Feeling Unreal: A Depersonalization Disorder Update of 117 Cases

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Background: Despite a surge of interest and literature on depersonalization disorder in recent years, a large series of individuals with the disorder has not been described to date. In this report, we systematically elucidate the phenomenology, precipitants, antecedents, comorbidity, and treatment history in such a series.

Method: 117 adult subjects with depersonalization disorder (DSM-III-R/DSM-IV criteria) consecutively recruited to a number of depersonalization disorder research studies were administered structured and semistructured diagnostic interviews and the Dissociative Experiences Scale. Data were gathered from 1994 to 2000.

Results: The illness had an approximately 1:1 gender ratio with onset around 16 years of age. The course was typically chronic and often continuous. Illness characteristics such as onset, duration, and course were not associated with symptom severity. Mood, anxiety, and personality disorders were frequently comorbid, but none predicted depersonalization severity. The most common immediate precipitants of the disorder were severe stress, depression, panic, marijuana ingestion, and hallucinogen ingestion, and none of these predicted symptom severity. Negative affects, stress, perceived threatening social interaction, and unfamiliar environments were some of the more common factors leading to symptom exacerbation. Conversely, comforting interpersonal interactions, intense emotional or physical stimulation, and relaxation tended to diminish symptom intensity. There were no significant gender differences in the clinical features of the disorder. In this sample, depersonalization tended to be refractory to various medication and psychotherapy treatments.

Conclusion: The characteristics of depersonalization disorder found in this sample, the largest described to date, are in good accord with previous literature. The study highlights the need for novel therapeutic approaches to treat depersonalization disorder. Novel medication classes, as well as novel psychotherapeutic techniques that build on the reported symptom fluctuation factors, may prove helpful in the future.

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Depersonalization disorder is one of the major dissociative disorders and is still relatively poorly understood, diagnosed, and treated even within the trauma and dissociation fields. However, there have been significant advances in elucidating phenomenology,[1,2] neurobiology,[3–6] and treatment options[7,8] in the last decade. A few years ago, we systematically described a series of 30 subjects diagnosed with DSM-III-R depersonalization disorder.[1] In summary, we described that the disorder had average onset in adolescence, was typically chronic in course and refractory to a variety of treatment approaches, and was widely comorbid with Axis I mood and anxiety disorders as well as with the spectrum of personality disorders, but not uniquely related to any. In this report, we present an expanded series of 117 subjects formally diagnosed with depersonalization disorder, which includes the original 30 subjects, to further systematically characterize the disorder in a much larger sample of patients and to explore whether the initial findings previously reported remain valid.

METHOD

One hundred seventeen consecutively recruited adult subjects with DSM-III-R or DSM-IV depersonalization disorder are presented in this report. Diagnostic criteria for depersonalization disorder are the same in DSM-III-R and DSM-IV. The subjects participated in depersonalization disorder–related research studies at our institution, for which they provided written informed consent. As part of these protocols, subjects received a standardized base-

line diagnostic evaluation, the findings of which are presented here. The study was approved by an institutional review board.

All subjects met diagnostic criteria for depersonalization disorder by an unpublished semistructured interview developed by our group; diagnoses were subsequently confirmed by the Structured Clinical Interview for Dissociative Disorders (SCID-D).[9,10] The semistructured interview developed by the authors inquires about aspects of depersonalization history, such as onset, course, triggers, exacerbating/alleviating factors, family history, and detailed treatment history. The SCID-D scores 5 dissociative symptoms (amnesia, depersonalization, derealization, identity confusion, and identity alteration) on a 4-point severity scale (1 = none, 2 = mild, 3 = moderate, 4 = severe), allowing the diagnosis of DSM-IV dissociative disorders with a kappa of .96. For the diagnosis of depersonalization disorder to be made, the DSM stipulates persistent or recurrent experiences of depersonalization during which reality testing remains intact. The depersonalization must be sufficiently severe and persistent to cause marked distress or dysfunction and must be the predominant disturbance rather than a symptom of another disorder.

The Dissociative Experiences Scale (DES) was also administered.[11,12] The DES is by far the most widely employed scale measuring dissociation, used in over 250 research studies to date.[13] It is a 28-item self-report measure of dissociative experiences intended for use as a trait measure, inquiring about "experiences that you may have in your daily life." In the original version, items are marked on a 0-to-100–mm visual analogue scale, scored to the nearest 5 mm.[9] In the revised version, for each item, the subject circles a choice ranging from 0% to 100% in 10% intervals.[10] The total DES score is the mean of the 28 items and ranges from 0 to 100. The DES has been shown to have good test-retest reliability (intraclass correlation coefficient, 0.79–0.96), high internal consistency (Cronbach's $\alpha = 0.95$), and strong convergent, discriminant, and criterion validity.[10]

Although some debate exists in the literature regarding the validity of DES factor analyses, which yield dissociative symptom subscales and scores that can be used in research, several studies[14–16] have similarly replicated 3 factors: self-absorption, amnesia, and depersonalization. A factor analysis of subjects with depersonalization disorder has confirmed these 3 factors,[17] and in the current study we employed a DES depersonalization score (DES-DPS) based on that factor analysis (mean of items 7, 12, 13, 24, and 28). In addition, we employed the "pathological dissociation" taxon score recently proposed by Waller et al.,[18] who reexamined the structure of the DES with sophisticated taxometric analyses and found that it encompasses 2 categorically distinct entities: "normal dissociation," which is widely distributed in the general population, and "pathological dissociation," which is relatively rare in the population and a clear indication of pathology. The taxon includes DES items 3, 5, 7, 8, 12, 13, 22, and 27. We have previously found that this taxon score, applied to depersonalization disorder subjects, reflects their pathologic dissociative state much more strongly than their relatively modest DES scores.[17]

Axis I disorders were assessed with the Structured Clinical Interview for DSM-III-R or DSM-IV Disorders/Patient Version,[19,20] modified to assess lifetime and current dysthymia and generalized anxiety disorder. Axis II disorders were assessed with the Structured Clinical Interview for DSM-III-R Personality Disorders[21] and the Structured Interview for DSM-IV Personality Disorders.[22]

Paired Student t tests were used to compare the age at onset of depersonalization disorder with that of other Axis I disorders. Pearson correlations and independent sample t tests were used to investigate relationships between depersonalization severity and clinical characteristics of the condition. Linear regressions were used to predict depersonalization severity as a function of Axis I disorders, Axis II disorders, and disorder precipitants. The 2 genders were compared in demographic and clinical characteristics by independent sample t tests or chi-square tests, as appropriate. All statistical tests were 2-tailed.

RESULTS

Clinical Presentation

The 30 depersonalization disorder subjects described in our original report[1] and the 87 subjects recruited subsequently did not significantly differ in demographic or clinical features and are therefore presented as a single sample. Of the total sample, 73% of subjects were recruited through our advertising efforts, 18% were self-referred via their personal researching efforts, and 9% were physician referred. Geographically, 77% of subjects lived within a 2-hour vicinity of New York, 13% came from other U.S. regions, and 10% were of international origin.

Of the 117 individuals with depersonalization disorder, 55 (47%) were women and 62 (53%) were men. The mean ± SD age of the sample was 33.2 ± 10.1 years, with a range of 18 to 64 years. Most subjects (68%) were single, 16% were married, 6% were separated, and 10% were divorced. The very low proportion of individuals involved in committed long-term relationships was reflective of the common subjective report of deficits in the sense of interpersonal connectedness. Sexual orientation was 89% heterosexual, 9% homosexual, and 2% bisexual. The sample was fairly well educated: 3% had not completed high school, 13% were high school graduates, 31% had some college education, 32% graduated college, and 21% had some graduate education. Employment status was as follows: 17% unemployed, 14% part-time employed, 56% full-time employed, 11% students, and 2%

homemakers. Numerous employed individuals described that their depersonalization strongly prevented them from employment that was correspondent to their level of training or intellectual capacities. Specifically, cognitive interference in their occupation having to do especially with difficulty focusing and cognitive deterioration with overstimulation were frequently described. Ethnic distribution of the sample was 83% white, 7% African American, 5% Hispanic, and 5% Asian.

Mean ± SD age at onset of depersonalization was 15.9 ± 7.5 years (range, 3–41 years). Less than 20% of subjects experienced illness onset after 20 years of age, and only about 5% experienced onset after 25 years of age. The duration of illness was highly variable, with a mean of 15.8 ± 12.7 years, and subjects had suffered for as little as 3 months to as long as 58 years. In other words, the average patient had suffered from depersonalization for about half their lifetimes by the time they presented to our center. Half of all subjects described a very acute onset of their illness within hours to days, while the other half described a gradual and insidious onset over weeks to months or had felt depersonalized as far back as they could remember. The course of the illness was continuous since onset in the majority of subjects (56%) and episodic in about one third (N = 38), while a minority described episodes that became continuous within a time period of several months to years (N = 13). There was no significant relationship between depersonalization severity (DES-DPS) and characteristics of the illness such as age at onset ($r = –0.01$, $df = 115$, $p = .93$), illness duration ($r = 0.03$, $df = 115$, $p = .77$), acute versus insidious onset ($t = 1.59$, $df = 115$, $p = .11$), and episodic versus continuous course ($t = 1.14$, $df = 102$, $p = .89$).

Family history of psychiatric illness in first-degree relatives was collected only via personal knowledge of the probands and was recorded as present only if the subject had relative certainty of the condition. Therefore, the numbers presented here are most likely underestimates of family psychiatric morbidity. The following conditions were reported: depersonalization 5%, depression 29%, bipolar disorder 10%, schizophrenia 9%, obsessive-compulsive disorder 4%, panic disorder 8%, alcohol abuse 14%, bulimia 2%, pathological gambling 1%, and attention-deficit/hyperactivity disorder 1%. Of the 117 subjects, 19% reported a history of at least 1 psychiatric hospitalization, either for depersonalization or for comorbid conditions. There was a history of self-mutilative, self-injurious behaviors in 12% of subjects. In terms of neurologic illnesses, no subjects had a history of seizure disorder or serious head trauma; a history of migraines was reported by 13% of subjects.

Structured Assessment of Dissociative Symptoms

All subjects met criteria for depersonalization disorder, but not for other dissociative disorders, on the SCID-D.

Table 1. Dissociative Experiences Scale Item Scores in 117 Subjects With Depersonalization Disorder (arranged in descending frequency)

Item No.	Abbreviated Description	Mean	SD
12	Surroundings seem unreal	67.4	29.6
28	Looking at the world through a fog	60.0	37.3
13	Body does not belong to one	50.6	34.7
2	Did not hear part of conversation	43.6	29.3
16	Finding familiar place strange and unfamiliar	35.3	33.0
20	Staring off into space; unaware of time	32.7	31.8
23	Can't remember if just did something or thought it	31.6	28.8
22	Do usually difficult things with ease/spontaneity	31.2	31.2
21	Act so differently/feel like two different people	28.7	32.5
20	Talk out loud to oneself when alone	28.4	32.2
7	Standing next to self/like looking at another person	28.0	32.5
16	Absorbed in TV/movie; unaware of other events	27.8	30.6
1	Driving in a car and don't remember trip	27.6	29.2
14	Don't know if something happened or dreamed it	25.7	26.5
10	Don't recognize self in mirror	22.8	30.6
17	Involved in daydreaming	22.5	28.4
18	Sometimes able to ignore pain	21.4	26.3

The distribution of mean ± SD scores for each of the 5 SCID-D dissociative symptoms was as follows: amnesia 1.2 ± 0.4, depersonalization 4.0 ± 0.0, derealization 3.4 ± 1.1, identity confusion 2.6 ± 1.4, and identity alteration 1.2 ± 0.4. In other words, depersonalization/derealization was pronounced and identity confusion was moderate, while amnesia and identity alteration were minimal.

Mean DES score for the entire sample was 24.9 ± 14.7. Mean score for the DES depersonalization factor was 47.5 ± 20.6, and mean DES taxon score was 25.3 ± 13.3. DES scores for the 11 scale items with a mean score greater than 20, typically interpreted as indicative of possible clinical importance, are presented in Table 1 in order of descending frequency.

Precipitants of Depersonalization Disorder

The relationship between more remote childhood trauma and depersonalization disorder was investigated and described by us in another report.[23] Here, we describe factors that, according to subject history, had a clear and immediate temporal relation to the precipitation of the disorder. This information was systematically elicited from all subjects and is summarized in Table 2. Table 2 shows that in about half of the subjects, no immediate trigger of the illness could be identified. It is important to note that all of the subjects who had onset of the disorder at a very young age or as far back as they could remember belong in this category and that more remote chronic adversity could well be a contributing factor in this category. In the remaining half of the sample, severe stress, mental illness, and drug use were the 3 most common triggers.

Table 2. Precipitants of Illness Onset in 117 Subjects With Depersonalization Disorder[a]

Precipitant	N	%
None identifiable	57	49
Severe stress	29	25
Marijuana ingestion	15	13
Panic attacks	14	12
Depression	10	9
Hallucinogen ingestion	7	6
Viral illness	5	4
Ecstasy ingestion	2	2
Ketamine ingestion	1	1

[a]Precipitants are not necessarily mutually exclusive, other than the category "none identifiable."

When the 5 most common precipitants (marijuana use, hallucinogen use, depression, panic attacks, and stress) were entered into a linear regression analysis, they did not significantly predict depersonalization severity as measured by the DES-depersonalization factor ($F = 1.94$, $df = 5,111$; $p = .09$).

Exacerbating and Alleviating Factors

Although some subjects described the intensity of their depersonalization symptoms as more fluctuant than others, systematic inquiry frequently revealed that for many individuals both internal and environmental factors influenced symptom intensity, or at least the perception of such intensity. Table 3 presents the exacerbating and alleviating factors noted by this series of subjects. A wide but consistent range of factors was associated with symptom improvement or worsening, and some patterns emerged. Physical environmental factors affected symptom intensity, such as the common worsening with certain types of lighting, unfamiliar new places, and noise. Sleep deprivation and fatigue exacerbated the condition, whereas good sleep and restfulness were helpful. Stress typically worsened symptoms, whereas techniques that decreased stress were often helpful. Interpersonal factors figured prominently, such as the worsening of symptoms in those negatively affected by threatening social interaction versus the improvement in those comforted by positive interpersonal exchange. Emotional state was also an important factor. Negative affects such as depression, anxiety, panic, loneliness, and rejection worsened depersonalization in many subjects. On the other hand, intense emotional stimulation of mostly positive valence, such as exhilaration, elation, romance, sexual excitement, but also intense fear or anger, often diminished symptom intensity. Similarly, intense physical stimulation such as physical contact, exercise, or pain (incidental or self-inflicted) lessened symptoms. Drugs affected symptom intensity in some subjects. Marijuana and hallucinogens were consistently associated with exacerbation, whereas alcohol and caffeine/stimulants could worsen or lessen symptoms depending on the subject. Finally, focusing on the depersonalized self-state typically induced worsening, whereas distraction away from the self as the focus by becoming immersed in various tasks and activities was often helpful.

Table 3. Exacerbating and Alleviating Factors of Depersonalization Symptoms in 117 Subjects With Depersonalization Disorder (includes factors cited by at least 4 subjects, arranged in order of decreasing frequency)

Factor	N
Exacerbating factors	
Stress	33
Negative affects	31
None	30
Social interaction	16
Alcohol/drugs	15
Fatigue/sleep deprivation	15
Bright/fluorescent lights	13
Unfamiliar places/travel	11
Sleep deprivation	7
Self/symptom focus	6
Overstimulation/noise	5
Dimness/darkness	4
Viral illness	4
Alleviating factors	
None	46
Relaxation/meditation/yoga	16
Emotional stimulation	15
Social interaction	14
Task-focusing activities	14
Exercise	10
Physical stimulation	6
Drugs	6
Bright light/sunshine	5
Rested/good sleep	4
Mental discipline	4

Axis I Comorbidity

Table 4 summarizes Axis I lifetime and current comorbidity. Since lifetime diagnosis of schizophrenia, schizoaffective disorder, and mental retardation and current substance use disorder and eating disorder were excluded from our research studies, they either do not appear in the table or are referred to in the table as "not included." Bipolar disorder was excluded from most but not all studies and is therefore included in the table. Mood and anxiety disorders were commonly comorbid with depersonalization disorder. Eighty-five subjects (73%) had a lifetime comorbid unipolar mood disorder, and 75 subjects (64%) had a lifetime comorbid anxiety disorder history. Fifty-six subjects (48%) had a lifetime history of both, while 13 (11%) had no lifetime history of either. Notably fewer subjects had current mood or anxiety disorder when they presented to us with depersonalization disorder. Of note, the rate of posttraumatic stress disorder comorbidity was very low in the sample.

The age at onset of the major mood and anxiety disorders was compared with that of depersonalization disorder via paired t tests. No comorbid disorder had significantly earlier onset than depersonalization disorder, while both major depression and panic disorder had significantly later onset (major depression, $t = 4.42$, $df = 77$,

Table 4. Comorbid Axis I Disorders in 117 Subjects With Depersonalization Disorder

	Lifetime		Current	
Disorder	N	%	N	%
Bipolar disorder	2	1.7	2	1.7
Major depression	78	66.7	12	10.3
Dysthymia	36	30.8	27	23.1
Panic disorder	36	30.8	14	12.0
Agoraphobia without panic	5	4.3	3	2.6
Social phobia	38	32.5	33	28.2
Specific phobia	6	5.1	6	5.1
OCD	14	12.0	10	8.5
GAD	22	18.8	19	16.2
PTSD	4	3.4	2	1.7
Bulimia	8	6.8	N/I	N/I
Anorexia	6	5.1	N/I	N/I
Body dysmorphic disorder	N/A	N/A	5	4.3
Somatoform disorder	N/A	N/A	7	6.0
Hypochondriasis	N/A	N/A	1	0.9
Adjustment disorder	N/A	N/A	3	2.6
Alcohol dependence	17	14.5	N/I	N/I
Alcohol abuse	6	5.1	N/I	N/I
Cannabis dependence	10	8.5	N/I	N/I
Cannabis abuse	5	4.3	N/I	N/I
Cocaine dependence	7	6.0	N/I	N/I
Cocaine abuse	0	0.0	N/I	N/I
Stimulant dependence	5	4.3	N/I	N/I
Stimulant abuse	0	0.0	N/I	N/I
Hallucinogen dependence	0	0.0	N/I	N/I
Hallucinogen abuse	3	2.6	N/I	N/I
Sedative dependence	2	1.7	N/I	N/I
Sedative abuse	1	0.9	N/I	N/I
Opioid dependence	2	1.7	N/I	N/I
Opioid abuse	1	0.9	N/I	N/I

Abbreviations: GAD = generalized anxiety disorder, N/A = Structured Clinical Interview for DSM-III-R/DSM-IV Disorders assesses only current (not lifetime) presence of disorder, N/I = patients with this disorder were excluded from our sample, OCD = obsessive-compulsive disorder, PTSD = posttraumatic stress disorder.

$p < .001$; panic disorder, $t = 3.30$, $df = 35$, $p < .01$). Lifetime presence of the major 6 mood and anxiety disorders did not significantly predict depersonalization severity as reflected by the DES-DPS factor scores ($F = 1.29$, $df = 6,110$; $p = .27$).

Axis II Comorbidity

Table 5 summarizes Axis II comorbidity and shows that all personality disorders were represented in the current sample. The most common personality disorders were avoidant, borderline, and obsessive-compulsive. Of the 107 subjects whose Axis II pathology was assessed, about half (N = 51, 48%) had no personality disorder, while the mean number of personality disorders per subject was 1.2 ± 1.5 (range, 0–6). Of the 56 subjects with personality disorder diagnoses, 19 diagnoses belonged to cluster A, 30 were in cluster B, and 41 were in cluster C. Twenty-eight subjects belonged to multiple clusters (mostly B and C), while the remaining 28 belonged to a single cluster. Presence of the 10 major personality disorders did not significantly predict depersonalization severity as reflected by the DES-DPS factor scores ($F = 0.56$, $df = 10,96$; $p = .84$).

Table 5. Comorbid Axis II Disorders in 107[a] Subjects With Depersonalization Disorder (arranged in decreasing frequency)

Disorder	N	%
Personality disorders		
Avoidant	25	23
Borderline	22	21
Obsessive-compulsive	22	21
Paranoid	16	15
Narcissistic	14	13
Dependent	11	10
Schizotypal	7	7
Histrionic	6	6
Schizoid	4	4
Antisocial	2	2
DSM-III-R/DSM-IV appendix disorders		
Depressive[b]	14	18
Self-defeating	7	7
Negativistic[b]	3	4
Passive aggressive[c]	1	3

[a]Axis II disorders were not assessed in 10 subjects.
[b]N = 77 (DSM-IV only).
[c]N = 30 (DSM-III-R only).

Treatment History

Many subjects had received psychiatric treatment before presenting to our studies. Treatment history was obtained only via subject report. For medication trials, approximate dose and duration were inquired about, and trials were included only if deemed adequate. Treatment was not necessarily aimed at the depersonalization symptoms per se, but we retrospectively attempted to establish whether each particular treatment was of any benefit for depersonalization. Responses were simply categorized as slightly better, definitely better, and same/worse, to maximize accuracy of retrospective reporting. It can be seen from Table 6 that only selective serotonin reuptake inhibitors and benzodiazepines were reported as having been of any benefit for depersonalization, but their benefit was quite modest. The "other" category included isolated trials of mirtazapine, barbiturate, meprobamate, doxepin, levothyroxine, and liothyronine. Most subjects had been in psychotherapy, the duration and intensity of which were not quantified in this report and were highly variable. Still, a general pattern emerged in that the large majority of subjects found psychotherapy helpful in understanding or coping with their depersonalization symptoms but not in symptom reduction. There were sporadic reports of benefit from cognitive-behavioral therapy and hypnosis; however, these approaches had been tried by very few subjects in our series. Of the 3 subjects who had received electroconvulsive therapy, 2 did not improve and 1 experienced marked worsening of depersonalization.

Gender

We examined the influence of gender on demographic and clinical characteristics, as well as on comorbidity patterns. Women presented to our studies at a significantly

Table 6. Retrospective Treatment History in 117 Subjects With Depersonalization Disorder

Treatment	Total No. of Trials	Definitely Better No. of Trials (%)	Slightly Better No. of Trials (%)	Same/Worse No. of Trials (%)
Tricyclics	31	1 (3)	2 (7)	28 (90)
SSRIs	60	9 (15)	14 (23)	37 (62)
Clomipramine	3	0 (0)	0 (0)	3 (100)
Nefazodone	6	0 (0)	0 (0)	6 (100)
MAOIs	16	0 (0)	2 (13)	14 (87)
Bupropion	11	1 (9)	0 (0)	10 (91)
Venlafaxine	7	0 (0)	0 (0)	7 (100)
Benzodiazepines	35	10 (29)	8 (23)	17 (48)
Buspirone	15	0 (0)	0 (0)	15 (100)
Lithium	9	0 (0)	0 (0)	9 (100)
Anticonvulsants	12	0 (0)	1 (8)	11 (92)
Stimulants	9	0 (0)	2 (22)	7 (78)
Antipsychotics	13	0 (0)	0 (0)	13 (100)
Atypical antipsychotics	7	0 (0)	0 (0)	7 (100)
Other medications	7	0 (0)	0 (0)	7 (100)
Psychotherapy	92	2 (2)	21 (23)	69 (75)
Cognitive-behavioral therapy	8	1 (13)	1 (13)	6 (75)
Hypnosis	3	1 (33)	1 (33)	1 (33)
ECT	3	0 (0)	0 (0)	3 (100)

Abbreviations: ECT = electroconvulsive therapy, MAOI = monoamine oxidase inhibitor, SSRI = selective serotonin reuptake inhibitor.

younger age than men (31.3 vs. 34.9 years; $t = 2.00$, $df = 115$, $p < .05$). The 2 genders did not differ in marital status, education, or ethnicity, but differed in employment status, with women being less likely to be employed full-time ($p = .04$). Women and men did not differ in any clinical characteristics of depersonalization disorder, including age at onset (15.2 vs. 16.5 years; $t = 0.98$, $df = 115$, $p = .33$), duration (14.6 vs. 16.9 years; $t = 0.95$, $df = 115$, $p = .34$), type of onset ($p = .52$), type of course ($p = .63$), or symptom severity (DES: women 26.5 vs. men 23.5; $t = 1.09$, $df = 115$, $p = .28$; DES-DPS: women 48.6 vs. men 46.5; $t = 0.55$, $df = 115$, $p = .58$; DES-taxon: women 25.9 vs. men 24.9; $t = 0.42$, $df = 115$, $p = .67$). Finally, the 2 genders did not differ in comorbidity patterns for total personality disorders or lifetime mood and anxiety disorders.

DISCUSSION

We examined phenomenology, comorbidity, and treatment history in a large series of subjects with depersonalization disorder consecutively recruited to our research program and found them to be very consistent with the findings reported in our original series of 30 subjects.[1] The current finding of adolescent onset at 16 years of age was identical to the original finding, and again, onset after 25 years of age was very unusual. One might speculate that chronic depersonalization is in part developmentally driven and that the adolescent years are a vulnerable period for the formation of a "real" and "well-grounded" self-experience; in addition, neurobiological factors could be at play. In the present series, gender ratio approximated 1:1 as opposed to the nearly 2:1 ratio of our original report, concurring with the gender ratio cited in the DSM, but it is not possible to know whether this ratio reflects the true population pattern of the disorder without epidemiologic studies. It is also important to note that we found no gender differences in the onset, course, or severity of the disorder—the somewhat younger age of women at presentation to us is probably explained by the general tendency of women to seek psychiatric evaluation earlier than men. As previously, the course of the illness was found to be typically chronic, usually continuous, and less often episodic. Again, comorbid mood and anxiety disorders were very common on Axis I (11% of the sample had no lifetime history of a mood or anxiety disorder, similar to the finding of 10% of the original sample), and all Axis II clusters were well represented, but no disorder was uniquely related to depersonalization disorder either by predating it or by predicting symptom severity. Indeed, a recent historical review revealed marked phenomenological stability in the core symptoms of chronic depersonalization (emotional numbing, visual derealization, and altered body experience) over the last 100 years.[23]

DES total scores for this large sample were modest for a dissociative disorder diagnosis (mean = 24.9 in the present sample vs. 22.7 in the original sample), highlighting the importance of using either a low cutoff on the DES total score or more specific subscale scores to detect the disorder sensitively.[17] Scales other than the DES, such as the Cambridge Depersonalization Scale,[2] may be preferable for quantifying this condition. In effect, numerous items of the DES that refer to amnestic or identity alteration symptoms are, by definition, scored quite low in this population.

Traumatic antecedents of depersonalization disorder are a topic of great interest, since until recently these have been more obscure and debated than the more blatant traumatic antecedents of more severe dissociative disorders. In

a previous report,[24] we described that emotional abuse in particular was the type of childhood interpersonal trauma that specifically predicted depersonalization scores in a group of 49 subjects with depersonalization disorder. We had proposed that the various dissociative disorders may lie on a spectrum of severity associated with different types of childhood traumatic antecedents.

In addition to earlier trauma, the current report highlights that in about half of cases, more immediate stressors, chemical or emotional, precipitate the onset of the disorder. Marijuana and hallucinogens have been previously described as triggers of chronic depersonalization,[25,26] and the present series supports this. Since use of these drugs is very common in the general population, they presumably triggered depersonalization in a small subsample for more specific reasons. These may include genetic vulnerabilities, or specific chemical disruptions induced by the particular drugs in already vulnerable underlying neurochemical systems. Alternatively, and not mutually exclusively, there may be a mechanism whereby the drugs induce, especially with "bad trips," a highly dystonic and frightening shift in self-perception that is overwhelmingly traumatic and triggers a chronic dissociative process. Such a corroborating history can be elicited from some, but not all, subjects. The 13% comorbidity of depersonalization with migraines approximates the general population prevalence of migraines and does not suggest a specific association between the 2 conditions; such an association has been suggested[27] but never documented.

The frequent induction of depersonalization by severe stress of various types, interpersonal, financial, occupational, etc., is in accord with the conceptualization of depersonalization disorder as a stress- or trauma-related disorder. Accordingly, stress is a very common exacerbating factor of symptom severity, and relaxation-related approaches are helpful to a number of subjects. Finally, episodes of mental illness, in particular depression and panic, were also a common initial precipitant of depersonalization in this series, even though in a large proportion of cases these conditions subsequently lessened or cleared. We again hypothesize that for individuals with a depersonalization diathesis, an initial episode of depression or panic, especially if experienced as very severe, frightening, life-threatening, or out of a person's control, functions as a traumatic event that profoundly shifts an individual's self-perception and triggers chronic dissociation, which can subsequently become autonomous from its original trigger. Of interest is also the high incidence of severe mental illness in the first-degree relatives, mostly parents, of patients in this series (10% bipolar disorder and 10% schizophrenia, despite the exclusion for the most part of probands with these diagnoses from our sample and the likely underdiagnosis of psychiatric illnesses in family members). This finding suggests, corroborated by the histories offered by the subjects themselves, that for at least some the emotional trauma of being exposed to their family's mental illness with all its ramifications may trigger chronic depersonalization in those who are vulnerable. Finally, there is a proportion of depersonalization disorder subjects in whom neither remote nor immediate precipitants can be readily identified; the presence of chronic dissociation in this subgroup is more puzzling, and one might speculate that it is more strongly biologically driven. Of 2 twin studies of dissociation, one found no genetic component,[28] while the other reported a 48% genetic influence.[29]

As previously described, depersonalization disorder unfortunately tends to be refractory to both psychotherapy and medication treatments,[1] a finding clearly corroborated by this study. However, two words of caution are of note here. First, subjects who have positively responded to treatments may be less likely to present to our research program, resulting in sampling bias. Second, certain psychotherapeutic techniques that could potentially be helpful in treating the disorder, such as more specific trauma-focused approaches, grounding techniques used in treating dissociation, hypnosis, or cognitive-behavioral approaches centering on depersonalization, were poorly represented in this sample. The extensive exacerbating and alleviating factors of symptom severity cited in this report may offer insights into treatment interventions that may relieve depersonalization. Management of stress and negative affects may be helpful. Similarly, focus away from individuals' preoccupation with the depersonalized state of the self and task distraction appear helpful. Manipulation of physical parameters such as light, noise, and amount of stimulation also seem to have an impact. Finally, a number of individuals with the condition descriptively appear to be in a low-arousal, shutdown state that is lightened by an increase in stimulation. As such, a focus on intense affective experience or constructive physical stimulation may be useful therapeutic approaches. Indeed, Hunter[30] has preliminarily described promising outcome in using cognitive-behavioral therapy to target depersonalization. With regard to the psychopharmacologic treatment of depersonalization, 2 recent randomized placebo-controlled trials did not find efficacy, bearing out the overall negative findings reported retrospectively by this series of subjects: one negative trial used fluoxetine,[7] and the other used lamotrigine.[8] Novel medication classes warrant research for the treatment of this disorder for which our conventional psychotropic agents do not appear to have efficacy.

Drug names: bupropion (Wellbutrin and others), buspirone (BuSpar and others), clomipramine (Anafranil and others), doxepin (Sinequan and others), fluoxetine (Prozac and others), lamotrigine (Lamictal), levothyroxine (Synthroid, Levoxyl, and others), liothyronine (Cytomel, Triostat, and others), meprobamate (Miltown, Equanil, and others), mirtazapine (Remeron and others), nefazodone (Serzone), venlafaxine (Effexor).

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REFERENCES

1. Simeon D, Gross S, Guralnik O, et al. Feeling unreal: 30 cases of DSM-III depersonalization disorder. Am J Psychiatry 1997;154:1107–1113
2. Sierra M, Berrios GE. The Cambridge Depersonalization Scale: a new instrument for the measurement of depersonalization. Psychiatry Res 2000;93:153–164
3. Simeon D, Guralnik O, Hazlett EA, et al. Feeling unreal: a PET study of depersonalization disorder. Am J Psychiatry 2000;157:1782–1788
4. Phillips ML, Medford N, Senior C, et al. Depersonalization disorder: thinking without feeling. Psychiatry Res 2001;108:145–160
5. Simeon D, Guralnik O, Knutelska M, et al. Hypothalamic-pituitary-adrenal axis dysregulation in depersonalization disorder. Neuropsychopharmacology 2001;25:793–795
6. Sierra M, Senior C, Dalton J, et al. Autonomic response in depersonalization disorder. Arch Gen Psychiatry 2002;59:833–838
7. Simeon D, Guralnik O, Schmeidler J, et al. A double-blind comparison of fluoxetine and placebo in the treatment of depersonalization disorder. Presented at the 57th annual meeting of the Society of Biological Psychiatry; May 16–18, 2002; Philadelphia, Pa. Abstract 137
8. Sierra M, Phillips ML, Ivin G, et al. A placebo-controlled, cross-over trial of lamotrigine in depersonalization disorder. J Psychopharmacol 2003;17:103–105
9. Steinberg M, Rounsaville B, Cicchetti DV. The Structured Clinical Interview for DSM-III-R Dissociative Disorders: preliminary report on a new diagnostic instrument. Am J Psychiatry 1990;147:76–82
10. Steinberg M. Structured Clinical Interview for DSM-IV Dissociative Disorders, Revised (SCID-D). Washington, DC: American Psychiatric Press; 1994
11. Bernstein EM, Putnam FW. Development, reliability, and validity of a dissociation scale. J Nerv Ment Dis 1986;174:727–735
12. Carlson EB, Putnam FW. An update on the Dissociative Experiences Scale. Dissociation 1993;6:16–27
13. van Ijzendoorn MH, Schuengel C. The measurement of dissociation in normal and clinical populations: meta-analytic validation of the Dissociative Experiences Scale (DES). Clin Psychol Rev 1996;16:365–382
14. Carlson EB, Putnam FW, Ross CA, et al. Factor analysis of the Dissociative Experiences Scale: a multicenter study. In: Braun BG, Carlson EB, eds. Proceedings of the 8th International Conference on Multiple Personality and Dissociative States. Chicago, Ill: Rush; 1991
15. Ross CA, Joshi S, Currie R. Dissociative experiences in the general population: a factor analysis. Hosp Community Psychiatry 1991;42:297–301
16. Ross CA, Ellason JW, Anderson G. A factor analysis of the Dissociative Experiences Scale (DES) in dissociative identity disorder. Dissociation 1995;8:229–235
17. Simeon D, Guralnik O, Gross S, et al. The detection and measurement of depersonalization disorder. J Nerv Ment Dis 1998;168:536–542
18. Waller NG, Putnam FW, Carlson EB. Types of dissociation and dissociative types: a taxometric analysis of dissociative experiences. Psychol Methods 1996;1:300–321
19. Spitzer RL, Williams JB, Gibbons M, et al. Structured Clinical Interview for DSM-III-R–Patient Version (SCID-P). New York, NY: Biometric Research, New York State Psychiatric Institute; 1989
20. First MB, Spitzer RL, Gibbon M, et al. Structured Clinical Interview for DSM-IV Axis I Disorders-Patient Version (SCID-IP, Version 2.0). New York, NY: Biometric Research, New York State Psychiatric Institute; 1995
21. Spitzer RL, Williams JBW, Gibbons M, et al. Structured Clinical Interview for DSM-III-R Personality Disorders (SCID-II). New York, NY: Biometric Research, New York State Psychiatric Institute; 1989
22. Pfohl B, Blum N, Zimmerman M. Structured Interview for DSM-IV Personality Disorders SIDP-IV. Iowa City, Iowa: Department of Psychiatry, University of Iowa; 1995
23. Sierra M, Berrios GE. The phenomenological stability of depersonalization: comparing the old with the new. J Nerv Ment Dis 2001;189:629–636
24. Simeon D, Guralnik O, Schmeidler J, et al. The role of childhood interpersonal trauma in depersonalization disorder. Am J Psychiatry 2001;158:1027–1033
25. Szymanski HV. Prolonged depersonalization after marijuana use. Am J Psychiatry 1981;138:231–233
26. Keshaven MS, Lishman WA. Prolonged depersonalization following cannabis abuse. Br J Addict 1986;81:140–142
27. Comfort A. Out-of-body experiences and migraine [letter]. Am J Psychiatry 1982;139:1379–1380
28. Waller NG, Ross CA. The prevalence and biometric structure of pathological dissociation in the general population: taxometric and behavior genetic findings. J Abnorm Psychol 1997;106:499–510
29. Jang KL, Paris J, Zweig-Frank H, et al. Twin study of dissociative experience. J Nerv Ment Dis 1998;186:345–351
30. Hunter E. Cognitive behavioural therapy for depersonalization disorder: preliminary findings from a small scale clinical trial. Presented at the 17th annual meeting of the International Society for the Study of Dissociation; Nov 12–14, 2000; San Antonio, Tex

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