

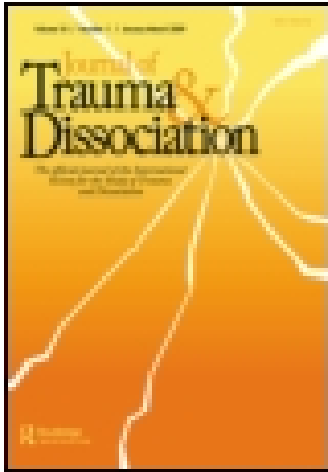
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Somatoform Dissociation in Depersonalization Disorder

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ABSTRACT. Along with psychoform dissociation, somatoform dissociation has been put forth as a core aspect of dissociative states, possibly as reliable as psychoform dissociation in the screening for dissociative disorders. The goal of this study was to investigate the prominence and correlates of somatoform dissociation in one of the major *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text rev.) dissociative disorders, depersonalization disorder (DPD). A total of 54 adults with DPD and 47 healthy control participants free of lifetime Axis I and II disorders were administered the 20-item Somatoform Dissociation Questionnaire (SDQ) as well as the Dissociative Experiences Scale, the Cambridge Depersonalization Scale, and

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the Childhood Trauma Questionnaire–Short Form. Somatoform dissociation scores were statistically significantly, but clinically only modestly, elevated in the DPD as compared to the healthy control group. SDQ items significantly elevated in the DPD group were mostly perceptual in nature. Depersonalization scores were significantly correlated with somatoform dissociation in the DPD group, whereas absorption and amnesia scores were not. With respect to childhood interpersonal trauma, although emotional abuse was significantly associated with depersonalization severity, none of the 5 categories of trauma were significantly associated with somatoform dissociation in the DPD group. In conclusion, somatoform dissociation is modest in DPD, and the SDQ is a weak instrument for the screening of dissociation in this disorder, detecting only one third of the sample when using the traditional SDQ cutoff score of 30.

KEYWORDS. Depersonalization, dissociation, somatoform dissociation, conversion, Somatoform Dissociation Questionnaire

INTRODUCTION

Dissociation can manifest in the form of mental phenomena such as disruptions of consciousness, perceptions, memory, or identity (Atchison & McFarlane, 1994); this form of dissociation has been labeled *psychological dissociation*, as opposed to *somatoform dissociation* (Nijenhuis, Spinhoven, Van Dyck, Van der Hart, & Vanderlinden, 1996). Somatoform dissociation involves a partial or complete disturbance in the ability to normally integrate somatoform components of experience, bodily reactions, and functions with no known organic physical pathology (Nijenhuis et al., 1999). The symptoms of somatoform dissociation may include sound distortions, site-specific pain, insensitivity to pain, the experience of the body disappearing, or changing preferences of smell and taste (Nijenhuis et al., 1996). Somatoform dissociation is characterized by dissociative symptoms that involve the body; it stands apart from general psychopathology and although it is associated with it, it is separable from psychological dissociation (Maaranen et al., 2005; Nijenhuis et al., 1996).

Descartes (1641/1994) began the modern discourse on the mind/body problem and proposed a dualist philosophy that included two separate realms of existence: the mental and the physical. He argued that the mind was completely distinct from the body and included a one-way interaction of the mind having the ability to affect the body, but not the other way

around. Somatoform dissociation was originally known as “hysteria,” originally conceptualized by Briquet in 1859 and Charcot in 1887/1888, involving disturbances in motor control and perception. Janet (1901, 1907) proposed that hysteria was essentially dominated by dissociative phenomena often occurring in reaction to psychological trauma, fatigue, or serious illness. Janet’s theory of dissociation hypothesized that both somatoform and psychological components of experience, functions, and reactions could lack sufficient integration within the personality. Dissociation was conceptualized as a mental process that affected both mind and body. Breuer and Freud (1895/1974) asserted that dissociation was involved in hysteria and believed it was induced by childhood sexual trauma. Freud (1905/1989, 1906/1952) eventually maintained that the etiology of hysteria was sexual fantasy and conceptualized somatoform hysterical symptoms as the conversion of unacceptable psychological conflicts into somatoform symptoms. It is interesting that the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; *DSM-IV*) categorizes somatoform manifestations of dissociation as “conversion,” classified under the somatoform disorders, while restricting dissociative disorders to “psychological” manifestations of dissociation. The fact that somatoform disorders are not conceptualized as dissociative disorders in the *DSM-IV-TR* (text revision) conceptually implies a separation of mind- versus body-related psychiatric conditions (Cardena & Nijenhuis, 2000; Nijenhuis, 2000).

The diagnostic groups that have been previously studied in relation to somatoform dissociation include dissociative identity disorder, mixed dissociative disorder samples consisting of dissociative disorder not otherwise specified (DDNOS) and depersonalization disorder (DPD) participants, somatoform disorders, epilepsy, pseudoseizures, eating disorders, adjustment disorders, anxiety disorders, major depressive disorder, bipolar disorder, and chronic pelvic pain (Nijenhuis, 2000). Of note, DPD has been studied only in conjunction with DDNOS in both Dutch and Turkish samples (Nijenhuis et al., 1996; Nijenhuis, Spinhoven, Van Dyck, Van der Hart, & Vanderlinden, 1998a, 1998b), whereas DPD has never been studied as a separate diagnostic category, rendering findings very difficult to interpret. The basic problem of studying DPD and DDNOS together is that the syndromes are clinically quite distinct: DDNOS is typically characterized by clinical presentations more similar to dissociative identity disorder but failing to meet full diagnostic criteria for the latter, whereas DPD is characterized by the absence of clinically significant amnesia and identity shifts.

DPD represents a particular type of dissociation involving a disrupted integration of self-perceptions, characterized by the subjective state of feeling estranged or disconnected from one's own being. It is often accompanied by derealization, which involves a sense of unfamiliarity or detachment from one's surroundings, people, or objects (Simeon, 2004). An association has been shown between DPD and childhood interpersonal trauma, in particular emotional abuse (Simeon, Guralnik, Schmeidler, Sirof, & Knutelska, 2001). In this study, we specifically examined somatoform dissociation in patients formally diagnosed with DPD as compared to healthy control participants. We hypothesized that the ability to normally integrate somatoform components of self-experience is essential to the experience of feeling connected to oneself and to the world, and therefore that chronic depersonalization would be associated with elevated somatoform dissociation. We also explored the relationships between the three major dissociative domains (absorption, amnesia, and depersonalization/derealization), childhood trauma, and somatoform dissociation.

METHOD

A total of 54 DPD and 47 normal control (NC) participants were included in the study. Participants were diagnosed with DPD via a standard clinical interview (Simeon, Knutelska, Nelson, & Guralnik, 2003) and the Structured Clinical Interview for Dissociative Disorders (Steinberg, 1994). NC participants were free of lifetime Axis I and Axis II psychiatric disorders as assessed by structured interviews for Axis I (First, Spitzer, Gibbon, & Williams, 1995) and Axis II (Pfohl, Blum, & Zimmerman, 1995) disorders. All participants provided written informed consent for research participation after a full explanation of the study.

Participants were administered the following self-report measures. The Dissociative Experiences Scale (DES) is a 28-item self-report measure of dissociative experiences that has been shown to have good test-retest reliability (0.79–0.96); high internal consistency (Cronbach's $\alpha = .95$); and strong convergent, discriminant, and criterion validity (Bernstein-Carlson & Putnam, 1986; Carlson & Putnam, 1993). Items are rated on a scale of 0% to 100%, and the total score is the mean of all 28 items. In addition to the total score, subscale scores are calculated for amnesia (Items 3, 4, 5, 6, 8, 10, 25, 26), absorption (Items 2, 14, 15, 16, 17, 18, 20, 22, 23), and depersonalization/derealization (Items 7, 11, 12, 13, 27, 28; Carlson et al., 1991).

The Cambridge Depersonalization Scale (CDS) is a self-administered questionnaire containing 29 items that capture both the frequency and duration of depersonalization symptoms. The scale has been shown to have good reliability and high internal consistency (Sierra & Berrios, 2000). The CDS was only completed by the DPD group.

The Somatoform Dissociation Questionnaire (SDQ, or SDQ-20) is a 20-item self-report instrument that measures the severity of somatoform dissociation. Items are rated on a 5-point Likert scale ranging from 1 (*not applicable*) to 5 (*highly applicable*), yielding a total score range of 20 to 100. All items are included in abbreviated form in Table 2. The scale is psychometrically sound, with high internal consistency (Cronbach's $\alpha = .96$) and good discriminant and criterion validity. Convergent validity is supported by high correlations with the Dissociation Questionnaire (DIS-Q), a 63-item self-report scale that measures psychological dissociation (Nijenhuis et al., 1996, Vanderlinden, Van Dyck, Vandereycken, & Vertommen, 1993). Mokken scale analysis has shown that the SDQ-20 items are strongly scalable (i.e., Loevinger coefficient of homogeneity = 0.56) on a latent unidimensional scale (Nijenhuis et al., 1998a, 1999).

The Childhood Trauma Questionnaire–Short Form is a 25-item self-administered screening measure for childhood interpersonal maltreatment history. Its five-factor structure includes emotional, physical, and sexual abuse, and emotional and physical neglect. The scale has good criterion validity (Bernstein et al., 2003).

Statistical analyses were conducted using SPSS. Independent sample *t* tests were used to compare scores between the two groups; comparison of individual SDQ items was Bonferroni-corrected for 20 comparisons ($p \leq .0025$). Within the DPD group, relationships between SDQ-20 scores and other variables were explored using Pearson's correlations.

RESULTS

Of the 54 participants with DPD, 25 (46.3%) were male and 29 (53.7%) were female, with a mean age of 31.1 years ($SD = 9.7$). Of the 47 NC participants, 23 (48.9%) were male and 24 (50.1%) were female, with a mean age of 31.9 years ($SD = 10.8$). There was no significant difference in age, $t(99) = 0.380$, $p = .70$; or gender, $\chi^2(1) = 0.70$, $p = .79$, between the two groups. In the DPD group, mean age of illness onset was 16.5 years ($SD = 8.9$), and mean duration of illness was 13.8 years

TABLE 1. DES, CTQ, and CDS scores in the DPD ($N = 54$) and NC ($N = 47$) groups.

Scale	DPD Group, $M (SD)$	NC Group, $M (SD)$	t	df	p
DES Total	29.1 (17.3)	2.8 (2.6)	10.34	99	<.001
Amnesia	10.8 (14.6)	1.0 (1.9)	4.57	99	<.001
Absorption	35.6 (22.6)	4.6 (4.1)	9.28	99	<.001
Depersonalization	44.0 (23.9)	0.8 (2.2)	12.32	99	<.001
CTQ Total ^a	42.5 (14.6)	34.4 (9.7)	3.13	95	.002
Physical Abuse	7.0 (3.2)	6.4 (2.7)	0.99	95	.325
Emotional Abuse	10.8 (5.1)	7.1 (2.7)	4.33	95	<.001
Physical Neglect	7.1 (3.0)	6.3 (2.1)	1.44	95	.154
Sexual Abuse	6.0 (2.8)	5.8 (2.1)	0.35	95	.726
Emotional Neglect	11.6 (5.0)	8.8 (3.7)	3.10	95	.003
CDS Total ^b	138.3 (61.6)				

Notes: DES = Dissociative Experiences Scale; CTQ = Childhood Trauma Questionnaire–Short Form; CDS = Cambridge Depersonalization Scale; DPD = depersonalization disorder; NC = normal control.

^aTwo participants from the DPD group and two participants from the NC group did not complete the CTQ.

^bThe CDS was only administered to the DPD group.

($SD = 12.3$). Table 1 presents dissociation and childhood trauma scores in the two groups.

Between-Group Comparisons in Somatoform Dissociation

The DPD group had a significantly elevated total SDQ-20 score ($M = 28.2$, $SD = 7.6$) compared to the control group ($M = 20.7$, $SD = 1.2$). Table 2 presents the raw scores and statistical comparisons for each of the 20 individual SDQ items; it can be seen that only 7 items differed between the two groups.

Relationships of SDQ to Other Measures in the DPD Group

SDQ-20 scores in the DPD group were not significantly correlated with participants' age, age of illness onset, or duration of illness. Table 3 presents the correlations between the SDQ total score and all other variables in the DPD group. Given the minimal variance in SDQ scores in the NC group, correlations with other variables were not meaningful and are not presented.

TABLE 2. Scores for the individual SDQ-20 items in the DPD ($N = 54$) and NC ($N = 47$) groups.

	SDQ-20 Item	DPD Group, <i>M</i> (<i>SD</i>)	NC Group, <i>M</i> (<i>SD</i>)	Comparison	
				<i>t</i>	<i>p</i>
1.	I have trouble urinating	1.2 (0.6)	1.0 (0.2)	1.67	.097
2.	I dislike tastes that I usually like	1.3 (0.8)	1.0 (0.2)	1.90	.060
3.	I hear sounds from nearby as if they were coming from far away	1.7 (1.0)	1.0 (0.2)	4.42	<.001*
4.	I have pain while urinating	1.1 (0.3)	1.0 (0.0)	2.17	.003
5.	My body, or a part of it, feels numb	2.0 (1.1)	1.2 (0.4)	4.63	<.001*
6.	People and things look bigger than usual	1.4 (0.7)	1.0 (0.0)	3.89	<.001*
7.	I have an attack that resembles an epileptic seizure	1.1 (0.4)	1.0 (0.0)	2.05	.043
8.	My body, or a part of it, is insensitive to pain	1.5 (0.9)	1.0 (0.1)	3.52	.001*
9.	I dislike smells I usually like	1.2 (0.8)	1.0 (0.1)	1.97	.052
10.	I feel pain in my genitals	1.2 (0.5)	1.1 (0.2)	1.27	.207
11.	I cannot hear for a while (as if I am deaf)	1.2 (0.4)	1.0 (0.2)	1.60	.111
12.	I cannot see for a while (as if I am blind)	1.1 (0.3)	1.0 (0.1)	0.71	.480
13.	I see things around me differently than usual	2.4 (1.4)	1.0 (0.0)	6.85	<.001*
14.	I am able to smell much better or worse than I usually do	1.6 (1.6)	1.0 (0.1)	2.53	.013
15.	It is as if my body, or a part of it, has disappeared	1.7 (1.3)	1.0 (0.0)	3.91	<.001*
16.	I cannot swallow, or swallow only with great effort	1.3 (0.6)	1.0 (0.1)	2.91	.004
17.	I cannot sleep for nights on end, but remain very active during daytime	1.5 (0.9)	1.1 (0.3)	3.03	.003
18.	I cannot speak, or I can only whisper	1.3 (0.7)	1.0 (0.1)	2.95	.004
19.	I am paralyzed for a while	1.1 (0.3)	1.0 (0.1)	1.52	.133
20.	I grow stiff for a while	1.4 (0.6)	1.0 (0.1)	3.42	.001*
Total		28.2 (7.6)	20.7 (1.2)	6.62	<.001

Notes: SDQ-20 = Somatoform Dissociation Questionnaire; DPD = depersonalization disorder; NC = normal control.

*Significant difference after Bonferroni correction for 20 comparisons.

DISCUSSION

The main findings of this study are as follows. Somatoform dissociation scores were statistically significantly elevated in the DPD group as compared to healthy controls, although this was clinically only a modest

TABLE 3. Correlations between the SDQ-20, DES, CDS, and CTQ in the depersonalization disorder group ($N = 54$).

Scale or Subscale	1	2	3	4	5	6	7	8	9	10	11	12
1. SDQ-20	—	.29*	.16	.26	.27*	.50**	.24	.12	.26	.27	.12	.12
2. DES		—	.93**	.80**	.74**	.64**	.46**	.38**	.42**	.27	.26	.38**
3. DES Absorption			—	.69**	.58**	.51**	.50**	.43**	.44**	.30*	.30*	.40**
4. DES Amnesia				—	.36**	.37**	.49**	.41**	.40**	.34*	.26	.41**
5. DES Depersonalization/ Derealization					—	.76**	.19	.13	.25	-.02	.09	.18
6. CDS						—	.20	.13	.33*	.03	.06	.10
7. CTQ							—	.82**	.88**	.68**	.45**	.85**
8. CTQ Physical Abuse								—	.77**	.43**	.26	.59**
9. CTQ Emotional Abuse									—	.38**	.28*	.67**
10. CTQ Physical Neglect										—	.28*	.59**
11. CTQ Sexual Abuse											—	.15
12. CTQ Emotional Neglect												—

Notes: SDQ = Somatoform Dissociation Questionnaire; DES = Dissociative Experiences Scale; CDS = Cambridge Depersonalization Scale; CTQ = Childhood Trauma Questionnaire—Short Form.

* $p < .05$.

** $p < .01$.

elevation. SDQ items that were significantly elevated in the DPD group were mostly perceptual in nature (visual distortions: Items 6 and 13, auditory distortions: Item 3, pain perception: Items 5 and 8, and somatosensory distortions, Item 15), with an additional single motoric symptom (Item 20). Depersonalization scores, especially as measured by the more detailed CDS, were significantly correlated with somatoform dissociation in the DPD group, whereas absorption and amnesia scores were not significantly associated with somatoform dissociation. With respect to childhood interpersonal trauma, although emotional abuse was significantly associated with depersonalization severity as measured by the CDS, none of the five categories of trauma were significantly associated with somatoform dissociation.

Therefore, the study's findings pose three important questions with respect to DPD and somatoform dissociation. First, is somatoform dissociation a true component of DPD, or is it an artifact of similar item content between the DES/CDS and the SDQ? Second, is the type and severity of childhood maltreatment associated with particular dissociative disorders also related to the likelihood of manifesting somatoform dissociation? Third, if the SDQ were to be used as a general screening tool for the detection of dissociative disorders, what is its usefulness in screening for DPD?

The item content of the DES and SDQ is important to consider. A careful descriptive comparison of all items of the two scales revealed that one item of the SDQ is essentially identical to one item in the DES, and two other items are similar. The SDQ item "My body, or a part of it, is insensitive to pain" is essentially identical to the DES item "Some people find that they sometimes are able to ignore pain." The SDQ item "I see things around me differently than usual" is similar to the DES item "Some people feel as if they are looking at the world through a fog, so that people or objects appear far away or unclear." Likewise, the SDQ item "It is as if my body, or a part of it, has disappeared" is similar to the DES item "Some people have the experience of feeling that their body does not seem to belong to them." With respect to the CDS, nine items appear to notably overlap in content with items of the SDQ. Such item overlap reflects a conceptual issue in understanding somatoform versus psychoform dissociation: Should perceptual distortions be considered somatoform or psychoform in nature, and are the two even distinguishable? Psychological and somatoform dissociation are strongly associated in some studies (r range = .62–.85; Nijenhuis, 2000; Nijenhuis et al., 1999), whereas Waller, Hamilton, Elliott, and Lewendon (2000) reported a somewhat lower but still large effect size correlation (r = .51), suggesting

that psychoform and somatoform dissociation are strongly related but distinguishable constructs.

Next we turn to the relationship between particular types of childhood maltreatment and somatoform dissociation. In this study, emotional abuse and neglect were the only two forms of child maltreatment that were significantly elevated in DPD compared to healthy volunteers, consistent with previous literature in which depersonalization severity, but not overall dissociation severity, was uniquely predicted by emotional abuse scores (Simeon et al., 2001). Furthermore, emotional abuse was significantly associated with DES but not SDQ scores. Consistent with this finding, Waller et al. (2000) reported that psychoform dissociation was associated with noncontact trauma, whereas somatoform dissociation was related to the severity of reported childhood trauma involving physical contact or injury. Similarly, Nijenhuis, Van der Hart, Kruger, and Steele (2004) found that emotional abuse and neglect did not predict somatoform dissociation when there was no report of interpersonal threat to the body. These findings have been corroborated by other studies that have also found a strong association between trauma involving bodily threat and somatoform dissociation (Nijenhuis et al., 1998b, 1999). A population-based study of adverse childhood experiences reported that high somatoform dissociation was strongly linked to physical punishment in both genders (Maaranen et al., 2004). According to this hypothesis, somatoform dissociation scores would not be expected to be elevated in DPD and could be attributed primarily to content overlap between psychoform and somatoform dissociation measures and definitions, as discussed above, especially surrounding the domain of perceptions.

In order to tease out the relationship of the various dissociative domains to somatoform dissociation in this study, we examined amnesia, absorption, and depersonalization/derealization scores separately in relation to somatoform dissociation. Nijenhuis et al. (1996) reported that the correlation between the SDQ-20 and the DIS-Q absorption scale was moderate ($r = .46, p < .001$), whereas the correlation with the DIS-Q amnesia scale was high ($r = .71, p < .001$), interpreting this finding to mean that absorption is a lesser core characteristic of pathological dissociation than other factors measured by the DIS-Q and the SDQ-20. In our sample of DPD participants, neither amnesia nor absorption were significantly correlated with SDQ scores, possibly reflecting the fact that in patients with pure depersonalization/derealization, other dimensions of dissociation are not as prominent or pathological.

Nijenhuis (2000) reviewed the literature and highlighted significantly elevated SDQ-20 scores for the combined diagnostic categories of DDNOS/DPD in various Dutch and Turkish samples. SDQ-20 scores for DDNOS/DPD have ranged from 43.0 to 46.3, markedly higher than our pure DPD group score of 28.2. As just stated, in previous studies of somatoform dissociation, DPD was examined only in conjunction with a diagnosis of DDNOS (Nijenhuis et al., 1996, 1998a, 1999) rather than as a discrete diagnostic category, rendering the findings uninterpretable with respect to DPD. In four Dutch and Turkish studies (Nijenhuis et al., 1999), the mean SDQ score of the mixed DPD/DDNOS samples was 44.4, suggesting that these samples were primarily composed of individuals with dissociative psychopathology more severe and complex than DPD. The mean SDQ-20 score for dissociative identity disorder across three samples and five studies was 54.7 (Nijenhuis, 2000). The mean SDQ score for a somatoform disorders Dutch sample (Nijenhuis et al., 1999) was 31.9. The SDQ-20 total score in our sample was closest to those of samples of participants with eating disorders ($M = 27.7$; Nijenhuis et al., 1999), anxiety disorders ($M = 26.8$; Nijenhuis, 2000; Nijenhuis et al., 1999), and major depression ($M = 28.7$; Nijenhuis, 2000; Nijenhuis et al., 1999).

Finally, the reliability of the SDQ-20 as a screening instrument for dissociation comparable to the DES merits consideration in light of the DPD findings of this study. When the entire gamut of dissociative symptoms is considered, DPD can be conceptualized as lying at the less extreme end of the dissociative spectrum, characterized by only modestly elevated scores on the widely used DES. A cutoff score of 30 was recommended by Maaranen et al. (2004) and Sar, Kundakci, Kiziltan, Bakim, and Bozkurt (2000) for the detection of significant somatoform dissociation. The range for normal scores has been reported to be 23.8 for men and 23.4 for women (Nijenhuis et al., 1996). If a cutoff score of 30 were to be used, then the SDQ would only have a 33.3% sensitivity in detecting pathological dissociation in the current DPD sample. This is a problem similar to that of using the DES total score for screening DPD: We have previously shown that the traditionally recommended DES cutoff scores of 20 or 30 detect only 50% to 23% of all cases, respectively, whereas a very low cutoff of 12 is required to attain 80% sensitivity (Simeon et al., 1998). The DES taxon is more useful in screening for DPD, as in one sample of 100 DPD participants approximately two thirds had a very high probability of belonging to the taxon, and a taxon cutoff score of 13 yielded 81% sensitivity in detecting the disorder (Simeon, Knutelska, Nelson, Guralnik, & Schmeidler, 2003).

In addition to the SDQ-20, Nijenhuis has developed the SDQ-5 to be used as a briefer dissociative disorders screening instrument (Nijenhuis, 2000; Nijenhuis et al., 1998b), suggesting that the SDQ-5 is a very good screening instrument for dissociative disorders and may even detect dissociative disorders more effectively than the DES. The sensitivity of the SDQ-5 in Dutch/Flemish samples ranged from 89% to 94%, and the specificity ranged from 93% to 98%. The mean positive predictive value was 66% when corrected for a prevalence rate of 10% (Nijenhuis, 2000). Of the five items included in the SDQ-5 (pain while urinating, body insensitivity to pain, seeing things differently than usual, body disappearing, and inability to speak), three items were significantly elevated in the DPD group compared to control group. The total SDQ-5 score of the DPD group was 8.02 ($SD = 2.94$), significantly higher than that of the control group ($M = 5.04$, $SD = 0.20$). In the current DPD sample, 30% of participants did not show any elevation on the SDQ-5 (total score = 5); even an extremely low cutoff score of 6 would detect only 70% of the sample.

CONCLUSION

Somatoform dissociation does not appear to be a core component of DPD. Modest elevations in the most widely used somatoform dissociation scale appear to be best accounted for by phenomenological overlap between the constructs of depersonalization and somatoform dissociation as currently defined, giving rise to the important conceptual question of whether, and under what conditions, sensory distortions should be considered psychoform versus somatoform in nature. If the SDQ-20 or the SDQ-5 were to be used for the screening of DPD, their sensitivities would be unsatisfactory.

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