

Validity and reliability of the Structured Clinical Interview for Depersonalization–Derealization Spectrum (SCI-DER)

Marco Mula
Stefano Pini
Simona Calugi
Matteo Preve
Matteo Masini
Ilaria Giovannini
Ciro Conversano
Paola Rucci
Giovanni B Cassano

Department of Psychiatry,
Neurobiology, Pharmacology
and Biotechnologies, University
of Pisa, Italy

Abstract: This study evaluates the validity and reliability of a new instrument developed to assess symptoms of depersonalization: the Structured Clinical Interview for the Depersonalization–Derealization Spectrum (SCI-DER). The instrument is based on a spectrum model that emphasizes soft-signs, sub-threshold syndromes as well as clinical and subsyndromal manifestations. Items of the interview include, in addition to DSM-IV criteria for depersonalization, a number of features derived from clinical experience and from a review of phenomenological descriptions. Study participants included 258 consecutive patients with mood and anxiety disorders, 16.7% bipolar I disorder, 18.6% bipolar II disorder, 32.9% major depression, 22.1% panic disorder, 4.7% obsessive compulsive disorder, and 1.5% generalized anxiety disorder; 2.7% patients were also diagnosed with depersonalization disorder. A comparison group of 42 unselected controls was enrolled at the same site. The SCI-DER showed excellent reliability and good concurrent validity with the Dissociative Experiences Scale. It significantly discriminated subjects with any diagnosis of mood and anxiety disorders from controls and subjects with depersonalization disorder from controls. The hypothesized structure of the instrument was confirmed empirically.

Keywords: depersonalization, derealization, mood disorders, anxiety disorders

Introduction

Depersonalization (DP) is defined as an experience in which the individual feels a sense of unreality and detachment from him/herself. DP is often associated with derealization (DR), which consists of an alteration in the perception of one's surroundings so that sense of the reality of the external world is lost. A perceived change in the size or shape of objects in the external world is common and people may be perceived as dead or mechanical. All of these feelings are egodystonic and the individual maintains grossly intact reality testing, meaning that the sufferer retains insight that these are subjective phenomena rather than objective reality (APA 2000).

The above definitions oversimplify conditions that in clinical practice mostly present as complex phenomena. DP may occur in healthy individuals (lasting only a few seconds), often under conditions of stress, fatigue, drug use, or sleep deprivation (Giesbrecht et al 2007) and has been described in a number of psychiatric conditions such as anxiety disorder (especially panic disorder), major depression, or bipolar disorder (Hunter et al 2004).

The depersonalization disorder (DPD) is currently classified, in the DSM-IV-TR, as a dissociative disorder (APA 2000), in which DP symptoms persist chronically and unremittingly. The essential feature of the dissociative disorders is a sudden, temporary alteration in the normally integrative functions of consciousness, identity, or motor behavior and DPD has been included among these disorders because the feeling of

Correspondence: Marco Mula,
Department of Psychiatry, Neurobiology,
Pharmacology and Biotechnologies,
University of Pisa, Via Roma, 67,
56100 Pisa, Italy
Tel +39 050 993 559
Fax +39 050 21 581

one's own reality, an important component of identity, is lost. However, it is important to acknowledge that while this may be true for some of the other dissociative disorders (ie, amnesia, fugue, or dissociative identity disorder), this is not true for DPD, being extremely chronic and subject to little fluctuation. Moreover, according to DSM-IV-TR criteria, symptoms of DP, even if recurrent and causing significant distress, do not allow a diagnosis of DPD, if they are secondary to any other mental illness or neurologic disturbances such as epilepsy or migraine. Finally, most researchers endorse the view that, in addition to ineffable feelings of unreality, DP also includes emotional numbing, heightened self-observation, changes in body experience (with the sensation of being an outside observer of one's body, or parts of one's body), distortions in the experiencing of time and space, changes in the feeling of agency (with automaton or robot-like experiences, a sensation of lacking control of one's actions), feelings of having the mind empty of thoughts, memories and/or images, an inability to focus and sustain attention and various types of sensory anesthesia (Lewis 1931; Mayer-Gross 1935; Sierra and Berrios 1998; Sierra and Berrios 2001; Simeon 2004; Sierra et al 2005; Simeon et al 2007).

In order to accommodate all these different manifestations, that are not unique only to DPD, we postulated a DP spectrum model that emphasizes soft signs and low-grade symptoms as well as a wide range of clinical and subsyndromal manifestations. Such a model may have important practical implications as we recently pointed out that DP symptoms may be of great value for prognosis and treatment of affective disorders (Mula et al 2007). This paper reports on the acceptability, validity and reliability of a new instrument to assess DP symptoms, the Structured Clinical Interview for Depersonalization-Derealization Spectrum (SCI-DER), in a mixed sample of patients with DPD, mood and anxiety disorders as compared to healthy controls.

Methods

Subjects

A consecutive sample of out-inpatients presenting for treatment at the Department of Psychiatry in Pisa, Italy, from September 2006 to September 2007 were invited to participate in the study. Eligible patients included new and continuing patients aged 18 years and over with affective disorders (mood and anxiety disorders) or depersonalization disorder (DPD). Exclusion criteria were severe medical illness, neurological diseases, or inability to participate because of the severity of psychiatric symptoms. Patients were compared with a sample

of unselected controls. Controls were university students and nonpsychiatric subjects.

The Ethics Committee of the Azienda Ospedaliera Universitaria of Pisa approved all recruitment and assessment procedures. Eligible subjects provided written informed consent after receiving a complete description of the study and having an opportunity to ask questions. Subjects were not paid for their participation.

Instruments

Diagnostic assessment

The diagnostic interview consisted of the administration of the Structured Clinical Interview for DSM-IV Axis-I disorders (SCID-I/P) (First et al 2002), the Dissociative Experiences Scale (DES) (Bernstein and Putnam 1986), the Body Sensation Questionnaire (Chambless et al 1984), and the SCI-DER. The diagnosis of DPD accorded to DSM-IV criteria. These assessments were conducted by psychiatrists and experienced nonphysician research clinicians who were trained in the use of the study instruments at the Department of Psychiatry of the University of Pisa.

Dissociative Experiences Scale

The DES is a lifetime 28-items self-rating questionnaire specifically developed as a screening instrument to identify subjects that are likely to have a dissociative disorder. DES showed to be valid with a good internal consistency and very good test-retest reliability (four weeks = 0.93; eight weeks = 0.90; one year = 0.78). Since its introduction, the DES has been used in hundreds of dissociation studies and different cut off scores have been proposed, 20 (Steinberg et al 1991), 25 (Draijer and Boon 1993), 30 (Carlson and Putnam 1993) (for a more detailed review see van Ijzendoorn and Schuengel 1996; Simeon et al 1998).

Body Sensation Questionnaire

The Body Sensations Questionnaire (BSQ) is a validated self-rating scale for the assessment of agoraphobic and panic symptoms. The instrument showed to be reliable and fared well on tests of discriminant and construct validity. This instrument was chosen to deal with views, occasionally expressed in the clinical literature, that DP may be related to anxiety (Roth 1959) and is frequently reported by patients with agoraphobia (Cassano et al 1989).

The Structured Clinical Interview for Derealization-Depersonalization Spectrum

The SCI-DER (see Appendix A) was developed at the Departments of Psychiatry, Neurobiology, Pharmacology,

and Biotechnologies of the University of Pisa by experienced psychiatrists. It includes 49 items exploring “presence” or “absence” of lifetime spontaneous symptoms of DP organized into four domains: (1) Derealization, (2) Somatopsychic depersonalization, (3) Autopsychic depersonalization, and (4) Affective depersonalization. Items responses are coded in a dichotomous way (yes/no) and total and domain scores are obtained by counting the number of positive answers. When DP symptoms occur during alcohol or drug intake, items are coded as negative. An initial version of the scale was piloted in patients with DPD and comments were also solicited from researchers with experience in scale construction. The information obtained guided the rephrasing of some questions.

The first domain, *Derealization*, encompasses all items referring to an altered experience of the external world, and corresponds to the DSM description of derealization. Such an experience is frequently described in terms of visual metaphors (eg, looking through the fog, a veil between you and the external world). The *Somatopsychic depersonalization* domain describes a variety of changes in body experience such as lack of body ownership feelings, feelings of disembodiment, which can range from a non-specific feeling of not being in the body to out-of-body experiences and autoscopic hallucinations. Somatosensory distortions, usually affecting the size of body parts, or feeling very light, and lack of body sensations or various types of sensory anesthesia (eg, hunger, thirst, and pain) are also present. The *Autopsychic depersonalization* domain includes the unfamiliarity of the self in terms of sensation of being an outside observer of one’s mental process, not being “in charge” of their own behavior or mental processes, the automaton-line experience and anomalous subjective recall (eg, the feeling that personal events happened long ago or had already happened, inability to evoke visual memories of people or places). The *Affective depersonalization* domain explores the patient’s loss of ability to imbue perceptions with emotional feelings but also comprises the loss of affection, pleasure, fear or disgust to situations previously avoided.

Items were derived starting from a review of the descriptive psychopathology of DP (Jaspers 1913; Lewis 1931; Mayer-Gross 1935; Roth 1959; Sierra and Berrios 1998, 2001; Simeon et al 2004; Mula et al 2007) which included also a validated instrument for DP, namely the Cambridge Depersonalization Scale (CDS) (Sierra and Berrios 2000). The SCI-DER has some overlap with the CDS but, differently, the CDS was developed to capture frequency and duration of DP experiences in a period

covering the last 6 months while the SCI-DER was designed to assess the presence/absence of DP experiences over the lifetime. In this regard, it is worth remarking that our instrument was designed not to be diagnostic, in fact the duration, clustering, and severity of symptoms requested to make a diagnosis according to DSM-IV cannot be determined. Thus, the SCI-DER cannot replace currently used psychiatric interviews, such as the Structured Clinical Interview for DSM-IV Dissociative Disorders-Revised (SCID-D-R) (Bremner et al 1993), but it allows the definition and recognition, together with the typical aspects of DPD, of a wider area of clinical manifestations.

In summary, the SCI-DER is aimed to complement the categorical diagnosis with a new dimensional approach that gives clinical significance to a number of manifestations that may play an important role in modifying the typical presentation of a psychiatric disorder, especially affective disorders, and interfere with treatment.

Statistical methods

Kuder-Richardson coefficient, a variant of the alpha coefficient (Nunnally and Bernstein, 1994), was used to test the internal consistency of domains and total score of the SCI-DER. Intraclass correlation coefficients (Bartko 1966; Shrout and Fleiss 1979) were calculated to check test-retest reliability and one-way random effects model was used. Landis and Koch (1977) criteria were used to characterize reliability levels as follows: 0–0.4 poor, 0.41–0.74 from fair to good, 0.75–1 excellent.

Convergent and divergent validity was analyzed using Pearson’s *r* correlation.

The scores of the SCI-DER domains were compared between clinical and control groups by using Mann-Whitney test. Analyses were carried out using SPSS version 15.0 for Windows (SPSS Inc. Chicago, IL, USA).

Results

Demographic and clinical characteristics of the study sample

Three hundred subjects participated in the study. Mean age was 41.8 ± 14.1 years, 61% were women and 39% men, 48.3% married, 5.3% separated or divorced, 43.3% never married, 44% had a high school diploma, 21% the University degree, 51% were employed. Of the assessed subjects, 258 had a DSM diagnosis of mood or anxiety disorder or DPD (Table 1) and control subjects were 42. Control subjects were significantly younger than those in the clinical sample (31.5 ± 9.6 vs 43.5 ± 14 $Z = 5.739$ $p < 0.001$) but the gender

Table 1 DSM-IV diagnoses in the clinical sample

	N = 258 (%)
Major depression	85 (32.9%)
Panic disorder	57 (22.1%)
Bipolar disorder II	48 (18.6%)
Bipolar disorder I	43 (16.7%)
Obsessive compulsive disorder	12 (4.7%)
Depersonalization disorder	7 (2.7%)
Generalized anxiety disorder	4 (1.5%)
Post-traumatic stress disorder	2 (0.8%)

distribution did not differ between the two groups (women 64.3% vs 60.5% Chi-square = 0.222 Fisher's 2-sided exact test $p = 0.734$).

There was no gender difference in SCI-DER total score (males = 14.3 ± 9.1 vs females = 16.4 ± 10.2 ; $t = -1.828$; $df = 298$; $p = 0.069$). There was a significant, though very weak, negative correlation with age ($r = -0.125$; $p = 0.031$).

Acceptability and reliability

The SCI-DER was administered in about 20 minutes and in one session to all subjects. No subject refused to undertake and complete the interview and the acceptability was extremely good.

Frequency of endorsement of SCI-DER items is shown in Table 2. Internal consistency for the total SCI-DER score and for three domains (Derealization, Somatopsychic depersonalization, and Autopsychic depersonalization) was excellent; for the domain "Affective depersonalization" the internal consistency was good (Table 3). Correlations between domains were all positive and significant, with Pearson's r ranging between 0.53 and 0.68 ($p < 0.001$).

To evaluate test-retest reliability of the SCI-DER, the questionnaire was re-administered to a subsample of 69 patients after 15–20 days. The intraclass correlation of the total SCI-DER score was $r = 0.88$ and that of the domains was $r = 0.79$ (Derealization), $r = 0.74$ (Somatopsychic depersonalization), $r = 0.87$ (Autopsychic depersonalization), $r = 0.74$ (Affective depersonalization).

Convergent and discriminant validity

Correlations with the DES, the DES subscale for depersonalization symptoms (DES dp/dr) and the BSQ scores were examined to assess the convergent and discriminant validity of the SCI-DER. Results indicate good concurrent validity of the instrument: a strong positive correlation was found between SCI-DER and DES ($r = 0.74$), SCI-DER and DES dp/dr ($r = 0.75$). The poor correlation between overall SCI-DER and BSQ ($r = -0.18$) supports the discriminant

Table 2 Frequency of endorsement of SCI-DER items in the clinical sample of patients with mood and anxiety disorders (G1) and healthy controls (G2)

N	ITEMS	G1	G2
34.	... that you were going through the motions of working while your mind was somewhere else?	0.80	0.88
40.	... that after listening to someone talk, you suddenly realized that you did not hear part or all of what was said?	0.80	0.88
37.	... that when in a new situation, you had been there before?	0.64	0.74
38.	... that when remembering a past event, it seemed so vivid it was as if you were reliving it?	0.63	0.45
26.	... that your behavior was out of control?	0.63	0.21
43.	... that your emotions were not in your control?	0.62	0.29
2.	... that you felt detached from your surroundings as if there were a veil between you and the outside world?	0.58	0.12
8.	... feeling strange as if you were cut off from the world?	0.57	0.14
48.	... that you are able to do things with amazing ease and spontaneity that would usually be difficult for you (for example, sports, work, social situations, etc.)?	0.52	0.45
36.	... as if things that you have recently done had taken place a long time ago, for example, something you did this morning feels as if it were done weeks ago?	0.45	0.36
1.	... that the outside world was strange and unreal?	0.45	0.19
6.	... of being in a familiar place but finding it unfamiliar and strange?	0.42	0.19
31.	... that there were moments of your life when you were very far away from what was happening to you?	0.41	0.40
47.	... that you were not frightened at all in a situation that you would normally find frightening or distressing?	0.41	0.26

(Continued)

Table 2 (Continued)

N	ITEMS	G1	G2
35.	... that you could not picture things in your mind, for example, the face of a close friend or a familiar place?	0.40	0.43
27.	... that you were so detached from your thoughts that they seemed to have a "life" of their own?	0.40	0.05
17.	... that you were not in charge of your movements, so that you felt "automatic" and mechanical as if you were a robot?	0.40	0.02
32.	... that you were a "detached observer" of yourself?	0.38	0.24
7.	... the feeling that you were living in a dream?	0.38	0.21
19.	... that you had lost some bodily sensations (eg, of hunger and thirst) so that when you ate or drank, it felt like an automatic routine?	0.35	0.12
46.	... that you did not feel any affection toward your family or close friends?	0.35	0.07
39.	... that after driving or riding in a car or bus or subway, you suddenly did not remember what happened during all or part of the trip?	0.34	0.36
30.	... that you were a little "spacey?"	0.34	0.12
44.	... that what you were looking at seemed "flat" or "lifeless?"	0.33	0.12
33.	... that you were a stranger to yourself or you did not recognize yourself in the mirror?	0.33	0.07
49.	... that you were detached from memories of things that happened to you as if you had not been involved in them?	0.32	0.24
10.	... that your body did not seem to belong to you?	0.31	0.00
22.	... that you were indifferent to the taste of food whether good or bad?	0.29	0.07
9.	... that familiar voices (including your own) sounded far away and unreal?	0.26	0.10
13.	... that your body was very light as if it were floating on air?	0.26	0.07
16.	... as if you were outside your body?	0.26	0.05
28.	... that one part of you did things while an observing part talked to you about them?	0.26	0.02
42.	... that you can turn off or detach from your emotions?	0.25	0.17
29.	... that you did not have any thoughts at all, so that when you spoke it felt as if your words were being uttered by a robot?	0.24	0.02
4.	... the feeling that other people, objects, and the world around you were not real?	0.23	0.05
45.	... that when you wept or laughed, you did not feel any emotions at all?	0.23	0.05
5.	... a feeling as if you were looking at the world through a fog so that people and objects appeared unclear?	0.22	0.00
12.	... that parts of your body were disconnected from the rest of your body?	0.21	0.02
11.	... that parts of your body did not seem to belong to you?	0.20	0.05
41.	Have you ever found yourself in a place, having no idea how you got there?	0.19	0.17
21.	... that you were able to ignore pain?	0.18	0.05
23.	... that you were indifferent to the smell of things whether good or bad?	0.16	0.07
15.	... that you could not properly feel objects that you touched because it felt as if it was not you touching them?	0.15	0.00
3.	... that objects around you looked small or far away?	0.14	0.05
18.	... that you had to touch yourself to make sure that you had a body or a real existence?	0.12	0.00
14.	... that your hands or your feet had become larger or smaller?	0.09	0.00
24.	... that, when a part of your body hurt, you felt detached from the pain, as if it were somebody else's pain?	0.09	0.00
20.	... that you were invisible?	0.06	0.02
25.	Have you ever purposely hurt, burned, or cut yourself in order to feel pain or make sure that you were real?	0.06	0.02

Table 3 Internal consistency (Kuder-Richardson coefficient) of domains of the SCI-DER

SCI-DER	# Items	KR-20
Domain I: Derealization	9	0.79
Domain II: Somatopsychic depersonalization	16	0.83
Domain III: Autopsychic depersonalization	16	0.82
Domain IV: Affective depersonalization	8	0.69
SCI-DER Total	49	0.92

Abbreviations:

validity. Table 4 shows the correlations between the SCI-DER domains and DES, DES dp/dr, and BSQ scores.

Relationship between depersonalization spectrum and depersonalization disorder

The clinical sample presented a median DES score (range) of 8.9 (0–82.1), a median DES-T of 5 (0–87.5), a median DES dp/dr of 11.4 (0–86.4) and a median BSQ of 3.9 (0–20). Healthy controls displayed a median DES score (range) of 4.3 (0–19.3), a median DES-T of 3.2 (0–16.25), a median DES dp/dr of 5.9 (0–20.9), and a median BSQ of 4 (0–19).

Patients with mood and anxiety disorders showed significantly higher SCI-DER total and domains scores as compared to control subjects. Moreover, DPD patients obtained significantly higher score on the overall SCI-DER and domains than the control group (Table 5). Patients with a positive screening for dissociative symptoms (DES > 25) showed higher SCI-DER total and domains scores as compared with those with a negative screening (Table 6).

All these data taken together indicated that all the domains of the SCI-DER discriminated subjects with dissociative symptoms from those without.

Discussion

This study provided evidence of the reliability and validity of the SCI-DER. The prevalence of DPD in our sample

is in line with that reported in the general population and slightly under that reported in clinical samples (Hunter et al 2004). However, the pattern of comorbidity presented by our patients with DPD is in keeping with current literature with the majority of patients being also diagnosed also panic disorder, one patients with major depression and one patients with a diagnosis of obsessive compulsive disorder (Baker et al 2003; Hunter et al 2004).

Available clinical instruments for DP symptoms include the Dixon's Depersonalization Scale (DDS) (Dixon 1963), the Jacobs and Bovasso's Depersonalization Scale (JBS) (Jacobs and Bovasso 1992), the Cambridge Depersonalization Scale (CDS) (Sierra and Berrios 2000) and the Depersonalization Severity Scale (DSS) (Simeon et al 2001). However, all of them were developed to measure severity of DP symptoms, in terms of frequency and duration, in a defined time frame (six to twelve months) and showed to be useful in monitoring treatment response (Sierra et al 2006). Conversely, the SCI-DER evaluates presence of DP symptoms in a lifetime perspective according to a dimensional spectrum model of psychopathology (Cassano et al 1998; Frank et al 1998; Cassano et al 2002).

Our data showed an excellent internal consistency of the SCI-DER (0.92) especially if compared to the other instruments such as the DDS (0.53–0.84), JBS (0.78–0.84), the CDS (0.89), and the DSS (0.59). Each DP spectrum domain correlated highly with the total score and removal of any item resulted in a lower KR-20 coefficient.

The convergent validity of the SCI-DER was examined using the DES because extensively used in studies of this area as a gold standard, thus allowing comparisons with other scales. In fact, the correlation with the total DES score was good (0.74), in line with or higher than that reported by the DDS (0.47), JBS (0.71), CDS (0.49), and DSS (0.59). The correlation with the DES subscale for DP symptoms (DES dp/dr) was also good (0.75), in line with or higher than that reported by the DDS (0.49), JBS (0.44), CDS (0.80), and

Table 4 Convergent and discriminant validity of the SCI-DER domains and total score as compared to the Dissociative Experiences Scale (DES), DES subscale for DP/DR symptoms (DES dp/dr) and the Body Sensation Questionnaire (BSQ)

SCI-DER	DES	DES dp/dr	BSQ
Domain I: Derealization	0.63	0.67	–0.16
Domain II: Somatopsychic depersonalization	0.63	0.65	–0.11*
Domain III: Autopsychic depersonalization	0.64	0.63	–0.20
Domain IV: Affective depersonalization	0.60	0.59	–0.14*
SCI-DER Total	0.74	0.75	–0.18

Notes: *Correlations are significant for $p < 0.05$; all others correlations are significant for $p < 0.001$.

Table 5 SCI-DER total and domains scores in patients with depersonalization disorder (DPD), the clinical sample of patients with mood or anxiety disorders (CS) and control subjects (HC) (median and interquartile range)

SCI-DER	DPD (n = 7)	CS (n = 251)	HC (n = 42)	DPD vs HC Z-test, p value (2-sided)	CS vs HC Z-test, p value (2-sided)
Domain I: Derealization	6.0 (4–8)	3.0 (0–9)	0 (0–6)	Z = 4.27, p < 0.001	Z = 4.95, p < 0.001
Domain II: Somatopsychic depersonalization	10.0 (3–13)	2.0 (0–14)	0 (0–3)	Z = 4.56, p < 0.001	Z = 5.71, p < 0.001
Domain III: Autopsychic depersonalization	11.0 (1–15)	7.0 (0–16)	5.0 (0–11)	Z = 2.29, p = 0.021	Z = 5.38, p < 0.001
Domain IV: Affective depersonalization	6.0 (1–7)	3.0 (0–8)	1.0 (0–5)	Z = 3.33, p < 0.001	Z = 2.65, p = 0.008
SCI-DER Total score	31.0 (12–38)	14.0 (0–44)	7.0 (0–21)	Z = 3.86, p < 0.001	Z = 3.91, p < 0.001

Abbreviations:

DSS (0.63). The SCI-DER showed good discriminant validity as measured with the BSQ. However, the negative correlation is of interest considering that DP symptoms seem to be present in patients with agoraphobia (Cassano et al 1989). Further studies in this area are needed.

The test-retest reliability of an instrument is a key psychometric property in clinical research. Test-retest reliability is unknown for DDS and JBS, while the SCI-DER showed an excellent stability of scores at 15–20 days with an intraclass correlation of the total SCI-DER of $r = 0.88$ and ranging between 0.74 and 0.88 for the individual domains. As for the CDS, the test-retest reliability is known only for the German version, being 0.89 at 10–14 days (Michal et al 2004).

The SCI-DER proved to be able to discriminate patients with any mental disorder from unselected controls and patients with DPD from controls (Table 5). The distribution of SCI-DER total and domains scores suggests a continuum of DP spectrum symptoms from healthy controls to DPD going through other mental illnesses. Indeed, it is important to restate that the SCI-DER was not developed to diagnose DPD but to investigate DP symptoms in the context of other

psychiatric diagnoses, in particular affective disorders. Our view is that an increased attention to this group of symptoms, rarely investigated in clinical settings, may have important clinical implications in terms of prognosis and treatment strategies (Mula et al 2007).

Our results need to be considered keeping in mind the following limitations. First, the small sample size of DPD patients did not allow us to carry out more detailed analyses, for instance comparison of symptom profiles between groups, a confirmatory factor analysis or a ROC analysis for specificity and sensitivity of the instrument. However, the SCI-DER was designed not for a diagnosis of DPD according to DSM-IV but to allow definition and recognition, together with the typical aspects of DPD, of a wider area of clinical manifestations in patients with mood and anxiety disorders. In summary, the SCI-DER is aimed to complement the categorical diagnosis with a new dimensional approach that gives clinical significance to a number of manifestations that may play an important role in modifying the typical presentation of a psychiatric disorder, especially affective disorders. Second, patients with DSM diagnoses of psychotic disorders

Table 6 SCI-DER total and domains scores in patients with and without a positive screening for dissociative symptoms (DES = 25) (median and interquartile range)

SCI-DER	DES ≥ 25 (n = 46)	DES < 25 (n = 212)	Z-test	p value (2-sided)
Domain I: Derealization	6 (0–9)	2 (0–9)	Z = 7.05	p < 0.001
Domain II: Somatopsychic depersonalization	7 (0–14)	2 (0–13)	Z = 6.38	p < 0.001
Domain III: Autopsychic depersonalization	11.5 (2–16)	6 (0–15)	Z = 7.08	p < 0.001
Domain IV: Affective depersonalization	5 (2–8)	2 (0–8)	Z = 6.95	p < 0.001
SCI-DER Total score	30 (10–44)	13 (0–38)	Z = 7.93	p < 0.001

Abbreviations:

were not assessed, because, in our opinion, DP symptoms, although similar in their phenomenology to those reported by patients with affective disorders, are different in nature and can be detected only in an early phase of the disease when the self is not disrupted. It is therefore evident that studies replicating our results in this patients' group are needed.

Overall, the SCI-DER proved to be a reliable and valid instrument to assess lifetime DP spectrum symptoms and our approach might help to identify specific phenotypes to be used in clinical, neurobiological, and genetic studies. Further investigations are warranted to clarify the potential utility of this approach in clinical practice and the temporal stability of SCI-DER scores in different clinical samples. Factor analyses of our instrument may further clarify the multifactor structure of DP and its complexity.

Disclosure

The authors report no conflicts of interest in this work.

References

- [APA] American Psychiatric Association. 2000. Diagnostic and statistical manual of mental disorders. 4th Ed. Washington, DC: American Psychiatric Association.
- Baker D, Hunter E, Lawrence E et al. 2003. Depersonalisation disorder: clinical features of 204 cases. *Br J Psychiatry*, 182:428–33.
- Bartko JJ. 1966. The intraclass correlation coefficient as a measure of reliability. *Psychol Rep*, 19:3–11.
- Bernstein EM, Putnam FW. 1986. Development, reliability, and validity of a dissociation scale. *J Nerv Ment Dis*, 174:727–35.
- Bremner JD, Steinberg M, Southwick SM, et al. 1993. Use of the Structured Clinical Interview for DSM-IV Dissociative Disorders for systematic assessment of dissociative symptoms in posttraumatic stress disorder. *Am J Psychiatry*, 150:1011–4.
- Carlson EB, Putnam FW. 1993. An update on the dissociative experiences scale. *Dissociation*, 6:16–27.
- Cassano GB, Frank E, Miniati M, et al. 2002. Conceptual underpinnings and empirical support for the mood spectrum. *Psychiatr Clin North Am*, 25:699–712.
- Cassano GB, Petracca A, Perugi G, et al. 1989. Derealization and panic attacks: a clinical evaluation on 150 patients with panic disorder/agoraphobia. *Compr Psychiatry*, 30:5–12.
- Cassano GB, Rotondo A, Maser JD, et al. 1998. The panic-agoraphobic spectrum: Rationale, assessment, and clinical usefulness. *CNS Spectr*, 3:35–48.
- Chambless DL, Caputo GC, Bright P, et al. 1984. Assessment of fear of fear in agoraphobics: the body sensations questionnaire and the agoraphobic cognitions questionnaire. *J Consult Clin Psychol*, 52:1090–7.
- Dixon JC. 1963. Depersonalization phenomena in a sample population of college students. *Br J Psychiatry*, 109:371–5.
- Draijer N, Boon S. 1993. The validation of the Dissociative Experiences scale against the criterion of the SCID-D, using receiver operating characteristic (ROC) analysis. *Dissociation*, 6:28–37.
- First MB, Spitzer RL, Gibbon M, et al. 2001. Structured Clinical Interview for DSM-IV-TR Axis I Disorders, Research Version, Patient Edition. (SCID-I/P). New York: Biometrics Research, New York State Psychiatric Institute.
- Frank E, Cassano GB, Shear MK, et al. 1998. The spectrum model: A more coherent approach to the complexity of psychiatric symptomatology. *CNS Spectr*, 3:23–34.
- Giesbrecht T, Smeets T, Leppink J, et al. 2007. Acute dissociation after 1 night of sleep loss. *J Abnorm Psychol*, 116:599–606.
- Hunter EC, Sierra M, David AS. 2004. The epidemiology of depersonalisation and derealisation. A systematic review. *Soc Psychiatry Psychiatr Epidemiol*, 39:9–18.
- Jacobs JR, Bovasso GB. 1992. Toward the clarification of the construct of depersonalization and its association with affective and cognitive dysfunctions. *J Pers Assess*, 59:352–65.
- Jaspers K. 1913. Allgemeine Psychopathologie. Berlin: Springer Verlag.
- Landis JR, Koch GG. 1977. The measurement of observer agreement for categorical data. *Biometrics*, 33:159–74.
- Lewis A. 1931. The experience of time in mental disorder. *Proc R Soc Med*, 25:611–20.
- Mayer-Gross W. 1935. On depersonalization. *Br J Med Psychol*, 15:103–26.
- Michal M, Sann U, Niebecker M, et al. 2004. Die Erfassung des depersonalisations-derealisationssyndroms mit der deutschen Version der Cambridge Depersonalisation Scale (CDS). *Psychother Psychosom Med Psychol*, 54:367–74.
- Mula M, Pini S, Cassano GB. 2006. The neurobiology and clinical significance of depersonalization in mood and anxiety disorders: A critical reappraisal. *J Affect Disord*, 99:91–9.
- Nunnally JC, Bernstein IH. 1994. Psychometric theory. 3rd Ed. New York: McGraw-Hill.
- Roth M. 1960. The phobic anxiety-depersonalization syndrome and some general aetiological problems in psychiatry. *J Neuropsychiatr*, 1:293–306.
- Shrout PE, Fleiss JL. 1979. Intraclass correlations: uses in assigning rater reliability. *Psychol Bull*, 86:420–8.
- Sierra M, Baker D, Medford N, et al. 2005. Unpacking the depersonalization syndrome: an exploratory factor analysis on the Cambridge Depersonalization Scale. *Psychol Med*, 35:1523–32.
- Sierra M, Baker D, Medford N, et al. 2006. Lamotrigine as an add-on treatment for depersonalization disorder: a retrospective study of 32 cases. *Clin Neuropharmacol*, 29:253–8.
- Sierra M, Berrios GE. 1998. Depersonalization: neurobiological perspectives. *Biol Psychiatry*, 44:898–908.
- Sierra M, Berrios GE. 2000. The Cambridge Depersonalization Scale: a new instrument for the measurement of depersonalization. *Psychiatry Res*, 93:153–64.
- Sierra M, Berrios GE. 2001. The phenomenological stability of depersonalization: comparing the old with the new. *J Nerv Ment Dis*, 189:629–36.
- Simeon D, Guralnik O, Gross S, et al. 1998. The detection and measurement of depersonalization disorder. *J Nerv Ment Dis*, 186:536–42.
- Simeon D, Guralnik O, Schmeidler J. 2001. Development of a Depersonalization Severity Scale. *J Trauma Stress*, 14:341–9.
- Simeon D, Kozin DS, Segal K, et al. 2008. De-constructing depersonalization: Further evidence for symptom clusters. *Psychiatry Res*, 157:303–6.
- Simeon D. 2004. Depersonalisation disorder: a contemporary overview. *CNS Drugs*, 18:343–54.
- Steinberg M, Rounsaville B, Cicchetti D. 1991. Detection of dissociative disorders in psychiatric patients by a screening instrument and a structured diagnostic interview. *Am J Psychiatry*, 148:1050–4.
- Van Ijzendoorn MH, Schuengel C. 1996. The measurement of dissociation in normal and clinical populations: Meta analytic validation of the dissociative experiences scale (DES). *Clin Psychol Rev*, 16:365–82.

Appendix A

Structured clinical interview for Depersonalization – Derealization Spectrum (SCI-DER)

Thank you for coming in to talk with me today. The interview we are going to do is focused on experiences that you may or may not have had in your life. We would like to know whether you have had these experiences at any time, even if it was a long time ago, when you were not under the influence of alcohol or drugs. There are several sections of the interview and it will take less than an hour to complete it. Do you have any questions before we start?

Domain I. Derealization

I'm going to ask you questions which refer to experiences that you may have had in the past or that you may be currently experiencing. They may have come on suddenly and unexpectedly or slowly and gradually.

Have you ever experienced just for a few seconds or for days or months...

- | | | |
|---|----|-----|
| 1. ... that the outside world was strange and unreal? | No | Yes |
| 2. ... that you felt detached from your surroundings as if there were a veil between you and the outside world? | No | Yes |
| 3. ... that objects around you looked small or far away? | No | Yes |
| 4. ... the feeling that other people, objects, and the world around you were not real? | No | Yes |
| 5. ... a feeling as if you were looking at the world through a fog so that people and objects appeared unclear? | No | Yes |
| 6. ... of being in a familiar place but finding it unfamiliar and strange? | No | Yes |
| 7. ... the feeling that you were living in a dream? | No | Yes |
| 8. ... feeling strange as if you were cut off from the world? | No | Yes |
| 9. ... that familiar voices (including your own) sounded far away and unreal? | No | Yes |

Domain II: Somatopsychic depersonalization

Have you ever felt just for a few seconds or for days or months...

- | | | |
|---|----|-----|
| 10. ... that your body did not seem to belong to you? | No | Yes |
| 11. ... that parts of your body did not seem to belong to you? | No | Yes |
| 12. ... that parts of your body were disconnected from the rest of your body? | No | Yes |
| 13. ... that your body was very light as if it were floating on air? | No | Yes |
| 14. ... that your hands or your feet had become larger or smaller? | No | Yes |
| 15. ... that you could not properly feel objects that you touched because it felt as if it was not you touching them? | No | Yes |
| 16. ... as if you were outside your body? | No | Yes |
| 17. ... that you were not in charge of your movements, so that you felt "automatic" and mechanical as if you were a robot? | No | Yes |
| 18. ... that you had to touch yourself to make sure that you had a body or a real existence? | No | Yes |
| 19. ... that you had lost some bodily sensations (eg, of hunger and thirst) so that when you ate or drank, it felt like an automatic routine? | No | Yes |
| 20. ... that you were invisible? | No | Yes |
| 21. ... that you were able to ignore pain? | No | Yes |
| 22. ... that you were indifferent to the taste of food whether good or bad? | No | Yes |
| 23. ... that you were indifferent to the smell of things whether good or bad? | No | Yes |
| 24. ... that, when a part of your body hurt, you felt detached from the pain, as if it were somebody else's pain? | No | Yes |
| 25. Have you ever purposely hurt, burned, or cut yourself in order to feel pain or make sure that you were real? | No | Yes |

Domain III: Autopsychic depersonalization

Have you ever felt just for a few seconds or for days or months...

- | | | |
|---|----|-----|
| 26. ... that your behavior was out of control? | No | Yes |
| 27. ... that you were so detached from your thoughts that they seemed to have a "life" of their own? | No | Yes |
| 28. ... that one part of you did things while an observing part talked to you about them? | No | Yes |
| 29. ... that you did not have any thoughts at all, so that when you spoke it felt as if your words were being uttered by a robot? | No | Yes |
| 30. ... that you were a little "spacey?" | No | Yes |
| 31. ... that there were moments of your life when you were very far away from what was happening to you? | No | Yes |
| 32. ... that you were a "detached observer" of yourself? | No | Yes |
| 33. ... that you were a stranger to yourself or you did not recognize yourself in the mirror? | No | Yes |
| 34. ... that you were going through the motions of working while your mind was somewhere else? | No | Yes |
| 35. ... that you could not picture things in your mind, for example, the face of a close friend or a familiar place? | No | Yes |
| 36. ... as if things that you have recently done had taken place a long time ago, for example, something you did this morning feels as if it were done weeks ago? | No | Yes |
| 37. ... that when in a new situation, you had been there before? | No | Yes |
| 38. ... that when remembering a past event, it seemed so vivid it was as if you were reliving it? | No | Yes |
| 39. ... that after driving or riding in a car or bus or subway, you suddenly did not remember what happened during all or part of the trip? | No | Yes |
| 40. ... that after listening to someone talk, you suddenly realized that you did not hear part or all of what was said? | No | Yes |
| 41. Have you ever found yourself in a place, having no idea how you got there? | No | Yes |

Domain IV: Affective depersonalization

Have you ever felt just for a few seconds or for days or months...

- | | | |
|--|----|-----|
| 42. ... that you can turn off or detach from your emotions? | No | Yes |
| 43. ... that your emotions were not in your control? | No | Yes |
| 44. ... that what you were looking at seemed "flat" or "lifeless?" | No | Yes |
| 45. ... that when you wept or laughed, you did not feel any emotions at all? | No | Yes |
| 46. ... that you did not feel any affection toward your family or close friends? | No | Yes |
| 47. ... that you were not frightened at all in a situation that you would normally find frightening or distressing? | No | Yes |
| 48. ... that you are able to do things with amazing ease and spontaneity that would usually be difficult for you (for example, sports, work, social situations, etc.)? | No | Yes |
| 49. ... that you were detached from memories of things that happened to you as if you had not been involved in them? | No | Yes |