Childhood abuse in patients with conversion disorder.

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Childhood Abuse in Patients With Conversion Disorder

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Objective: Despite the fact that the assumption of a relationship between conversion disorder and childhood traumatization has a long history, there is little empirical evidence to support this premise. The present study examined this relation and investigated whether hypnotic susceptibility mediates the relation between trauma and conversion symptoms, as suggested by Janet's autohypnosis theory of conversion disorder.

Method: A total of 54 patients with conversion disorder and 50 matched comparison patients with an affective disorder were administered the Structured Trauma Interview as well as measures of cognitive (Dissociative Experiences Scale) and somatoform (20-item Somatoform Dissociation Questionnaire) dissociative experiences.

Results: Patients with conversion disorder reported a higher incidence of physical/sexual abuse, a larger number of different types of physical abuse, sexual abuse of longer duration, and incestuous experiences more often than comparison patients. In addition, within the group of patients with conversion disorder, parental dysfunction by the mother—not the father—was associated with higher scores on the Dissociative Experiences Scale and the Somatoform Dissociation Questionnaire. Physical abuse was associated with a larger number of conversion symptoms (Structured Clinical Interview for DSM-IV Axis I Disorders). Hypnotic susceptibility proved to partially mediate the relation between physical abuse and conversion symptoms.

Conclusions: The present results provide evidence of a relationship between childhood traumatization and conversion disorder.

Conversion disorder is characterized by the presence of deficits affecting the voluntary motor or sensory functions. These symptoms suggest neurological or organic causes but are believed to be associated with psychological stressors (DSM-IV). Pierre Janet had emphasized the relation between conversion disorder and childhood trauma by the end of the 19th century. He viewed dissociation of cognitive, sensory, and motor processes as adaptive in the context of an overwhelming traumatic experience (1, 2). Unbearable emotional reactions to traumatic experiences would result in an altered state of consciousness. Because Janet considered this alteration in consciousness to be a form of hypnosis, his theory is referred to as the autohypnosis theory of conversion disorder. In line with Janet, contemporary authors (3–7) have also argued that conversion symptoms involve a dissociation of sensory and motor processes and that the symptoms resemble dissociative phenomena evoked in hypnosis by means of suggestions of changes in sensory or motor processing. In both conversion disorder and hypnosis, the dissociative phenomena are characterized by inhibited explicit (conscious, voluntary) information processing, while implicit or automatic information processing is still intact (5). Patients with conversion blindness, for example, typically report no explicit visual awareness, whereas visual stimuli have frequently been shown to implicitly influence their behavior (1, 5). Such dissociation between implicit and explicit information processing is called cognitive dissociation when it affects memory functioning and somatoform dissociation when it affects sensory or motor functioning, as is the case in conversion disorder.

The main prediction of autohypnosis theory is that there is a relation between childhood traumatization and cognitive or somatoform dissociative symptoms that is mediated by a process in which a traumatized individual uses his or her innate hypnotic capacities to induce "self-hypnosis" as a defense response to overwhelming traumatic events (3, 8). This prediction implies that persons who are more capable of evoking dissociative experiences under hypnosis might be more likely to develop conversion symptoms in reaction to traumatization.

One important assumption of the autohypnosis theory of conversion disorder is, therefore, that a relation exists between conversion symptoms and hypnotic susceptibility. This relation has been confirmed by two systematically controlled studies (9, 10). Another major assumption of autohypnosis theory is that conversion disorder is associated with childhood traumatization (2). Despite the fact that this assumption is currently widely adopted, pseudoepileptic seizures form the only type of conversion disorder to which a clear relation with traumatic experiences has been shown (11–14).

In sum, although there is evidence for a relation between hypnotic susceptibility and symptom severity in conversion disorder, the presumed role of childhood traumatization lacks empirical support, and, even more important, we know of no studies that have investigated the assumption of autohypnosis theory that the relation between childhood traumatization and conversion symptoms is mediated by hypnotic susceptibility.

The primary focus of the current study was to test whether conversion disorder is featured by childhood traumatization. In this study we compared the trauma reports of patients with a conversion disorder to the trauma reports of patients with common psychiatric disorders, i.e., affective disorders, with a comparable level of general psychopathology not primarily featured by dissociative symptoms. Until recently, research on the etiology of dissociation in adults has focused primarily on sexual abuse. Currently, however, the role of emotional neglect (15, 16) and physical abuse (17) is strongly emphasized and is sometimes found to be even more important than sexual abuse. In the present study, therefore, the incidence not only of childhood sexual abuse but also of childhood emotional neglect and physical abuse was investigated. However, a possible group difference in the incidence or type of childhood traumatization still would not provide information as to whether traumatization is related to conversion symptoms. For this reason, the second aim of the present study was to investigate the relation between the presence of childhood traumatization and the severity of symptoms in patients with conversion disorder. The third purpose of the study was to explore whether the suggested relation between childhood traumatization and conversion symptoms is mediated by hypnotic susceptibility, as is predicted by autohypnosis theory of conversion disorder.

Method

Patients

A total of 58 patients diagnosed with conversion disorder were studied between 1997 and 2000. The patients had been referred for either in- or outpatient treatment to a general psychiatric hospital specializing in the treatment of conversion disorders. A psychiatrist performed the psychiatric screening using DSM-IV criteria. A trained psychologist checked for other axis I diagnoses using the Structured Clinical Interview for DSM-IV Axis I Disorders (18) and the Structured Clinical Interview for DSM-IV Dissociative Disorders (19). Axis II disorders were assessed by using the Structured Clinical Interview for DSM-IV Axis II Personality Disorders (20). A neurologist was responsible for the somatic screening, which was performed on all patients. When necessary, additional diagnostic techniques, such as serial computed tomography brain scans or magnetic resonance imaging, were applied. Whenever the somatic screening revealed any deviations, the patients were not diagnosed as suffering from conversion disorder and were excluded from the study.

Of the 58 patients with conversion disorder who were originally approached for participation in the present study, one patient was excluded because of illness, and three dropped out because of logistical reasons. A total of 45 women and nine men with conversion disorder were studied; their mean age was 37.6 years (SD= 11.9). The incidence of motor conversion symptoms across patients was as follows: paralyses or pareses (N=38), coordination disorders (N=26), tremors (N=17), contractures (N=12), bizarre movements (N=12), speech disorders (aphonia and dysphonia) (N=13), and eye muscle disorder (N=5). Regarding sensory symptoms, 19 of the patients had pain, 10 had disturbed feelings, and nine had a visual disorder. Pseudoepileptic seizures were observed in 17 patients. Note that the patients could have been exhibiting more than one symptom. Of the 54 patients, 28 patients exhibited only motor symptoms, four had only pseudoepileptic seizures, three had merely sensory symptoms, and 19 had mixed symptoms. The mean period of sustained conversion complaints was 61 months (SD=85).

As far as DSM-IV axis I comorbidity was concerned, of the 54 patients with conversion disorder, 17 patients showed no other axis I disorders (SCID for Axis I Disorders, SCID for Dissociative Disorders). In the remaining 37 patients, the following axis I disorders were observed: mood disorder (N=21), panic disorder or agoraphobia (N=16), dissociative disorder (N=14), posttraumatic stress disorder (N=13), social or specific phobia (N=10), generalized anxiety disorder (N=2), bulimia nervosa (N=1), and obsessive-compulsive disorder (N=1). Regarding axis II diagnoses (SCID for Axis II Personality Disorders), 31 patients did not suffer from any personality disorder. In the remaining 23 patients, we observed the following types of personality disorder: avoidant (N=9), obsessive-compulsive (N=7), borderline (N=3), paranoid (N=3), antisocial (N=1), and dependent (N=1).

The comparison group consisted of 50 patients with one or more affective disorders. They had also applied for in- or outpatient treatment either at our hospital or at an outpatient clinic specializing in the treatment of anxiety disorders. A psychiatrist made the diagnosis during intake. For this purpose, the Münich Diagnostic Checklists for DSM-III-R and ICD-10 (21) for mood and anxiety disorders were translated and adapted to DSM-IV. These patients were matched to the group of patients with conversion disorder on age and gender. A total of 41 women and nine men were included in the comparison group; their mean age was 36.4 years (SD=11.1). Twenty-five patients were diagnosed as suffering from major depression, three of whom were also afflicted by panic disorder, two by dysthymic disorder, one by social phobia, and one by an eating disorder. Seven patients were exclusively affected by panic disorder, six had social phobia, four had generalized anxiety disorder, four had dysthymic disorder, and three had an adjustment disorder with mixed depression and anxiety. One patient had both social phobia and panic disorder. All of the patients gave their written informed consent before participation.

Materials

Childhood traumatization. The Structured Trauma Interview (22) addresses childhood experiences shown to be risk factors for adult psychopathology and includes items regarding parental dysfunction, parental physical abuse, and sexual abuse before age 16 (15). The expression "parental" refers to biological parents, stepparents, and adoptive parents.

"Parental dysfunction" is a conceptualization of emotional neglect, referring to the unavailability of parents due to recurrent illness, nervousness, depression, alcohol misuse, or use of sedatives. Draijer and Langeland (15) validated this measure of parental dysfunction earlier by relating it to the lack of parental affection, as measured by the Parental Bonding Instrument (15), and found it to be a good indicator of neglect, with the advantage that it refers to factual, observable behavior of parents rather than to more subjective indications of their unreliability or lack of affection. The patients in the present study were asked the following questions with regard to their father and mother, respectively: "Was he/she often ill? Was he/she nervous, tense? Was he/she de-

pressed? Did he/she use alcohol? Did he/she use sedatives, as far as you know?" Answers were coded in a yes/no format (unclear answers were coded no). A score on the dichotomous outcome variables "maternal dysfunction" or "paternal dysfunction" was based on the presence of a positive answer to one or more of these questions.

"Physical abuse" was defined as severe parental aggression, including recurrent and chronic forms of physical violence frequently resulting in injuries, such as repeatedly being kicked or hit with a fist or an object (e.g., a stick or a belt), being tied up, or being thrown down the stairs. Questions asked to investigate whether the patients met the criteria for physical abuse were, "Sometimes parents hit their children as a disciplinary measure or because they lose their temper. If your parents wanted to punish you, what did they do? How often do you remember that your parents hit you? If you try to remember the occasions they hit you, which made the biggest impression on you?" For each patient, it was assessed whether the criteria for physical abuse were met, resulting in a dichotomous variable of "physical abuse." The interview also provided relevant information on the duration of the physical abuse and the number of different types of physical abuse, resulting in two additional continuous variables.

"Sexual abuse" was defined as any pressure to engage in or any forced sexual contact before age 16, originally ranging from fondling to penetration (15). In the present study, "fondling only" was not taken into account because it lacks a clear definition and its relation to adult psychopathology lacks evidence. To assess whether participants met the criteria for sexual abuse, the following questions were asked: "Nowadays, it is clear that many women, but men as well, have had negative sexual experiences in their childhood. Do you know if something like this has happened to you?" If the answer was positive, the interviewer inquired about perpetrators, sexual activities, force or pressure, frequency, age at onset, and how upsetting these experiences were at the time. If a patient was sexually abused by more than one perpetrator at different times, he or she was asked to choose the most important incident for more detailed discussion. For each patient, it was assessed whether the criteria for sexual abuse were met, resulting in the dichotomous variable of "sexual abuse." The interview also provided relevant information about the duration of the sexual abuse, the perpetrator(s) (intra- or extrafamiliar), and whether penetration took place or not, resulting in one additional continuous and two dichotomous variables, respectively.

Cognitive and somatoform dissociative symptoms. Self-reports of cognitive dissociative experiences were assessed by using the Dutch version (23) of the Dissociative Experiences Scale (24). The Dissociative Experiences Scale is a 28-item self-report scale that requires the individual to indicate on a scale ranging from 0 to 100 to what extent presented statements of dissociative experiences apply to them. The statements include experiences such as having done something without knowing when and how or finding oneself at a place without being able to recollect how one got there. Total scores are calculated by averaging the scores of the 28 items. This widely used screening instrument for dissociative symptoms in clinical samples has been found to have good reliability and clinical validity (23, 25).

Self-reports of somatoform dissociative phenomena were measured by using the 20-item Somatoform Dissociation Questionnaire (26). Five-point scales are used to indicate to what degree presented statements apply. Statements include, "It sometimes happens that I feel pain while urinating"; "It sometimes happens to me that I grow stiff for a while." The total score ranges from 20 to 100. The reliability of the scale is high and the construct validity is good (26).

Furthermore, in the group with conversion disorder, the number of pseudoneurological symptoms, with a maximum of 13, was assessed by the SCID for Axis I Disorders (18). Items are impaired

coordination or balance, paralysis or localized weakness, difficulty swallowing, aphonia, urinary retention, loss of touch or pain sensation, double vision, hallucinations, blindness, deafness, seizures, amnesia, and loss of consciousness (not fainting).

Hypnotic susceptibility. All the comparison patients and 50 of the 54 patients with conversion disorder were also tested for hypnotic susceptibility by means of the Dutch version of the Stanford Hypnotic Susceptibility Scale Form C (27). This 12-item test measures participants' responses to hypnotic suggestions for changes in memory, perception, and ideomotor function, with a total score ranging from 0 to 12. The exact description of the instrument, the procedure of administration, and the precise results have been reported elsewhere (10). For the purpose of this study, it is sufficient to report the mean scores of the patients with conversion disorder (mean=5.6, SD=3.1) and the comparison patients (mean=3.9, SD=2.6). These scores differed significantly (F= 9.1, df=1, 99, p<0.01).

General level of psychopathology. The general level of psychopathology was assessed by means of the Dutch version (28) of the SCL-90 (29).

Procedure

After intake, one of two trained psychologists administered the SCID for Axis I Disorders, the SCID for Axis II Disorders, and the SCID for Dissociative Disorders. Subsequently, a test psychologist administered the SCL-90, the Dissociative Experiences Scale, and the Somatoform Dissociation Questionnaire as part of a standard intake test protocol. Next, one of four trained psychologists, none of whom were involved in the initial assessment and all of whom were unaware of the clinical status of the patients, administered the Structured Trauma Interview, with sessions recorded on videotape. Unless patients expressed the wish to share the information with their own counselors, the data were kept confidential.

Results

Nonspecific Variables

Groups did not differ with respect to sex (χ^2=0.03, df=1, p=0.86), age (t=0.50, df=102, p=0.62), or level of education (t=1.83, df=102, p=0.07). The general level of psychopathology, as measured by the total score on the SCL-90, was also equally high for the patients with conversion disorder (mean=201, SD=67) and the patients with an affective disorder (mean=204, SD=60) (t=0.26, df=102, p=0.80).

Childhood Abuse

The presence and key features of parental dysfunction and physical and sexual abuse measured for both groups by the Structured Trauma Interview (15) are presented in Table 1. Group differences were tested by using a logistic regression analysis with the predictors entered all at once. An overall model showed the variables of childhood abuse jointly to significantly (χ^2=21.32, df=9, p<0.01) predict the type of disorder (66.7% correct). The predictors that significantly contributed to this effect showed that the patients with conversion disorder reported a larger number of different types of physical abuse, longer durations of sexual abuse, and a higher incidence of incest than the comparison patients. Because the presence of physical and/or sexual abuse has previously been shown to be a relevant factor for dissociative psychopathology as well (15), an ad-

TABLE 1. Logistic Regression Analysis of Aspects of Childhood Abuse in Patients With Conversion Disorder and Patients With Affective Disorders

Aspects of Childhood Trauma[a]	Patients With Conversion Disorder (N=54)		Patients With Affective Disorders (N=50)		Beta	SE	Wald χ^2 (df=1)	p
	N	%	N	%				
Total model								0.01
Maternal dysfunction[b]	34	63	29	58	0.0	0.2	0.02	0.88
Paternal dysfunction[b]	27	50	24	48	0.2	0.3	0.64	0.42
Physical abuse[b]	15	28	10	20	1.3	1.2	1.16	0.28
Sexual abuse[b]	13	24	7	14	0.3	1.7	0.03	0.85
Penetration (rape)	11	20	6	12	0.0	0.8	0.00	0.98
Intrafamilial (incest)	12	22	7	14	3.1	1.4	5.05	0.02
	Mean	SD	Mean	SD				
Duration of physical abuse (years)	4.1	2.5	3.8	1.9	0.1	0.1	1.23	0.27
Number of types of physical abuse	2.9	1.9	2.1	1.2	0.7	0.3	6.35	0.01
Duration of sexual abuse (years)	2.9	1.2	0.6	0.2	1.1	0.5	4.97	0.03

[a] Measured by the Structured Trauma Interview (22).
[b] Dichotomous variable (presence versus absence).

ditional analysis was conducted for the variable for physical/sexual abuse. A total of 24 (44%) of the patients with conversion disorder and 12 (24%) of the comparison patients scored positively on the variable for physical/sexual abuse, which appeared to significantly predict the type of disorder (58.7% correct) (χ^2=3.89, df=1, p<0.05). These findings indicate that the patients with conversion disorder reported more severe forms and a higher incidence of physical/sexual abuse than the comparison patients.

Childhood Abuse and Symptom Severity

The mean scores on the Dissociative Experiences Scale and the Somatoform Dissociation Questionnaire and the mean number of pseudoneurological symptoms for the 54 patients with conversion disorder are presented in Table 2. The relation between the presence of each type of childhood abuse and the symptom severity in the patients with conversion disorder was investigated by using a four-factorial multivariate analysis of variance (MANOVA) for the main effects of the factors for maternal dysfunction, paternal dysfunction, physical abuse, and sexual abuse on the dependent variables for scores on the Dissociative Experiences Scale and the Somatoform Dissociation Questionnaire and the number of pseudoneurological symptoms. There were significant multivariate effects for the factors for maternal dysfunction (F=3.7, df=3, 47, p<0.05) and physical abuse (F=5.0, df=3, 47, p<0.01). No such effects were found for paternal dysfunction (F=0.5, df=3, 47, p= 0.67) and sexual abuse (F=0.5, df=3, 47, p=0.69). Post hoc univariate F tests showed scores on the Somatoform Dissociation Questionnaire (F=5.9, df=1, 49, p<0.05) and the Dissociative Experiences Scale (F=5.5, df=1, 49, p<0.05) to significantly contribute to the multivariate effect for maternal dysfunction. There were no such effects for the number of pseudoneurological symptoms (F=1.3, df=1, 49, p=0.26). Furthermore, the number of pseudoneurological symptoms (F=14.5, df=1, 49, p<0.0001) contributed significantly to the multivariate effect of physical abuse. No such effects were found for scores on the Dissociative

Experiences Scale (F=0.4, df=1, 49, p=0.53) and the Somatoform Dissociation Questionnaire (F=3.2, df=1, 49, p= 0.07). These findings show maternal dysfunction and physical abuse to be associated with a relative increase in dissociative symptoms.

Of the 54 patients with conversion disorder, eight patients reported no traumatization, 21 reported one type of traumatization (either parental dysfunction or physical/sexual abuse), and 25 reported multiple traumatization. A one-way MANOVA for the dependent variables for scores on the Dissociative Experiences Scale and the Somatoform Dissociation Questionnaire and the number of pseudoneurological symptoms, with multiple trauma as a factor, showed that the patients with conversion disorder who reported multiple traumatization had more severe symptoms than the patients with conversion disorder who reported one type of traumatization (F=3.0, df=3, 45, p<0.05) (Table 2). Post hoc F tests showed that both score on the Somatoform Dissociation Questionnaire (F=5.7, df=1, 47, p<0.05) and number of pseudoneurological symptoms (F= 5.5, df=1, 47, p<0.05) significantly contributed to this effect. There were no such effects for score on the Dissociative Experiences Scale (F=0.4, df=1, 47, p=0.60).

To test whether hypnotic susceptibility mediates the effect of maternal dysfunction and physical abuse on symptom severity in conversion disorder, first, the relation between each of these two variables and score on the Stanford Hypnotic Susceptibility Scale Form C (dependent variable) was assessed in two separate analyses of variance. Only the presence of physical abuse was associated with a significantly greater score on the Stanford Hypnotic Susceptibility Scale Form C (6.8 versus 4.2) (F= 4.1, df=1, 48, p<0.05) and was therefore a candidate to have been mediated by hypnotic susceptibility in its relation to symptom severity (number of pseudoneurological symptoms). To investigate whether hypnotic susceptibility indeed mediates this relation, an analysis of covariance for the number of pseudoneurological symptoms with physical abuse as a factor and score on the Stanford Hyp-

TABLE 2. Measures of Dissociative Symptoms for 54 Patients With Conversion Disorder, With and Without a History of Childhood Abuse

Aspect of Childhood Trauma[a]	Score[b]					
	Dissociative Experiences Scale		Somatoform Dissociation Questionnaire		Number of Pseudoneurological Symptoms[b]	
	Mean	SD	Mean	SD	Mean	SD
Maternal dysfunction[c]						
Yes (N=34)	14.5_1	13.9	32.7_2	8.7	5.3	2.4
No (N=20)	7.6_1	7.1	27.3_2	6.2	4.4	2.2
Paternal dysfunction						
Yes (N=27)	11.4	10.5	30.4	6.9	5.3	2.3
No (N=27)	12.5	11.4	30.9	9.5	4.6	2.4
Physical abuse[d]						
Yes (N=15)	13.8	9.4	34.1	8.3	6.8_3	2.0
No (N=39)	11.2	11.4	29.4	7.9	4.2_3	2.1
Sexual abuse						
Yes (N=13)	12.3	7.7	31.2	7.5	5.5	2.3
No (N=41)	11.8	11.8	30.6	8.5	4.7	2.4
Multiple trauma[c]						
Yes (N=21)	13.6	8.7	34.6_4	7.9	6.1_5	2.2
No (N=25)	11.9	13.1	28.8_4	7.8	4.3_5	2.4

[a] Measured by the Structured Trauma Interview (22).
[b] Numbers with same subscript differed significantly in post hoc one-way analysis of variance.
[c] Significant multivariate effect for scores on the Dissociative Experiences Scale and the Somatoform Dissociation Questionnaire and for the number of pseudoneurological symptoms ($p<0.05$).
[d] Significant multivariate effect for scores on the Dissociative Experiences Scale and the Somatoform Dissociation Questionnaire and for the number of pseudoneurological symptoms ($p<0.01$).

notic Susceptibility Scale Form C as a covariate was conducted. The results showed hypnotic susceptibility to be a significant covariate ($F=6.4$, df=1, 48, $p<0.05$). The fact that the main effect for physical abuse remained significant ($F=12.3$, df=1, 48, $p<0.01$) indicates that the mediation is not full but partial (30).

Discussion

The aim of the present study was threefold. First, in order to find out whether childhood abuse is a typical feature of conversion disorder, we compared patients with conversion disorder to patients with an affective disorder with respect to relevant features of childhood abuse. The patients with conversion disorder reported a higher incidence of physical/sexual abuse than the patients with affective disorder. Furthermore, the patients with conversion disorder scored higher overall on relevant features of childhood abuse. More specifically, the patients with conversion disorder mentioned a larger number of different types of physical abuse, longer-lasting incidents of sexual abuse, and incestuous experiences more often. These findings indicate that conversion disorder is associated with a higher incidence and more severe forms of physical/sexual abuse than affective disorders in comparison patients with an equal level of general psychopathology.

The second purpose of the study was to find out whether the presence of parental dysfunction, childhood physical abuse, and childhood sexual abuse was related to the severity of cognitive and somatoform dissociative symptoms in patients with conversion disorder. The results show that the presence of maternal dysfunction is indeed associated with more self-reports of cognitive (Dissociative Experiences Scale) and somatoform (Somatoform Dissociation Questionnaire) dissociative experiences. Physical abuse was associated with a larger amount of pseudoneurological symptoms, as assessed by the SCID for Axis I Disorders. There were no such effects for sexual abuse or paternal dysfunction. Furthermore, patients with conversion disorder who reported multiple types of childhood traumatization scored significantly higher on the Somatoform Dissociation Questionnaire and had more types of pseudoneurological symptoms than the patients with conversion disorder who reported a single type of traumatization (parental dysfunction, physical abuse, or sexual abuse). The evidence for a relationship between childhood traumatization and symptom severity found in the present study is in agreement with previous findings of greater trauma reports of patients with pseudoepileptic seizures, a subtype of conversion disorder (11–14).

The third objective of the present study was to test Janet's autohypnosis theory of conversion disorder, which proposed that, in reaction to childhood trauma, a form of autohypnosis would result in somatoform dissociative symptoms. Autohypnosis involves a capacity to self-evoke dissociative experiences comparable to dissociations evoked under induced hypnosis. This capacity for autohypnosis, assessed by means of the Stanford Hypnotic Susceptibility Scale Form C, indeed appears to mediate the relation between physical abuse and conversion symptoms. However, this mediation was only partial, and the relation between maternal dysfunction and symptom severity was not mediated by hypnotic susceptibility at all. Future research should, therefore, try to establish the extent to which other factors, such as coping style and adult traumatization, also act as mediators.

The present study was the first to our knowledge to systematically investigate the presence and the scope of childhood traumatization in patients with conversion disorder. However, it has the methodological shortcoming of being a retrospective study. As a result, memory bias could be present, both in the form of underreporting of trauma due to dissociative amnesia and in the form of overreporting. Because of the need for confidentiality, the trauma reports were not cross-checked with relatives or police reports. Consequently, the validity of the abuse reports cannot be ensured. Despite this drawback, underreporting due to dissociative amnesia is rather unlikely because the group of patients with conversion disorder was neither featured by more cognitive dissociative experiences, as assessed by the Dissociative Experiences Scale (see reference 10), nor by dissociative amnesia, as assessed by the

SCID for Dissociative Disorders. To minimize the risk of overreporting, we used a structured trauma interview. The interviewers were carefully trained to strictly adhere to the prescribed interview guidelines and to continue questioning until they received a concrete answer. They did not report any suspicion about the reliability of the patients' memories. Moreover, the study involved a controlled investigation in which the interviewers were blind to the clinical status of the patients. We believe that with these precautions, the reliability and validity of the study have been maximally safeguarded.

In conclusion, the patients with conversion disorder reported a higher incidence and more severe forms of childhood physical/sexual abuse than the patients with affective disorders, and the presence of physical abuse and maternal dysfunction was related to the symptom severity. It should be noted, however, that 15% (N=8) of the patients with conversion disorder did not report a single type of childhood abuse. This suggests that childhood traumatization is a distinctive and predictive—albeit not a necessary—feature of conversion disorder. Different perspectives on the nature and causes of conversion disorder need, therefore, to be considered; we recommend future research to examine the role of other psychological and physical stressors.

References

1. Janet P: The Major Symptoms of Hysteria. New York, Macmillan, 1907

2. Putnam FW: Pierre Janet and modern views of dissociation. J Trauma Stress 1989; 2:413–429

3. Bliss EL: Hysteria and hypnosis. J Nerv Ment Dis 1984; 172:203–206

4. Hilgard ER: Divided Consciousness: Multiple Controls in Human Thought and Action. New York, John Wiley & Sons, 1977

5. Kihlstrom JF: Dissociative and conversion disorders, in Cognitive Science and Clinical Disorders. Edited by Stein DJ, Young JE. San Diego, Calif, Academic Press, 1992, pp 247–270

6. Nemiah JC: Dissociation, conversion, and somatization, in American Psychiatric Press Review of Psychiatry, vol 10. Edited by Tasman A, Goldfinger SM. Washington, DC, American Psychiatric Press, 1991, pp 248–260

7. Oakley DA: Hypnosis and conversion hysteria: a unifying model. Cognitive Neuropsychiatry 1999; 4:243–265

8. Putnam FW, Carlson EB: Hypnosis, dissociation, and trauma: myths, metaphors, and mechanisms, in Trauma, Memory, and Dissociation. Edited by Bremner JD, Marmar CR. Washington, DC, American Psychiatric Press, 1998, pp 27–55

9. Kuyk J, Spinhoven P, van Dyck R: Hypnotic recall: a positive criterion in the differential diagnosis between epileptic and pseudoepileptic seizures. Epilepsia 1999; 40:485–491

10. Roelofs K, Hoogduin KAL, Keijsers GPJ, Näring GWB, Moene FC, Sandijck P: Hypnotic susceptibility in patients with conversion disorder. J Abnorm Psychol 2002; 111:390–395

11. Alper K, Devinsky O, Perrine K, Vazques B, Luciano D: Nonepileptic seizures and childhood sexual and physical abuse. Neurology 1993; 43:1950–1953

12. Betts T, Boden S: Diagnosis, management and prognosis of a group of 128 patients with non-epileptic attack disorder, part II: previous childhood sexual abuse in the etiology of these disorders. Seizure 1992; 1:27–32

13. Bowman ES, Markand ON: Psychodynamics and psychiatric diagnoses of pseudoseizure subjects. Am J Psychiatry 1996; 153:57–63

14. Kuyk J, Spinhoven P, Emde Boas W, van Dyck R: Dissociation in temporal lobe epilepsy and pseudoepileptic seizure patients. J Nerv Ment Dis 1999; 187:713–720

15. Draijer N, Langeland W: Childhood trauma and perceived parental dysfunction in the etiology of dissociative symptoms in psychiatric inpatients. Am J Psychiatry 1999; 156:379–385

16. Nash MR, Hulsey TL, Sexton MC, Harralson TL, Lambert W: Long-term sequelae of childhood sexual abuse: perceived family environment, psychopathology, and dissociation. J Consult Clin Psychol 1993; 61:276–283

17. Mulder RT, Beautrais AL, Joyce PR, Fergusson DM: Relationship between dissociation, childhood sexual abuse, childhood physical abuse, and mental illness in a general population sample. Am J Psychiatry 1998; 155:806–811

18. First MB, Spitzer RL, Gibbon M, Williams JB: Structured Clinical Interview for DSM-IV Axis I Disorders, version 2.0. New York, New York State Psychiatric Institute, Biometrics Research, 1996

19. Steinberg M: Structured Clinical Interview for DSM-IV Dissociative Disorders (SCID-D), Revised. Washington, DC, American Psychiatric Press, 1994

20. First MB, Spitzer RL, Gibbon M, Williams JBW, Benjamin L: Structured Clinical Interview for DSM-IV Axis II Personality Disorders (SCID-II), version 2.0. New York, New York State Psychiatric Institute, Biometrics Research, 1996

21. Hiller W, Zaudig M, Mombour W: Münich Diagnostic Checklists for DSM-II-R and ICD-10. Munich, Logomed, 1990

22. Draijer N: Structured Trauma Interview. Amsterdam, Vrije Universiteit, Department of Psychiatry, 1989

23. Ensink BJ, van Otterloo D: A validation study of the DES in the Netherlands. Dissociation 1989; 2:221–223

24. Bernstein EM, Putnam FW: Development, reliability, and validity of a dissociation scale. J Nerv Ment Dis 1986; 174:727–735

25. Frischholz EJ, Braun BG, Sachs GR, Hopkins L, Shaeffer DM, Lewis J, Leavitt F, Pasquotto JN, Schwartz DR: The Dissociative Experiences Scale: further replication and validation. Dissociation 1990; 3:151–153

26. Nijenhuis E, Spinhoven P, van Dyck R, van der Hart O, Vanderlinden J: The development and psychometric characteristics of the Somatoform Dissociation Questionnaire (SDQ-20). J Nerv Ment Dis 1996; 184:688–694

27. Weitzenhoffer AM, Hilgard ER: Stanford Hypnotic Susceptibility Scale Form C. Palo Alto, Calif, Consulting Psychology Press, 1962

28. Arrindell WA, Ettema JHM: SCL-90: Dutch Translation and Adaptation. Lisse, the Netherlands, Swets & Zeitlinger, 1986

29. Derogatis LR: SCL-90-R: Administration, Scoring, and Procedures Manual, II. Towson, Md, Clinical Psychometric Research, 1983

30. Kenny DA, Kashy DA, Bolger N: Data analysis in social psychology, in The Handbook of Social Psychology, 4th ed, vol 1. Edited by Gilbert DT, Fiske ST, Lindzey G. New York, McGraw-Hill, 1998, pp 233–265