

Brief report

De-constructing depersonalization: Further evidence for symptom clusters

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Abstract

Depersonalization disorder is defined in the DSM-IV-TR using a single symptom criterion, which does not do justice to the phenomenological complexity of the disorder. In 394 affected adults, the Cambridge Depersonalization Scale yielded five factors (numbing, unreality of self, perceptual alterations, unreality of surroundings, and temporal disintegration), put forth as symptom criteria for a better diagnosis of depersonalization disorder.

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1. Introduction

Depersonalization disorder is defined in the DSM-IV-TR by a single symptom description that is rather vague and lengthy: “persistent or recurrent experiences of feeling detached from, and as if one is an outside observer of, one’s mental processes or body (e.g., feeling [as if] one is in a dream).” Since the advent of the DSM-IV-TR, two large cohorts have described impressively consistent nosology for depersonalization disorder (Baker et al., 2003; Simeon et al., 2003a). However, this progress has not yet been reflected in more refined symptom descriptions, which would facilitate a more sensitive and accurate detection of the disorder.

Sierra and Berrios (2000) developed the Cambridge Depersonalization Scale (CDS), the most detailed mea-

sure available to describe and quantify depersonalization and derealization experiences. A first factor analysis of the CDS in 138 patients diagnosed with depersonalization disorder yielded four underlying dimensions: ‘Anomalous Body Experience,’ ‘Emotional Numbing,’ ‘Anomalous Subjective Recall,’ and ‘Alienation from Surroundings’ (Sierra et al., 2005). In this report, we aimed to test this model in a substantially larger sample, and to consider implications for diagnosing the disorder.

2. Methods

Participants were 394 individuals who completed an internet survey entitled “Depersonalization/Derealization Study,” approved by our institutional review board with a waiver of informed consent. Data were gathered in an anonymous fashion, whereby individuals applied for a password and subsequently completed the survey on

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the website where it was posted (National Organization for Drug-Induced Disorders). Participants were either self-referred to this website, or referred by a depersonalization informational website or by our institution's depersonalization research program. The survey first presented the DSM-IV-TR definitions of depersonalization and derealization, respectively: "an alteration in the perception or experience of the self so that one feels detached from, and as if one is an outside observer of, one's mental processes of body (e.g. feeling [as if] one is in a dream)," and "an alteration in the perception or experience of the external world so that it seems strange or unreal (e.g. people may seem unfamiliar or mechanical)." The survey then inquired of participants: "Do you currently have depersonalization/derealization?" Only individuals who responded "yes" to this question were instructed to proceed with the survey. The survey included 65 questions in total, aimed at investigating the demographic and clinical characteristics, illness course,

and treatment history of individuals whose chronic depersonalization was initially precipitated by drug ingestion versus not (unpublished data).

As part of the survey, participants completed the CDS (Sierra and Berrios, 2000), a comprehensive 29-item self-report scale inquiring about subjective experiences classically associated with the depersonalization syndrome. Each item is rated on two Likert scales that quantify frequency (range 0–4) and duration (range 1–6), yielding a total score ranging from 0 to 10. The total CDS score is the arithmetic sum of all items (range 0–290). The scale has high internal consistency (Cronbach's alpha 0.89), and has been found to effectively differentiate depersonalization disorder from temporal lobe epilepsy and anxiety disorders (Sierra and Berrios, 2000); a cutoff score of 70 yielded 75.5% sensitivity and 87.2% specificity. No other psychometric scales were administered in the survey.

Table 1

Pattern matrix of five extracted factors for the Cambridge Depersonalization Scale, listed in descending magnitude order of salient item loadings for each factor (loadings in bold indicate the factor onto which each scale item loaded)

Cambridge Depersonalization Scale items	Item scores		Numbing	Unreality of self	Perceptual alterations	Unreality of surroundings	Temporal disintegration
	Mean	SD					
7. Flavour of meals no longer gives a feeling of pleasure or distaste	2.8	3.4	0.83	0.00	0.16	0.01	-0.06
25. Smell of things no longer gives feeling of pleasure or dislike	2.5	3.4	0.77	-0.04	0.10	0.13	0.04
28. Unable to feel hunger or thirst	3.2	3.5	0.75	0.06	0.24	-0.11	0.22
9. No emotions felt when weeping or laughing	4.7	3.5	0.53	0.25	-0.14	0.16	0.19
18. Unable to feel affection towards family and friends	5.0	3.4	0.48	0.22	-0.21	0.17	0.29
22. Feeling detached from bodily pain	1.7	2.8	0.47	0.04	0.31	-0.10	0.32
6. Feeling of being a detached observer of oneself	5.9	3.2	-0.08	0.65	0.23	0.12	0.08
10. Feeling of not having any thoughts at all	5.1	3.4	0.32	0.63	-0.05	0.03	0.04
23. Feeling of being outside the body	4.0	3.4	-0.12	0.60	0.40	-0.04	0.11
24. Feeling mechanical and 'robotic' when moving	4.7	3.4	0.24	0.58	0.25	0.06	0.02
11. Own voice sounds remote and unreal	4.6	3.3	0.11	0.56	0.14	0.14	0.07
26. Detached from own thoughts like they have life of their own	5.1	3.5	0.22	0.45	-0.10	0.07	0.31
12. Feel like hands or feet becoming bigger or smaller	1.6	2.5	-0.03	-0.03	0.65	0.14	0.04
20. Unable to feel properly things touched with hands	2.9	3.4	0.26	0.12	0.60	0.18	-0.01
27. Urge to touch oneself to be reassured of body existence	2.9	3.2	0.25	0.25	0.49	-0.09	0.06
8. Body feels very light, as if it were floating on air	3.2	3.2	0.06	0.14	0.48	0.06	0.08
15. See oneself outside, as if looking in a mirror	1.5	2.4	-0.04	0.31	0.42	-0.13	0.30
13. Surroundings feel detached or unreal	7.2	3.1	-0.02	0.04	0.07	0.73	0.21
2. Things look flat, as if looking at a picture	5.2	3.7	-0.01	0.18	0.16	0.72	-0.11
17. When in a new situation, feeling as if it had happened before	3.3	2.8	0.00	0.08	0.21	-0.16	0.70
14. Recently done things feel as if they took place a long time ago	5.2	3.6	0.02	0.14	0.19	0.24	0.57
21. Unable to picture things in mind	3.5	3.6	0.21	-0.09	0.05	0.23	0.56
16. Personal memories feel as if one had not been involved in them	5.6	3.6	0.12	0.28	-0.11	0.22	0.55
1. Feeling unreal or cutoff from the world	6.9	2.7	0.05	0.41	0.08	0.48	-0.01
3. Body feels as if it didn't belong to oneself	4.4	3.3	0.03	0.48	0.54	0.14	-0.17
4. Not feeling frightened in normally frightening situations	3.6	3.3	0.31	0.23	0.06	0.15	0.12
5. Favorite activities no longer enjoyable	7.0	2.9	0.40	0.18	-0.12	0.43	-0.03
19. Objects look smaller or further away	3.2	3.4	0.11	-0.16	0.47	0.47	0.18
29. Previously familiar places look unfamiliar	4.0	3.4	0.33	-0.02	0.08	0.36	0.26

Items which did not saliently load are listed at the bottom of the table. Mean scores and standard deviations are provided for all 29 scale items.

3. Results

The survey was completed by 159 women and 235 men, with a mean age of 28.8 ± 10.2 years. The mean total CDS score was 120.0 ± 54.4 (range: 13–255), and 79% of participants had a CDS score above the recommended cutoff of 70. Scores for all individual CDS items are presented in Table 1.

3.1. Confirmatory factor analysis

A confirmatory factor analysis was conducted with Amos 7 (SPSS, 2006) using maximum-likelihood estimation. In line with the analysis of Sierra et al. (2005), we allowed factors to be correlated. The following four different fit indices were considered in order to evaluate how well Sierra et al.'s (2005) factor structure was able to describe the current data: the Bentler–Bonnet normed-fit-index (NFI), the comparative-fit-index (CFI), the goodness-of-fit index (GFI), and the root-mean-square error of approximation (RSMEA). Briefly, the fit is acceptable if NFI, CFI, and GFI are 0.90 or greater and RMSEA is 0.10 or less (see Watson, 2001; Finch and West, 1997). Our analytical approach yielded a NFI, CFI, GFI, and RSMEA of 0.79, 0.84, 0.84, and 0.08, respectively. Thus, the Sierra et al. (2005) factor structure failed to meet criteria for an acceptable fit for our data for all indices except for the RSMEA.

3.2. Exploratory factor analysis

Consequently, we conducted an exploratory factor analysis. Factors were extracted using a Promax oblique rotation with a kappa of 2 (SPSS for Windows version 14), as was used by Sierra et al. (2005). To belong to a factor, items were required to have salient loadings of at least 0.40, coupled with lesser loadings by at least 0.10 on all other factors. Five factors were extracted, based on Cattell's scree test, accounting for 55.8% of the total variance: 34.5% for factor 1, 7.2% for factor 2, 5.3% for factor 3, 4.6% for factor 4, and 4.2% for factor 5. Extracted communalities ranged from 0.32 to 0.72. Correlations between factors were modest, ranging from 0.09 to 0.28. Item loadings are presented in Table 1; six items did not load on any factor.

4. Discussion

Results indicate that the construct of depersonalization/derealization subsumes several dimensions not strongly related to each other. The first factor, labeled

“Numbing,” describes the blunting of affects, pain, and bodily drives such as hunger and thirst. This factor concurs with several neurobiological studies of depersonalization disorder that have demonstrated blunted emotional and autonomic indices (Phillips et al., 2001; Sierra and Berrios, 2002; Simeon et al., 2003b). The second factor, labeled “Unreality of Self,” captures the experience of detachment from the physical body, mind, thoughts, and actions. This factor is the most reminiscent of the DSM-IV-TR current description of depersonalization. The third factor, called “Perceptual Alterations,” encompasses sensory distortions in various modalities, including visual, tactile and somatosensory. Heightened perceptual aberrations in the absence of magical ideation have been previously demonstrated in depersonalization disorder (Simeon and Guralnik, 2004), and may relate to altered brain activation in sensory association cortical areas (Simeon et al., 2000; Blanke et al., 2005). The fourth factor, labeled “Unreality of Surroundings,” corresponds to the DSM-IV-TR description of derealization. The fifth factor, labeled “Temporal Disintegration,” describes a disturbance in the subjective experience of time and related imagery (Simeon et al., 2007).

The five factors in this substantially larger sample are quite similar to the four factors of the earlier analysis (Sierra et al., 2005), which comprised individuals diagnosed with depersonalization disorder. The main difference between the two factor analyses lies in that the factor labeled “Anomalous Body Experience” in the earlier study (Sierra et al., 2005) appears to have split up into two components, “Unreality of Self” and “Perceptual Alterations,” in the current study. This might in part explain why in the Sierra et al. (2005) analysis “Anomalous Body Experience” constituted the largest factor, followed by “Emotional Numbing,” whereas in the current analysis “Numbing” was the largest factor, followed by “Unreality of the Self” and “Perceptual Alterations.”

Although the survey nature of the current study precluded diagnostics, the CDS score reported by Sierra et al. (119.0 ± 58.9) was strikingly similar to ours, and application of the recommended CDS cutoff score suggests that the large majority of our sample was probably afflicted by depersonalization disorder. It is also possible that, since depression and anxiety were not diagnosed or quantified in the current study, they could be contributing to some of the differences; Sierra et al. (2005) excluded individuals with current major depression and reported that participants' depression scores contributed to the “Emotional Numbing” factor score.

In all, the current five factors appear to represent psychometrically valid, clinically meaningful, and possibly conceptually discrete underlying dimensions of the depersonalization syndrome. Therefore, these five symptom sets are well suited for a prospective field trial study using an adapted structured interview, in an effort to derive clinically useful polythetic diagnostic criteria for depersonalization disorder in light of the DSM-V.

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