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The Development and Psychometric Characteristics of the Somatoform Dissociation Questionnaire (SDQ-20)

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According to 19th century French psychiatry and contemporary clinical observations, dissociation pertains to both psychological and somatoform components of experience, reactions, and functions. Because such an instrument was lacking, we aimed to develop a self-reporting questionnaire measuring what we propose to call somatoform dissociation. Patients with dissociative disorder and with other DSM-IV psychiatric diagnoses completed a list of 75 items that, according to clinical experience and expert judgment, could reflect instances of somatoform dissociation. Separate logistic analyses and determination of discriminant indices per item revealed 20 items that best discriminated between those with and without dissociative disorders. Mokken analysis showed that these items are strongly scalable on a dimensional latent scale interpreted to measure somatoform dissociation. Reliability of the scale was high. Construct validity was supported by high intercorrelations with the Dissociation Questionnaire, which measures psychological dissociation, and higher scores of patients with dissociative identity disorder compared with patients with dissociative disorders not otherwise specified. In conclusion, the Somatoform Dissociation Questionnaire (SDQ-20) is a scale of good psychometric quality, which measures somatoform dissociation. The symptoms pertain to negative and positive dissociative phenomena, which were well known in 19th century French psychiatry as the mental stigmata and mental accidents of hysteria.

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Dissociative disorder patients, as a rule, have many somatic symptoms (Ross et al., 1989a; Saxe et al., 1994), and somatization disorder is a frequent and serious comorbid disorder among them (Saxe et al., 1994). According to 19th century (Janet, 1893, 1907/1965) and contemporary clinical observations (Kihlstrom, 1992, 1994; Nemiah, 1991; Nijenhuis, 1990; Van der Hart and Op den Velde, 1991), these somatic symptoms may reflect somatoform dissociative phenomena. Research that systematically evaluates their presence in dissociative and other psychiatric patients is, however, lacking.

Janet's dissociation theory (1889/1973, 1893, 1901/1977, 1907/1965; *cf.* Van der Hart and Friedman, 1989) postulates that parallel to a retraction of the field of consciousness, both somatoform and psychological components of experience, reactions, and functions may be stored in memory and identity structures that are not integrated in the personality at large. Janet argued that dissociative disorders, at the time subsumed under the label "hysteria," are predominantly characterized by the presence of "mental stigmata" and "mental accidents," which pertain to both psychological and somatoform dissociative phenomena. He considered the mental stigmata as symptoms that are essential of hysteria (Janet, 1893). These permanent symptoms all involve losses of perceptions and of control over functions and, thus, seem to reflect negative dissociative symptoms, as we propose to call them. They include several kinds of anesthesia (loss of proprioceptual, visual, auditive, gustatory, and olfactory perception), amnesia (loss of the capacity to retrieve stored knowledge), loss of control over motor responses, abulia (loss of will-power), and state-dependent restriction of the range of emotional experiences and expressions.

According to Janet (1901/1977, 1907/1965), the mental accidents as generic phenomena are evenly characteristic of hysteria, but they are transient, or at most, periodical, and their specific expressions vary. Mental accidents intermittently intrude or even interrupt the apparently normal state of consciousness, memory, and identity and, thus, may be said to reflect positive dissociative symptoms, as we propose to call them. They pertain to reactivations of fixed ideas, somnambulistic states, and deliriums. Janet stated (1901/1977, 1907/1965) that

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fixed ideas, as a rule, constitute state-dependent traumatic or trauma-associated responses, which upon their reactivation may intrude into normal consciousness (partial dissociation). They may involve somatoform reactions: for example, localized pain, a particular movement, some smell, or taste. In a somnambulistic state, a dissociated part of the personality has taken full control over behavior and consciousness; somnambulism, thus, refers to a full dissociative state switch (Putnam, 1988). In contrast to fixed ideas, these dissociative states are more intellectually developed and adaptive to their surroundings. They tend to encompass a complex system of fixed ideas, including various somatoform responses, which, apart from taking full control, may also intrude into and, thus, influence other dissociated states and the normal state. In a delirium, or hysterical psychosis, or reactive dissociative psychosis, as Van der Hart et al. (1993) state, perception, consciousness and behavior are fully controlled for an extended period of time by a dissociated state that is completely dominated by one or more fixed ideas and has almost lost all sense of reality. For example, in a reactive dissociative psychotic state, which lasted for approximately 2 weeks, a patient was completely dominated by the idea of being an assaulted little girl and was only able to walk the way her handicapped and sexually abusive grandfather had. In this state, she was fully unable to adapt her conduct to the actual environment (Nijenhuis, 1995b). Janet, thus, maintained that dissociation, which he regarded as a mental characteristic, affects both mind and body.

Most items of self-reporting questionnaires that measure psychological dissociative phenomena (Dissociative Experiences Scale [DES], Bernstein and Putnam, 1986; Dissociation Questionnaire [DIS-Q], Vanderlinden et al., 1993) and structured clinical interviews for DSM-IV dissociative disorders (Dissociative Disorders Interview Schedule [DDIS], Ross et al., 1989b; Structured Clinical Interview for DSM-IV Dissociative Disorders [SCID-D], Steinberg et al., 1990, 1993) indeed refer to negative and positive symptoms. For example, the factor structure of the DIS-Q (Vanderlinden et al., 1993) consists of four factors that were interpreted as loss of control, amnesia (most items of both subscales pertain to losses, *e.g.*, inaccessibility of autobiographical information), identity confusion and fragmentation (most items refer to intrusion phenomena, *e.g.*, the idea of being influenced by someone else inside), and absorption (some items refer to intrusion phenomena, *e.g.*, reliving former experiences). We are not aware of instruments that measure somatoform dissociation.

If psychological and somatoform dissociative symptoms predominantly characterize dissociative disorders, both mental stigmata (negative dissociative symptoms) and mental accidents (positive dissociative symptoms) should be as highly prevalent in contemporary cases as they were in 19th century patients. Also, these symptoms should be far less common in patients with other psychiatric disorders. Further, if psychological and somatoform dissociative symptoms stem from a common mental process but represent phenomenologically different aspects of that process, they should be highly related but not identical phenomena.

This study was performed to construct a somatoform dissociation questionnaire. The dimensional structure and reliability of the somatoform dissociative items that best discriminate between dissociative disorder patients and controls were assessed. A further aim was to establish the construct validity of the somatoform dissociation questionnaire: convergent validity was studied by analyzing the association between somatoform dissociation questionnaire scores and scores on a scale of psychological dissociation (DIS-Q), whereas criterion-related validity was studied by comparing somatoform dissociation questionnaire scores of dissociative identity disorder (DID) patients versus cases of dissociative disorder not otherwise specified (DDNOS) or depersonalization disorder (DP). Because DID is a more complex dissociative disorder than DDNOS and DP, the somatoform dissociation questionnaire scores of DID patients should exceed those of patients with DDNOS or DP.

Methods

Instrument Development

A pool of 77 items was formulated based on clinically observed manifestations of somatoform dissociation, defined as dissociative state-dependent somatoform responses that in clinical settings had appeared upon reactivation of particular dissociative states and that could not be medically explained. The items, which pertained to negative and positive phenomena, were supplied with a Likert-type 5-point scale. To evaluate face validity, the items were submitted to six clinicians experienced in dealing with dissociative disorders. An item was included if four of the six experts judged that it possibly reflected a somatoform dissociative symptom. As a result, two items were removed.

Subjects and Procedure

Psychiatric outpatients suspected to suffer from a dissociative disorder were interviewed by experi-

enced clinicians using the SCID-D (Steinberg et al., 1993). All were trained in the administration and interpretation of the instrument. Fifty patients who presented with a dissociative disorder were selected (21 with DDNOS, 27 with DID, and 2 with DP). The mean age of this group (44 women, 6 men) was 34.8 ± 9.7 years (range, 20 to 57 years).

The comparison group consisted of 50 psychiatric outpatients with a nondissociative DSM-IV diagnosis (American Psychiatric Association, 1994) who scored <2.5 on the DIS-Q (Vanderlinden, 1993; Vanderlinden et al., 1993). Diagnoses included axis I anxiety disorders (social and specific phobia, panic disorder with and without agoraphobia, obsessive-compulsive disorder, and posttraumatic stress disorder; $N = 29$), depressive disorder ($N = 5$), eating disorders ($N = 8$), hypochondriasis ($N = 1$), body dysmorphic disorder ($N = 1$), conversion disorder ($N = 1$), adjustment disorder ($N = 5$), and alcohol abuse ($N = 3$). Some patients presented with other conditions described in DSM-IV that warranted clinical attention: bereavement ($N = 2$), problems of relationship ($N = 2$), and phase of life problems ($N = 1$). Axis II diagnoses included borderline personality disorder ($N = 2$), narcissistic personality disorder ($N = 1$), dependent personality disorder ($N = 2$), and personality disorder not otherwise specified ($N = 1$). Some patients ($N = 26$) displayed traits of personality disorder, predominantly dependent personality disorder. The mean age of the comparison group (39 women, 11 men) was 34.7 ± 12.7 years (range, 16 to 79 years).

Informed consent was obtained from all subjects involved in the study.

Instruments

The SCID-D (Steinberg et al., 1993) is a diagnostic instrument developed for the assessment of dissociative disorders. It covers five dissociative symptom areas (amnesia, depersonalization, derealization, identity confusion, and identity fragmentation). Severity ratings of the symptom areas range from 1 to 4 (absent to severe). The total score ranges from 5 to 20. Good to excellent reliability and validity have been reported both in the United States and in The Netherlands (Boon and Draijer, 1993; Steinberg et al, 1990; Steinberg et al., 1993).

The DIS-Q (Vanderlinden, 1993; Vanderlinden et al., 1993) is a 63-item self-reporting questionnaire that measures psychological dissociation. The scale consists of four empirically derived factors labeled identity confusion and fragmentation, loss of control, amnesia, and absorption. The DIS-Q reliability rates are good to excellent, scores are stable over time, and the DIS-Q differentiates among patients with dissociative disorders, normal subjects, and psychiatric subjects with other diagnoses (Vanderlinden, 1993). The DIS-Q highly correlates with another self-reporting dissociation questionnaire, the DES (Bernstein and Putnam, 1986). Scores range from 1.0 to 5.0. The mean score of DID patients is 3.5 ± .4 and of DDNOS patients is 2.9 ± .6. A cut-off score of 2.5 has been advised for the purpose of selecting patients with a dissociative disorder (Vanderlinden, 1993).

Data Analysis

The 75 symptoms of the original item pool were entered in separate logistic regression analyses (p to enter <.05) to evaluate their ability to discriminate between dissociative disorders (DD) and comparison patients. Next, the predicted probabilities of caseness were compared with observed outcomes, and the ratio between predicted caseness (PC) in both groups was calculated as a discriminant index (DI) using the formula:

$$DI = \frac{PC/N_{DD}}{PC/N_{Comp}}$$

Symptoms with a discriminant index of ≥4.0 were selected for further analysis. Items that were gender-specific ($N = 8$) or related to particular characteristics that did not apply to all subjects (wearing of visual correctives, use of medication and alcohol; $N = 6$) were excluded a priori. A nonparametric Mokken scale analysis for polytomous items was used to evaluate scalability on a unidimensional latent scale (Loevinger's general scalability coefficient H and the scalability coefficient for individual items $H_g \geq 0.40$ and $p < .05$). The model assumptions of monotone homogeneity and double monotonicity of the scalable items were evaluated, and the reliability of the resulting Somatoform Dissociation Questionnaire (SDQ-20) scale was assessed.

The association of SDQ-20 scores with biographical variables was assessed with t-tests for independent samples (gender) and Pearson product-moment correlation coefficients (age) for dissociative disorder and comparison patients separately. Pearson correlation coefficients were also used to evaluate the interrelatedness of SDQ-20 scores with total and subscale scores on the DIS-Q. Considering the absence of a normal distribution, as indicated by the sizable differences of standard deviations, differences on the SDQ-20 between SCID-D dissociative disorder cases and comparison patients as well as patients with DID versus DDNOS or DP were analyzed with the Mann-Whitney U-test for independent samples.

Statistical analyses were performed with SPSS-PC 6.0 (SPSS INC., 1993) and Mokken Scale analysis for polytomous items 3.0 (Molenaar et al., 1994).

TABLE 1
Somatoform Dissociative Symptoms of Dissociative Disorder Patients and Comparison Patients with Discriminant Indices ≥ 4.0

Symptom	Dissociative disorder patients (N = 50) M[a]	SD	Comparison patients (N = 50) M[a]	SD	Discriminant indices
It sometimes happens that:					
It is as if my body, or a part of it, has disappeared.	2.5	1.5	1.0	.14	30
I am paralyzed for a while.	1.9	1.2	1.1	.6	24
I cannot speak (or only with great effort), or I can only whisper.	2.6	1.4	1.1	.6	12.3
My body, or part of it, is insensitive to pain.	2.9	1.5	1.1	.5	12
I have pain while urinating.	1.9	1.2	1.0	.2	12
I cannot see for a while (as if I am blind).	1.9	1.3	1.1	.4	10.5
I have trouble urinating.	2.2	1.3	1.1	.5	9.3
I cannot hear for a while (as if I am deaf).	2.5	1.3	1.1	.5	9
I hear sounds from nearby as if they come from far away.	2.7	1.3	1.2	.5	7.6
I grow stiff for a while.	2.7	1.4	1.3	1.0	7.4
I do not have a cold but yet am able to smell much better or worse than I usually do.	1.9	1.3	1.1	.3	7
I feel pain in my genitals (apart from sexual intercourse).	2.6	1.4	1.1	.5	6.8
I have an attack that resembles an epileptic fit.	1.5	1.1	1.0	.2	6.5
I dislike smells that I usually like.	2.0	1.2	1.1	.4	6.2
I dislike tastes that I usually like (women: apart from pregnancy or monthly periods).	2.1	1.2	1.1	.4	6.2
I see things around me differently than usual (for example, as if looking through a tunnel or seeing only a part of an object).	2.8	1.4	1.2	.5	5.1
I cannot sleep for nights on end but remain very active during daytime.	2.9	1.5	1.5	.9	4.7
I cannot swallow or only with great effort.	3.1	1.5	1.5	1.0	4.6
People and things look bigger than they actually are.	2.4	1.5	1.1	.3	4.5
My body, or a part of it, feels numb.	3.1	1.2	1.6	.9	4.4

[a]Range of mean scores is 1 (not applicable) to 5 (highly applicable).

Results

The discriminant indices of all 75 items analyzed, and p-values of B between dissociative disorder patients (N = 50) and comparison patients (N = 50) are shown in Appendices A (items interpreted to reflect negative somatoform dissociative symptoms) and B (positive somatoform dissociative symptoms). These differences reached significance for 66 items. Table 1 presents the univariate associations of the 20 symptoms to caseness significant at $p <$ .05 and with a discriminant index of 4.0 or higher. These items were selected for further analysis.

Mokken scale analysis showed that the 20 items were strongly scalable (H = .50). Items met assumptions of monotone homogeneity and double monotonicity. The reliability of the 20-item scale was excellent (Cronbach's α = .95). Gutman's split half reliability was also very satisfactory (.93).

Men (N = 11) and women (N = 39) without a dissociative disorder did not reach significantly different SDQ-20 total scores (range of possible scores, 20 to 100; mean for men, 23.8 ± 3.0; for women, 23.4 ± 4.2; t-test, NS), nor did men (N = 6) and women (N = 44) with such a disorder (men, 40.8 ± 11.0; women, 49.1 ± 15.6; t-test, NS). Using all 100 subjects, Pearson correlation coefficients between the SDQ-20 total score and age (r = −.027) proved not significant.

Criterion-related validity was demonstrated by the fact that the SDQ-20 score strongly discriminates between dissociative disorder patients (48.14 ± 15.24) and comparison patients (23.5 ± 3.97; z = −8.24, $p < .0001$; see Table 2), as computed with Mann-Whitney U-test. Patients with DID (51.81 ± 12.63) obtained significantly higher SDQ-20 scores than patients with DDNOS or DP (43.83 ± 7.11; Mann-Whitney U-test, z = −2.17, $p < .05$).

The intercorrelations between the SDQ-20 score and the DIS-Q total score as well as three of the four factor scores were high ($.71<r<.76$, $p < .0001$). The intercorrelation with the absorption scale was more moderate (r = .46, $p < .0001$). Overall, these data support the convergent validity of the SDQ-20.

Discussion

The present results confirm the findings of 19th century French psychiatrists (Briquet, 1859; Janet, 1893) and more recent studies (Ross et al, 1989a; Saxe et al., 1994), which found that dissociative disorder patients suffer from a wide range of somatoform symptoms. It seems, however, that some are more characteristic of dissociative disorder than others. It is striking that most of the SDQ-20 items pertain to negative and positive dissociative phenomena. The list contains several kinds of sensory

TABLE 2
*Intercorrelations Between Somatoform (SDQ-20) and Psychological Dissociation (DIS-Q) of Dissociative Disorder Patients (N = 50) and Comparison Psychiatric Patients (N = 50)**

	SDQ-20
DIS-Q total	.76
DIS-Q identity confusion/identity fragmentation	.73
DIS-Q loss of control	.70
DIS-Q amnesia	.71
DIS-Q absorption	.46

$p = < .0001$.

losses, including analgesia ("my body, or a part of it, is insensitive to pain"), and kinesthetic anesthesia ("my body, or a part of it, feels numb;" "it is as if my body, or a part of it, has disappeared"). The phenomenon of "not being able to sleep during nighttime, but remaining very active during daytime" can be seen as an indirect measure of kinesthetic anesthesia, in that the subject lacks kinesthetic feedback that indicates tiredness. Anesthesia also applies to vision ("I cannot see for a while [as if I am blind];" "I see things differently than usual [for example, as if looking through a tunnel or seeing only a part of an object]") and audition ("I hear sounds from nearby as if they come from far away"). Other negative dissociative symptoms pertain to losses of motor control that appear as inhibitions: not being able to swallow, speak, or move. General paralysis and pseudo-epileptic fits seem to relate to far-fetched losses of motor control. Several items refer to positive dissociative symptoms, which apply to alterations of vision, audition, taste, and smell, as well as to pain symptoms in the urogenital area and difficulty urinating.

The selection of items that best discriminate dissociative disorder patients and patients with other psychiatric diagnoses seems to constitute a scale of sound psychometric quality. According to Mokken analysis, they are strongly scalable, and the reliability is high. The resulting scale was interpreted to measure somatoform dissociation, and we, therefore, named it the SDQ-20.

In support of the divergent validity of the SDQ-20, age and gender did not seem to influence the SDQ-20 scores of dissociative disorder and comparison patients. The sample contained few male dissociative disorder patients ($N = 6$), however, which limits the power of the contrast between men and women with dissociative disorders on the SDQ-20.

As hypothesized, the intercorrelations between the SDQ-20 and the DIS-Q total and subscales scores were high, a finding that supports the SDQ-20's convergent validity. The correlation with the DIS-Q absorption scale was more moderate. In a previous study (Vanderlinden et al., 1993), the inter-correlations between the DIS-Q absorption factor and total score, as well as the three other DIS-Q subscale scores, were also more moderate. It seems that the absorption scale is relatively less indicative of pathological dissociation than the other DIS-Q factors and the SDQ-20. In the same vein, none of the DES absorption subscale items (Ross et al., 1991a) entered the DES-T, an 8-item version of the DES (Bernstein and Putnam, 1986) that measures pathological dissociation (Waller et al., 1996). The construct validity (criterion-related validity) of the SDQ-20 was further supported by the finding that patients with DID obtained higher scores than patients with DDNOS or DP.

As many of the symptoms the SDQ-20 items address previously were not generally known or recognized by the field at large as essential markers of complex dissociative disorders (*cf.* American Psychiatric Association, 1994), it seems unlikely that these phenomena are the result of suggestion by therapists. For example, few would have guessed that intermittent change of taste and smell preference, pain while urinating, and not being able to speak and swallow would reach such high discrimination indices. Moreover, even if therapists had known of these facts, it seems equally unlikely that the therapists would have gone to any lengths to suggest all phenomena involved. As Janet (1893) put it, self-suggestion also seems a very crude interpretation of the systematic presence of quite specific somatoform phenomena in complex dissociative disorders. How could patients have gained the knowledge needed to perform this feat? Why would they unwittingly respond in ways most comparable to their 19th century companions in distress? Moreover, it seems difficult to self-suggest those types of extensive and enduring analgesia and anesthesia, which are induced by the release of endogenous endorphins (Van der Kolk, 1994; Van der Kolk et al., 1985). The phenomena of freezing, analgesia, and anesthesia are known outcomes of animal and human traumatization (*cf.* Fanselow and Lester, 1988; Nijenhuis, 1995a; Siegfried et al., 1990; Van der Kolk, 1994; Van der Kolk and Greenberg, 1987; Van der Kolk et al., 1989).[7] They often are present in posttraumatic stress disorder induced by validated trauma (Van der Kolk et al., 1989), whereas traumatic memories are very frequently present in dissociative disorder patients (Boon and Draijer, 1993; Hornstein and Putnam, 1992; Putnam et al., 1986; Ross et al., 1991b). Hence, we postulate that a traumatogenic interpretation of

[6] Nijenhuis ERS, Vanderlinden J, Spinhoven Ph (1996) Animal defensive reactions as a model for trauma-induced dissociative reactions (submitted for publication).

somatoform dissociative symptoms seems more adequate.

Future research with the SDQ-20 should include cross-validation of its dimensional structure and reliability with an independent sample of patients. Also, considering a traumatogenic explanation of pathological somatoform dissociation, demonstration of a relationship between SDQ-20 scores and reported trauma would further strengthen the construct validity of the SDQ-20. Next, the relationship between somatoform and psychological dissociation warrants extended investigation. More specifically, study as to whether somatoform and psychological dissociation independently contribute to the prediction of caseness of dissociative disorder must be performed. To that end, it first should be studied whether a subset of SDQ-20 items could constitute a screening instrument for dissociative disorders.

APPENDIX A

Negative Somatoform Dissociative Phenomena of Dissociative Disorder Patients (N = 50) and Comparison Psychiatric Patients (N = 50): p-Values of B and Discriminant Indices

	p-value of B[a]	Discriminant indices
Motor inhibitions/loss of motor control		
General paralysis	.0033	25.3
Inability/difficulty speaking	< .0001	12.3
Stiffening of the body	< .0001	7.2
Inability/difficulty swallowing	< .0001	4.6
Inability/difficulty walking	.0001	3.1
Inability/difficulty writing	< .0001	3.6
General cramp states of body parts	< .0001	3.1
Immovability of extremities	.0003	2.7
Kinesthetic anesthesia/analgesia		
Body (or parts of it) missing	.0034	20.0
Analgesia	< .0001	12.0
Numbing	< .0001	4.4
Visual anesthesia/perceptual alteration		
(Intermittent) blindness	.0039	10.5
Restriction of visual field	< .0001	5.1
Variable visual acuity	< .0001	3.7
Blurred vision	.0002	2.2
Auditive anesthesia		
(Intermittent) deafness	< .0001	9.0
Auditive distancing	< .0001	7.6
Intermittent reduced acuity	< .0001	2.3
Olfactory alteration		
Change in acuity	.0021	6.0
Gustatory alteration		
Change in acuity	.0030	3.0
Loss of function		
Difficulty urinating	.0002	9.3
Pseudo-epileptic attacks	.0293	6.5
Inexplicable tiredness	< .0001	3.8
Loss of appetite and inability to eat	< .0001	2.5
Impotency	NS	—

[a]Separate logistic regression analysis.

APPENDIX B

Positive Somatoform Dissociative Phenomena of Dissociative Disorder Patients (N = 50) and Comparison Psychiatric Patients (N = 50): p-Values of B and Discriminant Indices

	p-value of B[a]	Discriminant indices
Pain symptoms		
Pain while urinating	.0009	12.0
Genital pain apart from intercourse	< .0001	6.9
Vaginal or penal pain during or after intercourse[b]	.0005	4.4
Extremely heavy menstrual pain	.0012	3.8
Rapidly intermitting joint pain	.0001	3.7
Pelvic pain (apart from menstruation)	< .0001	3.0
Inexplicable pain symptoms	< .0001	3.0
Rapidly intermitting stomachache	< .0001	3.0
Rapidly intermitting headache	< .0001	2.8
Stomachache	.0009	2.5
Intermittent back pain	.0002	2.5
Joint pain	< .0001	2.4
Headache	.0001	2.2
Localized headache	.0004	1.9
Tension headache	.0009	1.7
Migraine-type headache	.0016	1.6
Back pain	.0035	1.6
Anal pain/cramps with intercourse	NS	—
Movement		
Uncontrollable movements (trembling/shaking)	< .0001	3.9
Vision		
Enlargement of the perceived	.0002	4.5
Shrinkage of the perceived	< .0001	3.9
Double vision	.0002	3.3
Taste/smell alterations		
Intermittent change of smell preference	.0004	6.2
Intermittent dislike of preferred tastes (apart from pregnancy or menstruation)	.0003	6.1
Intermittent attraction to otherwise disliked tastes (apart from pregnancy or menstruation)	NS	—
Intermittent attraction to otherwise disliked smell	NS	—
Gastrointestinal symptoms		
Vomiting	.0001	2.9
Sickness	.0001	2.5
Stomach/intestinal cramps with diarrhea	.0052	1.6
Vomiting during full pregnancy period	.0388	1.3
Other functions		
Uncontrolled (bulimia-type) eating	.0002	2.9
Irregular menstruation	.0001	2.7
Extremely heavy menstruation	.0124	2.3
Intermittent skin allergy	.0002	2.0
Intermittent food allergy	NS	—
Interrupted menstruation	NS	—

(Continued on next page)

Other state-dependent responses		
High level of activity notwithstanding chronic lack of sleep	.0000	4.7
Affective state-dependent responses to medication	.0031	3.0
Unpredictable responses to alcohol (apart from having eaten or not)	.0014	2.6
Variable responses to medication	.0005	2.4
Unpredictable response to medication	.0118	2.0
Variable responses to alcohol	.0022	1.9
Without exertion		
Variable levels of blood pressure	.0388	3.0
Fainting	.0276	2.9
Dizziness	.0001	2.4
Palpitations	.0108	2.1
Headache	.0047	2.1
Hyperventilation	NS	—
Shortness of breath	NS	—

[a]Separate logistic regression analysis.
[b]Results of two gender-specific items combined.

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