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Research Paper

The role of fearful attachment in depersonalization disorder

Daphne Simeon*, Margaret Knutelska

Department of Psychiatry, Mount Sinai School of Medicine, 275 Central Park West, Suite 1A, New York, N.Y., United States



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ABSTRACT

This study's goal was to systematically investigate attachment styles in Depersonalization Disorder (DDD), and their relationship to dissociation severity and childhood trauma history. Forty-two participants with DSM-IV DDD and 53 healthy controls (HC) without lifetime Axis I and II disorders were administered the Relationships Questionnaire and the Relationship Scales Questionnaire, based on Bartholomew's anxiety-avoidance orthogonal model of secure, dismissive, preoccupied, and fearful attachment; the Dissociative Experiences Scale; and the Childhood Trauma Questionnaire. DDD was characterized by a significantly higher prevalence of insecure attachment (66.7%) compared to controls (34.0%), largely accounted for by fearful attachment (45.2% of all DDD participants). In the DDD group, of the four attachment styles only fearful was predictive of both normative and pathological dissociation, accounting for 17% - 18% of the variance. Childhood maltreatment made a significant hierarchical contribution to the prediction of dissociation beyond fearful attachment, and the effect of fearful attachment on dissociation was indirectly mediated by childhood trauma. In the control group, dissociation was predicted by fearful attachment but was not associated with childhood trauma. Implications of the findings are discussed, highlighting the potentially important role of trauma-based relational fear in this dissociative disorder.

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Introduction

Fearful/disorganized attachment is associated with psychopathology in general (Cassidy, Shaver, Allen, Allison & Azis-Clauson, 2018), and specifically with dissociative conditions. Two longitudinal studies have established that disorganized attachment in early life, stemming from the "hidden" relational trauma of maternal psychological unavailability in infancy, is a powerful predictor of dissociation in adulthood. Carlson (1998) found a high prevalence of disorganized attachment in high-risk infants, which in turn predicted 17% of the variance in adolescent dissociation. In this Minnesota study, pathological dissociation in young adulthood was significantly predicted by both early maternal unavailability and by disorganized attachment, accounting for 19% and 6% of the variance respectively (Ogawa, Sroufe, Weinfield, Carlson & Egeland, 1997). In the second longitudinal study known as the Harvard study, dissociation in young adulthood was significantly predicted by quality of early maternal care (50% of variance); childhood emotional abuse added a significant 9% to the variance, while infant disorganization did not contribute to the prediction (Dutra, Bureau, Holmes, Lyubchik & Lyons-Ruth, 2009). In a comparison and reflection on the Minnesota and Harvard studies, Lyons-Ruth, Dutra, Schuder and Bianchi (2006) concluded that both studies concurred that early maternal care, and in particular errors in

communication, was the most powerful predictor of later dissociation, versus infant disorganization per se. Though errors in communication are relatively invisible, they are at the core of the early caretaker-infant intersubjective field and emotional maltreatment (Hennighausen & Lyons-Ruth, 2005).

Cross-sectionally, community and clinical adult studies have examined relationships between attachment, childhood trauma, and dissociation. Farina, Liotti and Imperatori (2019) delineated a dimension of psychopathology linked to both trauma and dissociation as the "traumatic-dissociative" dimension and highlighted the prominent role of attachment trauma within it. Riggs et al. (2007) reported that unresolved trauma on the Adult Attachment Interview was uniquely associated with dissociation and PTSD, but not personality disorder, scores. Zdankiewicz-Scigala and Scigala (2018) found that dissociation plus alexithymia significantly mediated the relationship between attachment intimacy and alcohol addiction scores. In a female college sample assessed for physical and sexual abuse, only fearful attachment uniquely predicted dissociation, accounting for 7% of pathological dissociation variance; trauma and trauma-attachment interactions did not contribute to the prediction (Sandberg, 2010). In a large community sample, a highly significant relationship was found between dissociation and both fearful and preoccupied attachment, but not secure or dismissive attachment (Schimmenti, 2016). Kong et al. (2017) studied psychiatric outpatients in a specialized trauma clinic and reported that the relationship between childhood trauma and dissociation was fully mediated by attachment anxiety.

* Corresponding author.

E-mail address: daphnesimeon@gmail.com (D. Simeon).

In a community adult sample analyzed for moderation and mediation effects, self-concept clarity and reflective functioning moderated the mediating effect of self-reported disorganized attachment on the prediction of dissociation resulting from childhood abuse (Paetzold & Rholes, 2021). Importantly for adult studies using self-report attachment measures, Paetzold, Rholes and Andrus (2017) showed that a self-report measure of adult disorganization significantly predicted dissociation in a community sample with a large effect size, even after anxiety, avoidance and childhood maltreatment were controlled for.

Concerning specific dissociative disorders, a high prevalence of fearful / disorganized attachment has been found in more “severe” dissociative disorders such as Dissociative Identity Disorder (DID) (McFadden, 2011). However, attachment has not been examined to date in Depersonalization Disorder (DDD). DDD comprises one of the major dissociative disorders, characterized by subjective experiences of unreality regarding oneself and/or surroundings in the presence of intact reality testing, and has a prevalence of 1% – 2% in the general population. The role of childhood maltreatment, in particular emotional abuse, has been previously reported in DDD (Simeon, Guralnik, Schmeidler, Sirof & Knutelska, 2001). Coe, Dalenberg, Aransky and Reto (1995) reported a strong association between depersonalization and fearful attachment in a nonclinical college sample, predicted by childhood physical abuse (the only trauma examined); 40% of students with a “depersonalization profile” had a fearful attachment style. In a mixed nonclinical and chronic pain patient sample, Michal et al. (2007) found that depersonalization severity was positively associated with emotional maltreatment and negatively with mindfulness; attachment was not examined. Similarly, Thomson and Jaque (2018) examined a nonclinical sample and found that participants with clinical levels of depersonalization had significantly more childhood emotional abuse and neglect than the remaining sample. In a young adult community sample, childhood emotional maltreatment, but not physical or sexual abuse, accounted for 44% of variance in depersonalization scores, and depersonalization significantly mediated the relationship between childhood emotional maltreatment and adulthood psychological distress; attachment was not examined (Laoide et al., 2018).

Therefore, the purpose of this study was to investigate, for the first time, attachment patterns in DDD. Our central hypothesis was that, based on earlier findings and the dissociative nature of this disorder, insecure attachment, in particular fearful, would be prevalent and predictive of dissociation severity. We also aimed to explore the interplay of attachment and childhood maltreatment in determining dissociative symptomatology.

Methods

Subjects

We recruited adults with DSM-IV Depersonalization Disorder (DDD) and healthy control participants (HC), age 18 – 60. Exclusion criteria for the DDD group were current major depressive disorder, eating disorder and substance use disorder, as well as lifetime post-traumatic stress disorder, psychotic disorders and bipolar I disorder. Participants were recruited via community advertisements. Exclusion criteria for the HC group were any lifetime DSM-IV Axis I or II disorder. Potential participants were assessed by the Structured Clinical Interview for DSM-IV Dissociative Disorders (Steinberg, 1994), the Structured Clinical Interview for DSM-IV Axis I Disorders (First, Spitzer, Gibbon & Williams, 2002), and the Axis II Structured Interview for DSM-IV Personality Disorders (Pfohl et al., 1995); those who met inclusion criteria were eligible for participation. The study was approved by the institutional review board and all participants signed written informed consent.

Procedures

Participants were administered four self-report scales. Two attachment questionnaires were used, based on Bartholomew and Horowitz's (1991) two-dimensional (anxiety, avoidance) four-category (secure, preoccupied, dismissive, fearful), model. The Relationship Questionnaire (RQ) (Bartholomew & Horowitz, 1991) is a forced-choice instrument in which the four styles of attachment are described in brief paragraphs, and participants are asked to select the one paragraph that best describes them. The Relationship Scales Questionnaire (RSQ) (Griffin & Bartholomew, 1994) is a 30-item questionnaire rated on a 5-point scale and provides dimensional scores for the four attachment styles; Cronbach's α values range from 0.69 to 0.86. Despite their different formats, correlations between the RQ and the RSQ are high (Griffin & Bartholomew, 1994). Fraley and Waller (1998) recommended that researchers shift their focus from categorical assessments of attachment types that yield a single categorical score to graduated assessments of attachment styles that yield multiple continuous scores. Accordingly, in this study the RQ was used only as a categorical measure of prevalence, while the RSQ was used in all other analyses.

The Dissociative Experiences Scale (DES) (Bernstein & Putnam, 1986) is a widely used validated 28-item questionnaire which measures the frequency of dissociative experiences in 10% increments, ranging from 0 to 100; total score is calculated as the mean of the 28 items. In addition to the total score which reflects normative dissociation, a pathological dissociation score has been taxometrically derived from the DES, consisting of 8 amnesia, depersonalization / derealization, and identity alteration items; score is calculated as the mean of these 8 items (Waller, Putnam & Carlson, 1996).

The Childhood Trauma Questionnaire (CTQ) (Bernstein & Fink, 1998) is a well-validated and widely used 25-item questionnaire rated on a 5-point scale which measures five categories of childhood maltreatment. In addition to dimensional scoring, the CTQ can be used as a categorical measure of clinically significant trauma via validated cutoff scores for the 5 trauma categories (8 for sexual abuse, physical abuse, and physical neglect; 10 for emotional abuse; and 15 for emotional neglect). Individuals meeting the cutoff for at least one trauma category are classified as maltreated (Walker et al., 1999).

Statistical analyses

Attachment style prevalence was calculated by the RQ. Independent sample t-tests and chi-square tests were used to compare the two groups in attachment, dissociation, and childhood trauma measures. Within each group, Pearson's zero-order correlations were calculated between attachment, dissociation, and trauma variables. Hierarchical linear regressions were used to examine the prediction of dissociation by attachment style and childhood trauma. To examine mediation effects, Hayes' PROCESS macro add-on version 3.5.3 for SPSS was used (Hayes, 2013). Direct and indirect effects were calculated using Model 4, with 95% confidence intervals and 5000 bootstrapped samples. All analyses were conducted with SPSS version 24 and were two-tailed.

Results

Demographic characteristics

There were 42 DDD and 53 HC participants. The two groups did not differ in age (DDD: 31.81 (*SD* 10.02), HC 32.42 (*SD* 10.62); $t(93) = 0.28, p = .78$) or gender (female: DDD 23, HC 24; $\chi^2(1, N = 95) = 0.84, p = .36$). The two groups did not differ in marital status ($\chi^2(3, N = 95) = 5.05, p = .17$) or employment ($\chi^2(4, N = 95) = 5.92, p = .21$).

Group comparisons

Table 1 presents between-group comparisons in categorical attachment style and maltreatment status Table 2. presents between-group comparisons in dimensional measures of attachment, dissociation, and childhood trauma.

DDD group: Interrelations of attachment, dissociation, and childhood trauma

Within-group zero-order correlations between attachment, dissociation, and childhood trauma scores are presented in Table 3; it can be seen that fearful attachment was significantly associated with emotional abuse and neglect, and with physical neglect. Hierarchical regression analyses were performed to determine the prediction of dissociation by attachment style (Block 1: RSQ four attachment styles entered stepwise) and childhood trauma (Block 2: CTQ total score). The attachment variables were entered in the first block as attachment style forms in the first three years of life, whereas reported childhood maltreatment relies on autobiographical memory starting at age 3 or later. Dissociation severity (DES) was significantly predicted by fearful attachment alone in Block 1 ($F(1,40) = 8.66, p = .005, R^2 = 0.18, B = 0.95$), with an additional significant contribution by childhood maltreatment in Block 2 ($F \text{ change}(2,39) = 10.04, p = .003, R^2 \text{ change} = 0.17, B = 0.50$). Similarly, pathological dissociation severity (DES taxon) was significantly predicted by fearful attachment ($F(1,40) = 6.04, p = .018, R^2 = 0.13, B = 0.96$), with a marginally significant additional contribution by childhood maltreatment ($F \text{ change}(2,39) = 4.03, p = .05, R^2 \text{ change} = 0.08, B = 0.33$). Lastly, mediation analyses were performed to examine the direct versus indirect (mediated by the CTQ) effect of fearful attachment on dissociation severity. For both DES and Taxon, only the indirect effect was significant (1.1876, CI [.3928 – 2.2920] and 0.7886, CI [.0263 – 0.18241] respectively).

HC group: Interrelations of attachment, dissociation, and childhood trauma

Within-group zero-order correlations between attachment, dissociation, and childhood trauma scores are presented in Table 3. Hierarchical regression analyses were performed as described above for the DDD group. Dissociation severity (DES) was significantly predicted by fearful attachment in Block 1 ($F(1,51) = 6.05, p = .017, R^2 = 0.11, B = 0.25$), with no significant additional contribution by childhood maltreatment in Block 2 ($B = 0.00$). Similarly, pathological dissociation severity (DES taxon) was significantly predicted only by fearful attachment ($F(1,51) = 13.83, p < .001, R^2 = 0.21, B = 0.39$) with no additional contribution by childhood maltreatment ($B = 0.02$). Mediation analyses revealed for both the DES and the Taxon, only the direct effect of fearful attachment on dissociation severity was significant (0.2527, CI [.0395 – 0.4659] and 0.1970, CI [.0590 – 0.3350] respectively).

Discussion

DDD was characterized by a significantly higher prevalence of insecure attachment (66.7%) compared to healthy controls (34.0%), largely accounted for by fearful attachment (45.2% of all DDD participants). Dismissive attachment did not differ between the two groups, whereas preoccupied attachment was greater in the DDD group when measured dimensionally but not categorically. Notably, preoccupied attachment was not significantly correlated with either normative or pathological dissociation in the DDD group, though it was in the HC group. Furthermore, fearful attachment was strongly predictive of both normative and pathological dissociation in both groups (r range 0.33 to 0.42), accounting for 13% – 21% of the variance, whereas the other three attachment styles did not contribute to the prediction of dissociation severity (stepwise entry in Block 1 of hierarchical regressions).

As expected, childhood trauma was significantly elevated in the DDD group, both categorically and dimensionally, mainly for emotional maltreatment (abuse and neglect), in accordance with an earlier study of childhood trauma in DDD which used an interview trauma assessment assessing emotional abuse but not emotional neglect (Simeon et al., 2001). In the DDD group, all five trauma categories were significantly correlated with normative dissociation, while pathological dissociation was significantly correlated only with emotional maltreatment, again highlighting the centrality of the latter in this disorder. The role of emotional maltreatment in depersonalization has also been shown in samples not diagnosed with the disorder per se (Laoide, Egan & Osborn, 2018; Michal et al., 2007).

The interplay between fearful attachment and childhood trauma in predicting dissociation found in this study is interesting, and subject to interpretation. Whereas in the DDD group childhood trauma made a significant hierarchical contribution to the prediction of normative and pathological dissociation beyond fearful attachment, it did not do so in the HC group. The latter finding in the HC group is comparable to that reported by Sandberg (2010) in a female college sample. Furthermore, in the DDD group only the indirect effect of fearful attachment on dissociation severity, mediated by childhood maltreatment, was statistically significant. The divergent findings in the two groups taken together might suggest that the fearful attachment prevalent in DDD is largely trauma-bound, whereas in the HC group it is not. Though the CTQ assesses only remembered trauma it is reasonable to assume, especially for emotional maltreatment, that emotional trauma may well have predate autobiographical memory and may be present from the earliest years, thus driving attachment style from the start. Dutra et al. (2009) highlighted the powerful role of low positive and flat maternal affects during early caregiving in the genesis of disorganized attachment. Early maternal psychological unavailability could conceivably be linked to the alexithymia, diminished mindfulness, emotional suppression and impaired emotional regulation characteristic of DDD (Michal et al., 2007; Monde, Ketay, Giesbrecht, Braun & Simeon, 2013; Simeon, Giesbrecht, Knutelska, Smith & Smith, 2009). On the other hand, it is possible that

Table 1
Comparison of categorical attachment style (Relationship Questionnaire) and maltreatment status (CTQ categorical) between the Depersonalization Disorder (DDD) and Healthy Control (HC) groups.

	DDD (n = 42)		HC (n = 53)		$\chi^2(1, N = 95)$	p
	Maltr + 29	Maltr - 13	Maltr + 18	Maltr - 35		
Secure	14	9	35	10	11.54	< 0.001***
Dismissive	3	3	8	4	10.04	.002**
Preoccupied	6	3	3	1	1.45	.23
Fearful	19	14	7	3	2.03	.15
					12.09	< 0.001***

p values: * < 0.05, ** < 0.01, *** < 0.001; Maltr: Childhood Maltreatment; + positive; - negative.

Table 2

Comparison of attachment style, dissociation, and childhood trauma between the Depersonalization Disorder (DDD) and Healthy Control (HC) groups.

	DDD (n = 42)Mean (SD)	HC (n = 53)Mean (SD)	t (93)	p
RSQ				
Secure	13.90 (2.90)	17.09 (3.08)	−5.14	< 0.001 ***
Preoccupied	12.17 (2.78)	9.94 (2.19)	4.37	< 0.001 ***
Dismissive	16.17 (3.18)	15.87 (3.72)	0.41	.68
Fearful	12.00 (3.29)	8.47 (3.41)	5.09	< 0.001 ***
DES				
Total	27.47 (16.63)	2.92 (2.64)	9.47	< 0.001 ***
Taxon	28.13 (15.88)	0.97 (1.74)	11.03	< 0.001 ***
CTQ				
Total	43.43 (15.76)	33.95 (9.25)	3.45	< 0.001 ***
Emotional abuse	10.60 (5.14)	6.94 (2.55)	4.22	< 0.001 ***
Physical abuse	7.00 (3.36)	6.30 (2.52)	1.12	.27
Sexual abuse	6.29 (3.31)	5.67 (2.40)	1.05	.30
Emotional neglect	12.05 (5.34)	8.83 (3.59)	3.35	< 0.001 ***
Physical neglect	7.50 (3.18)	6.21 (2.01)	2.30	.025 *

DES: Dissociative Experiences Scale; CTQ: Childhood Trauma Questionnaire; RSQ: Relationship Style Questionnaire; p values: * < 0.05, ** < 0.01 *** < 0.001.

fearful attachment in the HC group, markedly lower both categorically and dimensionally compared to the DDD group but still predictive of dissociation, might be less environmental and more genetic in origin. [Bussoni, Jang, Livesley and Macbeth \(2005\)](#) used a monozygotic-dizygotic twin paradigm to examine attachment styles, measured by the RSQ, and found that genetic effects accounted for 43% of the variance in fearful attachment.

In toto, this study's findings contribute to the ongoing reframing of chronic and pathological depersonalization as a dissociative condition causally related not only to trauma, albeit emotional rather than physical or sexual, but also to attachment organized around fear, whereby no comfort can be found in closeness or with distance. "Fear without solution," as conceptualized by Mary Main, is a hallmark of DID. It three decades ago [Barach \(1991\)](#) framed DID as an attachment disorder, characterized by "detachment." [Liotti \(2013\)](#) addressed the phobia of attachment-related inner states in the psychotherapy of adults with complex trauma, and [Chefetz \(2015\)](#) highlighted the central role of fear in depersonalized states occurring in DID. This study contributes to the conceptualization of fear as a central affect in DDD, driving relational style.

The less "horrific" nature of emotional maltreatment need not detract from appreciating how profound and long-lasting its impacts can be on the attachment system, especially when reflecting on the fact that the hidden traumas of infancy which shape early attachment are almost exclusively emotional, having to do with maternal attunement, availability, and affectivity. [Teicher, Samson, Sheu, Polcari and McGrenery \(2010\)](#) described the profound neurodevelopmental

abnormalities associated with emotional abuse. Even in DID, the near-ubiquitous physical and sexual traumas are typically subsumed by major emotional trauma – they rarely occur in a vacuum or in an otherwise nurturing environment. [Egeland \(2009\)](#) has explored the many reasons why emotional maltreatment has not received the attention of physical and sexual maltreatment. In female residential patients undergoing treatment for PTSD associated with childhood maltreatment, emotional abuse was the strongest and most direct predictor of dissociation ([Haferkamp, Bebermeier, Mollering & Neuner, 2015](#)). [Kruger and Fletcher \(2017\)](#) found that a dissociative disorder classification was significantly predicted by childhood emotional abuse coupled with an emotionally abusive partner; the various dissociative disorders were not diagnostically assessed in this study.

Study strengths include relatively large sample sizes for a clinical study; participants rigorously diagnosed by structured psychiatric interviews; and well-validated widely-used measures of attachment style, dissociation, and childhood maltreatment. Limitations include the use of self-report alone to measure attachment, the gold standard being the Adult Attachment Interview ([Fortuna & Roisman, 2008; Riggs et al., 2007](#)). Though DSM-IV Depersonalization Disorder ([American Psychiatric Association, 1994](#)) was renamed Depersonalization / Derealization Disorder in the DSM-5 ([American Psychiatric Association, 2013](#)), it did not undergo substantive criteria changes requiring reinterpretation of the findings.

In conclusion, this study is the first to explore attachment style in Depersonalization Disorder, and demonstrates the prevalence of insecure, especially fearful, attachment in the disorder. Fearful

Table 3

Pearson's correlations between attachment style, dissociation, and childhood trauma in the Depersonalization Disorder (n = 42) and Healthy Control (n = 53) groups.

	SEC	DISM	PREO	FEAR	DES	TAXON	CTQ	EA	PA	SA	EN
DISM	−0.29 −0.26										
PREO	−0.46** −0.15	−0.05 0.13									
FEAR	−0.50** −0.52**	.44** .046**	.26 0.47**								
DES	−0.21 −0.17	.32* 0.20	.12 0.32*	.42** 0.33*							
TAXON	−0.21 −0.26	.13 0.11	.13 0.46**	.36* 0.37**	.85** 0.60**						
CTQ	−0.27 −0.45**	.47** −0.06	.03 −0.25	.50** 0.22	.57** 0.07	.43** 0.00					
EA	−0.34* −0.22	.44** −0.13	.08 0.08	.44** 0.23	.49** 0.03	.41** −0.09	.88** 0.71**				
PA	−0.14 −0.33*	.35* 0.14	−0.06 −0.37**	−0.06 0.03	.46** −0.00	.26 −0.09	.79** 0.73**	.74** 0.53**			
SA	.09 −0.12	.32* −0.08	−0.14 −0.31*	−0.14 0.02	.37* −0.03	.23 −0.11	.55** 0.47**	.40** 0.06	.37* 0.24		
EN	−0.35* −0.55**	.37* −0.02	.07 −0.05	.54** 0.36**	.47** 0.36**	.43** 0.15	.83** 0.86**	.66** 0.55**	.49** 0.40**	.23 0.29*	
PN	−0.17 −0.24	.30 −0.15	.10 −0.31*	.48** 0.02	.36* 0.02	.21 0.08	.74** 0.69**	.45** 0.31*	.45** 0.43**	.32* 0.08	.67** 0.63**

Within each cell top row is DDD group and bottom row is HC group; p values * < 0.05; ** < 0.01; SEC = Relationship Style Questionnaire secure attachment, PREO = Relationship Style Questionnaire preoccupied attachment, DISM = Relationship Style Questionnaire dismissive attachment, FEAR = Relationship Style Questionnaire fearful attachment; DES = Dissociative Experiences Scale total, TAX = DES taxon; CTQ = Childhood Trauma Questionnaire, EA = CTQ emotional abuse, PA = CTQ physical abuse, SA = CTQ sexual abuse, EN = CTQ emotional neglect, PN = CTQ physical neglect.

attachment score was predictive of normative and pathological dissociation severity, and the effect was indirectly mediated by childhood maltreatment. Emotional maltreatment comprises the hallmark trauma in DDD. Future research will hopefully further elaborate attachment disturbances in this dissociative disorder, assessed by interview methods and in direct comparison to other dissociative disorders.

Declaration of competing interest

No conflict of interest

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