissociation are more severe in patients with somatization disorder, relative to medical comparison subjects. Many patients with somatization disorder are raised in an emotionally cold, distant, and unsupportive family environment characterized by chronic emotional and physical abuse. Sexual abuse is not a necessary prerequisite for the disorder.

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Physicians frequently encounter patients with a history of symptoms that cannot be explained by organic factors (1). In cases where such symptoms cannot be attributed to anxiety, depression, or hypochondriasis, a diagnosis of somatoform disorder is made. Somatization disorder, characterized by a history of at least eight unexplained symptoms in four or more bodily systems, represents the extreme end of a continuum of somatoform severity. Such patients describe high levels of distress, functional disability, and health resource utilization (2, 3). Many are resistant to psychological treatment, and the prognosis of the condition is poor (4).

Early attempts to describe the pathogenesis of such "medically unexplained" symptoms assumed that these conditions were caused by the separation, or "dissociation," of distressing material from conscious awareness (5, 6). This process of dissociation is thought to be triggered by traumatic events, often occurring in childhood. The concept of dissociation has since been resurrected in a number of theories, and it has become the focus of one of the dominant models in this area (e.g., references 7–10).

Several different psychological symptoms are thought to reflect a dissociative process, including psychogenic amnesia, depersonalization-derealization, and identity alteration. A number of studies have shown that such symptoms are particularly common in patients with somatoform disorders, apparently supporting the dissociation model (11–15). Conversely, many patients presenting with dissociative disorders also report large numbers of unexplained symptoms (16–19). However, not all studies have found a link between dissociation and unexplained illness (20–22). Moreover, one study showed that the relationship between dissociation and unexplained illness disappears in analyses that control for trauma exposure (23). Such inconsistent findings are attributable to confusion about the precise definition of dissociation and to difficulties in operationalizing the phenomenon empirically (24, 25). Several different forms of dissociation have been identified (e.g., references 5, 6, 7, 10), and an increasing number of phenomena have been associated with the dissociative label (25). Existing measures of dissociation, such as total scores on the Dissociative Experiences Scale (26), tend to conflate these different types of dissociation, making it impossible to assess which, if any, are associated with unexplained illness.

A number of studies have assessed the prediction that somatoform illness is associated with childhood trauma. Somatoform illness has been linked to both childhood

physical (11, 21, 22, 27–30) and sexual abuse (11, 22, 23, 27–30). However, only a minority of studies (23, 30) have investigated patients with multiple unexplained symptoms. There is also limited evidence to suggest that childhood emotional neglect (22) and abuse (23, 28, 29) are associated with unexplained illness. However, studies addressing emotional abuse have either used nonstandard measures (23) or identified the occurrence of abuse using a single question (27, 28), which is unlikely to provide an accurate measure of trauma prevalence. Accordingly, very little is known about the nature or frequency of emotional abuse in patients with unexplained symptoms. Similarly, existing research has not addressed whether experiences such as neglect and parental loss are also associated with the occurrence of somatoform illness.

Research in this area has other limitations. Many studies, for example, have used dichotomous codes for physical or sexual abuse (i.e., present versus absent), without reporting information about frequency, severity, or duration. This approach prevents analyses that can assess the relationship between trauma magnitude and subsequent psychopathology. In addition, most studies have not considered the fact that childhood trauma is often confounded with other pathogenic family factors, such as boundary confusion, rigid behavioral control, and poor adaptability (31). It may be that these factors play a more important role in the development of somatoform illness than childhood trauma per se.

The present study investigated the occurrence of dissociation and trauma in patients with somatization disorder, extending the literature in several ways. First, we assessed for dissociation using a structured clinical interview that provides information about various types of dissociative phenomenon. This step allowed us to address the hypothesis that only some forms of dissociation are associated with somatoform illness (24). Second, we used a standardized semistructured interview that addresses not only childhood physical and sexual abuse but also four other domains of childhood interpersonal trauma (separation/loss, neglect, emotional abuse, and the witnessing of violence) that have rarely been investigated previously. This measure provides information concerning the severity, frequency, and duration of trauma, allowing for an assessment of the relationship between trauma magnitude and symptom patterns. Finally, we included a measure of childhood family functioning to assess the possibility that general family factors mediate the relationship between somatoform illness and childhood trauma.

Method

Participants

Twenty-eight patients with a documented history of multiple unexplained symptoms agreed to participate. All had received in- or outpatient treatment at a specialist neurological hospital and were identified through this center. Twelve were identified retrospectively through analysis of discharge summaries from the hospital neuropsychiatry ward from the preceding 3 years. Ten were identified prospectively after admission to the neuropsychiatry ward and had been identified as having multiple unexplained symptoms during this admission. A further six participants were recruited as part of another study but were included after their histories of multiple unexplained symptoms were uncovered.

Diagnoses of somatization disorder were made according to the DSM-IV criteria. Participants had to have a history of multiple unexplained physical symptoms beginning before age 30 years, including at least four pain symptoms, two gastrointestinal symptoms, one sexual-reproductive symptom, and one neurological symptom. Symptoms had to have precipitated treatment seeking or caused impairment in social/occupational functioning. Symptom histories were obtained by means of an open interview about the participant's current and past medical history, as well as a structured interview about previous physical symptoms and disorders as part of the Schedules for Clinical Assessment in Neuropsychiatry (SCAN) (32). Where possible, general practice and hospital records were obtained (with the patient's consent) and studied. A neurologist (A.S.) with psychiatric experience conducted the interviews and analyzed all records. Symptoms were classified as either explained or unexplained by organic factors, on the basis of results from appropriate investigations and/or clinical diagnosis. Minor medical symptoms, such as minor injuries, pharyngitis, otitis media, or a single episode of urinary tract infection or gastroenteritis, were excluded.

The comparison group initially consisted of 22 patients with dystonia of established organic origin. These subjects were consecutively recruited from a neurological botulinum toxin clinic and had diagnoses of classical cervical dystonia or generalized dystonia caused by the *DYT-1* mutation, a basal ganglia lesion, or anoxic birth injury. All of the comparison participants underwent the same evaluation as the somatization disorder group. It was later found that one of the comparison subjects met the criteria for somatization disorder, and data for that subject were excluded. SCAN data from two comparison subjects and one patient with somatization disorder were lost because of equipment failure. Three participants with unexplained symptoms did not meet the full criteria for somatization disorder, and their data were excluded. Two somatization disorder patients did not complete the dependent measures for logistical reasons.

The final study group consisted of 22 patients with somatization disorder (20 women, two men) with an average age of 40.9 years (SD=9.5) and 19 comparison participants (13 women, six men) with an average age of 47.4 years (SD=14.6). The two groups did not differ with respect to age (t=1.67, df=30, p=0.11) or sex (χ^2= 3.28, df=1, p=0.07). General practitioner records were obtainable for 14 patients with somatization disorder (73.7%) and 14 comparison subjects (63.6%); hospital records were available for all participants. The mean number of unexplained symptoms in the somatization disorder group was 31.3 (SD=10.6), compared to 3.7 in the comparison group (SD=2.6).

By using SCAN results, the following comorbid DSM-IV disorders were identified in the somatization disorder group: generalized anxiety disorder (N=10), panic attacks (N=9), simple phobia (N=1), agoraphobia (N=3), social phobia (N=1), obsessive-compulsive disorder (N=1), posttraumatic stress disorder (N=3), mood disorder (N=13), and eating disorder (N=1). The following comorbid disorders were identified in the comparison group: generalized anxiety disorder (N=4), anxiety disorder not otherwise specified (N=3), depression not otherwise specified (N=3), and alcohol abuse disorder (N=1). Seven somatization disorder patients and 11 comparison subjects did not meet the criteria for any other clinical disorders.

After complete description of the study, written informed consent was obtained from all participants.

Materials

Dissociation. Dissociation was measured with the Structured Clinical Interview for DSM-IV Dissociative Disorders (SCID-D) (33). The SCID-D is a semistructured interview that assesses past and current episodes of clinical dissociation in five domains: amnesia, depersonalization, derealization, identity confusion, and identity alteration. Each section comprises a series of probe questions pertaining to different examples of dissociation within that domain. Positive responses are followed up by questions concerning the nature and frequency of each experience. In each domain, the participant's reports are rated on a 4-point scale of severity (absent, mild, moderate, severe), on the basis of a detailed manual. The scale has good reliability and validity (33).

Childhood trauma. The Childhood Trauma Interview (34) is a brief semistructured interview assessing childhood interpersonal trauma in six domains: separation/loss, neglect, emotional abuse, physical abuse, witnessing violence, and sexual abuse. Each section comprises a series of probe questions designed to elicit experiences relevant to that domain. Positive responses to probe questions are followed up with questions concerning the nature, frequency, and duration of the experience and the perpetrators involved. This process is repeated until all perpetrators and forms of trauma in each domain are identified. The scale has good psychometric properties and convergent validity (34).

The severity and frequency of childhood interpersonal trauma are rated separately on scales ranging from 1 to 6, on the basis of a detailed manual. Total exposure scores for each trauma domain are calculated by summing the product of the severity, frequency, and duration scores across all perpetrators within each category.

The separation/loss section addresses interruptions in early attachments, including those caused by parental absence related to separation, divorce, illness, death, incarceration, etc., or the absence of the child from the family home. The neglect section asks about early material deprivations (e.g., of food, clothing, shelter, medical care) and levels of childhood supervision. The emotional abuse section inquires about experiences of being shouted at, insulted, criticized, threatened, ignored, humiliated, or scapegoated. The physical abuse section asks about experiences of being hit, beaten, kicked, burnt, suffocated, cut, shot, or locked up. The witnessing violence section includes questions on violence witnessed both in and outside the home. The sexual abuse section asks about both contact and noncontact childhood sexual experiences. Consenting experiences with similar-age peers were not included.

Family functioning. The Family Functioning Scale (35) is a 75-item self-report questionnaire assessing family functioning in 15 domains: cohesion, expressiveness, conflict, intellectual-cultural orientation, active-recreational orientation, religious emphasis, organization, family sociability, external locus of control, family idealization, disengagement, democratic family style, laissez-faire family style, authoritarian family style, and enmeshment. It has satisfactory psychometric properties and discriminant validity (35). Scale items consist of statements concerning family life; participants are asked to rate on a 4-point Likert scale how true each statement is for their own family. All participants were asked to complete the scale in relation to their childhood family setting.

Procedure

All participants were interviewed by the second author about their past medical history and were administered the SCAN. After a break, a research psychologist (R.B.) administered the SCID-D and Childhood Trauma Interview. Participants were asked to complete the family functioning questionnaire at home.

Data Analysis

One participant from each group failed to complete the Family Functioning Scale, one somatization disorder participant refused to complete the Childhood Trauma Interview, and one somatization disorder participant was unable to complete the witnessing violence section of the Childhood Trauma Interview. In addition, one participant with somatization disorder failed to complete approximately half of the items on the Family Functioning Scale. Data for these participants were excluded from all analyses involving these variables. For the remaining participants, 0.97% of the comparison group responses had missing values, as did 1.16% of the somatization disorder group responses. With the exception of Family Functioning Scale items, all missing values were replaced with the relevant group mean. For the Family Functioning Scale, missing values were replaced with the mean of each individual's scores on the remaining items from the relevant subscale.

The majority of the SCID-D and Childhood Trauma Interview variables had L-shaped distributions. Accordingly, medians and interquartile ranges are reported for these variables. For all inferential analyses of these variables, nonparametric statistics (Mann-Whitney test, Spearman's rank-order correlations) were used. Parametric tests (t tests) were used for comparative analyses involving the Family Functioning Scale. The nonindependence of the study variables meant that statistical correction for multiple comparisons using the Bonferroni or Holm (36) adjustments was inappropriate in this context. To minimize the likelihood of type I errors, all statistical analyses were two-tailed.

Results

Dissociation

Table 1 presents descriptive statistics for the SCID-D and Childhood Trauma Interview. Amnesia scores were significantly higher for the somatization disorder group ($U=134.5$, $p<0.03$), with 11 patients (50%) reporting severe dissociative amnesia, compared to three comparison subjects (15.8%). The groups did not differ on any of the other SCID-D dimensions; median scores of 1 on each of the other dimensions for both groups indicated that most participants did not report other dissociative symptoms.

Childhood Trauma

All but three participants (one patient with somatization disorder, two comparison subjects) had experienced moderate to severe trauma (severity score of 3 or above on the Childhood Trauma Interview) of at least one kind. The somatization disorder group reported more severe forms of physical abuse ($U=123.0$, $p<0.04$). Regarding total exposure scores, the somatization participants scored significantly higher than the comparison subjects in the domain of emotional abuse ($U=104.5$, $p=0.009$); the somatization subjects had greater exposure to physical abuse than the comparison subjects, but the difference only approached significance ($U=130.5$, $p=0.06$). The comparison group had significantly higher total exposure scores for neglect ($U=133.5$, $p=0.05$). The somatization disorder group also reported more emotional abuse perpetrators ($U=123.5$, $p<0.04$) and a longer duration of emotional abuse ($U=110.0$, $p<0.02$).

TABLE 1. Descriptive Statistics for Structured Clinical Interview for DSM-IV Dissociative Disorders and Childhood Trauma Interview Variables for Patients With Somatization Disorder and Comparison Subjects With Dystonia

Measure and Item	Patients With Somatization Disorder (N=22)		Dystonia Comparison Subjects (N=19)		
	Median	Interquartile Range	Median	Interquartile Range	p[a]
Structured Clinical Interview for DSM-IV Dissociative Disorders domain score					
Amnesia	3.5	3.0	1.0	0	<0.03[b]
Depersonalization	1.0	1.3	1.0	0	n.s.
Derealization	1.0	0	1.0	0	n.s.
Identity confusion	1.0	0	1.0	0	n.s.
Identity alteration	1.0	0	1.0	0	n.s.
Childhood Trauma Interview[c]					
Separation/loss					
Number	1	2	1	2	n.s.
Greatest severity score	3	3	2	2	n.s.
Total duration (years)	1.5	8.5	0.3	4.5	n.s.
Total exposure score	4.7	27.2	0.8	14.0	n.s.
Neglect					
Greatest severity score	0	2	2	3	0.06
Total duration (years)	0.0	1.0	<0.1	3	0.06
Total exposure score	0.0	13.5	<0.1	30.0	0.05[b,d]
Emotional abuse					
Number of perpetrators	2	2	1	2	<0.04[b]
Greatest severity score	3	2	3	3	n.s.
Total duration (years)	14.0	19.5	<0.1	4.0	<0.02[b]
Total exposure score	134.0	345.5	<0.1	45.0	0.009[b]
Physical abuse					
Number of perpetrators	2	2	1	1	0.10
Greatest severity score	3	1	2	1	<0.04[b]
Total duration (years)	4.0	10.0	<0.1	8.0	n.s.
Total exposure score	32.0	132.0	<0.1	25.0	0.06
Witnessing violence					
Number of perpetrators	1	1	1	1	n.s.
Greatest severity score	3	4	1	2	0.08
Total duration (years)	<0.1	2.5	<0.1	8.0	n.s.
Total exposure score	<0.1	22.0	<0.1	24.0	n.s.
Sexual abuse					
Number of perpetrators	1	1	0	1	n.s.
Greatest severity score	1	2	0	1	n.s.
Total duration (years)	<0.1	1.1	0.0	<0.1	n.s.
Total exposure score	0.0	4.0	0.0	<0.1	n.s.

[a] Mann-Whitney test.
[b] Significant difference between groups.
[c] N=21 patients with somatization disorder for all sections of the Childhood Trauma Inventory except the witnessing violence section, for which N=20 patients with somatization disorder.
[d] Direction of difference was opposite to that predicted.

Family Functioning

Table 2 presents descriptive statistics for the Family Functioning Scale. The somatization participants scored significantly lower than the comparison subjects on cohesion ($t=2.44$, $df=27.7$, $p<0.03$) and significantly higher on conflict ($t=2.35$, $df=36$, $p<0.03$).

Correlations

Total number of unexplained symptoms correlated significantly with cohesion scores on the Family Functioning Scale ($r_s=-0.57$, $df=20$, $p=0.01$), as well as with emotional abuse ($r_s=0.70$, $df=21$, $p<0.0001$) and physical abuse ($r_s=0.48$, $df=21$, $p<0.03$) scores. The correlation between number of unexplained symptoms and SCID-D amnesia domain only approached significance ($r_s=0.39$, $df=22$, $p=0.07$). Emotional abuse exposure correlated significantly with SCID-D amnesia domain ($r_s=0.44$, $df=21$, $p<0.05$).

Discussion

The findings of this study are only partly consistent with previous research and theory suggesting a link between unexplained symptoms and dissociation (5–19). Dissociative amnesia was frequently reported by the somatization disorder participants and was significantly more common in this group, relative to the medical comparison subjects. However, there were no differences in the level of depersonalization, derealization, identity confusion, and identity alteration reported by the two groups.

These findings suggest that only certain dissociative phenomena are associated with unexplained illness (24). One interpretation is that unexplained neurological symptoms share a common etiological mechanism with dissociative amnesia (8, 24), which is different from the mechanism operating in depersonalization-derealization (24). It is noteworthy that only dissociative amnesia has separa-

tion of material from conscious awareness as a cardinal feature, a concept that is central to early psychodynamic definitions of dissociation (5, 6). It may be that these definitions of dissociation are more relevant to understanding unexplained illness than the generic definition adopted by DSM-IV, which combines phenomena such as amnesia, depersonalization, and identity confusion within a common category irrespective of whether the same mechanism is operating in each case. Explicit definition of the types of dissociation being investigated is clearly needed in future studies in this area, and measures that enable different types of dissociative phenomena to be looked at separately should be included. For this reason, the use of total scores on the Dissociative Experiences Scale (26) as a unitary measure of dissociation should be proscribed.

Although the somatization disorder group had been exposed to more severe forms of physical abuse and had witnessed more extreme forms of violence, relative to the comparison subjects, the two groups did not differ significantly in total exposure to physical abuse, contrary to previous research (11, 21, 22, 27–30). In contrast, the somatization participants were exposed to greater levels of emotional abuse, with more perpetrators in this domain, and a greater frequency and duration of victimization. In most cases, abuse in the form of shouting, severe criticism, and/or extremely insulting remarks occurred over periods of many years, typically involving both parents or involving one parent and a sibling. Total exposure to emotional abuse was a particularly strong predictor of unexplained symptoms, accounting for almost 50% of the variance in this measure. Unlike previous findings (11, 22, 23, 27, 29, 30), no association was found between unexplained illness and the occurrence of childhood sexual abuse. The groups also did not differ in overall exposure to childhood neglect (with adjustment for age), separation/loss, or witnessing violence.

Relative to the comparison group, the somatization disorder group reported a significantly higher level of family conflict and a significantly lower level of family cohesion. Evidently, many patients with somatization disorder are raised in an environment characterized by frequent arguments, emotional distance, and poor support, consistent with the high levels of physical and emotional abuse reported by this group. The pattern and magnitude of the intercorrelations between these variables suggest that the relationship between emotional abuse and unexplained symptoms in patients with somatization disorder cannot be attributed solely to their exposure to a broadly pathogenic family environment (see reference 30).

One obvious limitation of this study is its reliance on retrospective trauma reports without corroborating evidence. It is possible, for example, that the relatively high levels of trauma reported by the somatization disorder group are due to overreporting. Previous research suggested that overreporting of early trauma is rare, however (37). It is also possible that dissociative amnesia led to underreporting of trauma in the somatization disorder group, which may explain why sexual abuse was rarely reported by these individuals. Nevertheless, these patients did not seem to be amnesic for the chronic physical and emotional abuse that they experienced. This finding raises important questions about the nature of dissociation in patients with unexplained symptoms. According to Janet (5) and Meares (10), any traumatic event leading to the development of unexplained symptoms should be unavailable for recall because of dissociation. If this were true, the traumatic events reported by the somatization disorder subjects could not have prompted the development of unexplained symptoms through dissociative processes. According to Breuer and Freud (6), however, dissociation may simply limit access to the affect associated with traumatic events and not to the memories of the events themselves. Our findings are clearly more consistent with this account of dissociation. Ultimately, methods that consider the dissociative process itself, rather than the antecedents or consequences of this process, are needed to determine the exact nature of dissociation in somatoform illness.

Another limitation of the study is its use of a neurological rather than a psychiatric comparison group. Because of the characteristics of the comparison group, the findings provide no information on whether the levels of emotional and physical abuse reported by the somatization disorder patients are higher than those in patients with other psychiatric conditions. However, comorbid psychopathology was commonly reported by the comparison participants, who were similar to the somatization disorder participants in other illness variables, making them an

TABLE 2. Family Functioning Scale Scores of Patients With Somatization Disorder and Comparison Subjects With Dystonia

Family Functioning Scale Item	Score			
	Patients With Somatization Disorder (N=21)		Dystonia Comparison Subjects (N=18)	
	Mean	SD	Mean	SD
Cohesion[a]	12.1	2.0	13.3	1.0
Expressiveness	12.3	1.7	12.4	1.5
Conflict[b]	10.9	1.8	9.6	1.5
Intellectual-cultural	12.9	1.9	12.7	1.5
Active-recreational	12.1	1.5	12.2	1.7
Religious emphasis	10.7	2.3	11.5	1.9
Organization	13.4	1.6	13.2	1.5
Family sociability	12.6	2.7	13.3	2.7
External locus of control	12.4	2.5	12.9	1.5
Family idealization	12.5	2.5	13.4	2.1
Disengagement	12.9	2.3	12.2	1.7
Democratic family style	11.3	1.6	10.6	1.7
Laissez-faire family style	10.9	2.1	10.1	1.4
Authoritarian family style	11.9	1.9	11.4	1.8
Enmeshment	10.9	3.4	10.3	2.9

[a] Significant difference between groups (t=2.44, df=27.7, p<0.03).
[b] Significant difference between groups (t=2.35, df=36, p<0.03).

appropriate comparison group. Moreover, because this study included a medical comparison group, it provides information about the value of dissociation and childhood trauma as aids to the differential diagnosis of patients with unexplained symptoms. Nevertheless, attempts at replication with larger groups of subjects and with other comparison groups are necessary to establish the validity and generalizability of the study findings.

Taken together, these findings suggest that chronic emotional abuse might be the most important setting condition for the development of somatization disorder; other severe forms of interpersonal trauma may occur in this context, but they perhaps play a lesser role in the development of pathology. The study indicates that many people with somatization disorder are exposed to an early environment that is emotionally cold, harsh, and characterized by frequent criticism, insults, rejection, and physical punishment. This environment also appears to be linked to the development of dissociative amnesia, a common concomitant of unexplained illness. However, it is apparent that other dissociative phenomena are no more common in somatization disorder than in comparison medical populations. Similarly, sexual abuse does not appear to be a necessary prerequisite for the development of multiple unexplained symptoms.

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