

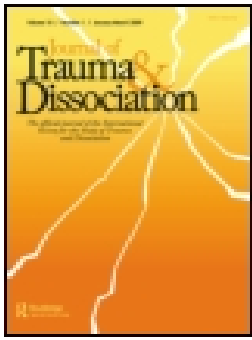
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## Dissociation and psychopathology in residential youth: a brief report

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### ABSTRACT

Although dissociative symptoms are observed in several psychiatric disorders and linked to antisocial behavior and offending, the relation between dissociation and psychopathology or comorbidity has not been consistently investigated in residential youth yet. This brief report documented prevalence and comorbidity rates of several psychiatric disorders and examined their relation to dissociation in residential youth. The study included 100 male adolescents ( $M_{age} = 16.51$ ) admitted to residential youth care facilities. Psychopathology was assessed with the Mini International Neuropsychiatric Interview for children and adolescents (MINI-KID) and dissociation was measured with the Adolescent Dissociative Experiences Scale (A-DES). Externalizing problems (conduct disorder, oppositional defiant disorder, attention deficit hyperactivity disorder) were the most prevalent (81%) followed by substance abuse/dependence (71%), manic/hypomanic symptoms (40%), anxiety (35%), and depression (33%). High comorbidity was also observed in externalizing problems with alcohol/substance abuse/dependence (67%), manic/hypomanic symptoms (35%), depression (31%), and anxiety (30%). Logistic regression analyses revealed a significant link between dissociation and externalizing problems, depression, and manic/hypomanic symptoms, as well as comorbid externalizing problems and depression or manic/hypomanic symptoms. The findings highlight the need to assess dissociation in order to better understand the multifaceted individual profile of residential youth and incorporate it in the treatment plan.

### ARTICLE HISTORY

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Antisocial and delinquent behavior is a common reason for referral to mental health services in adolescence and numerous adolescents enter the residential care system. Although there are different approaches across countries in youth care (e.g., duration of care, range of age) and distinct policies for placement in juvenile correctional institutions or residential care institutions, youth with severe behavioral problems and minor offenses are most commonly admitted to residential care institutions in European countries and the United States. Epidemiological studies have examined the prevalence of antisocial behavior as well as the wide range of psychopathology in incarcerated and residential care

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populations. High prevalence of conduct disorder (CD) and oppositional defiant disorder (ODD) (~50%) has been documented in detained youth, as well as high prevalence of attention deficit hyperactivity disorder (ADHD), depression, anxiety, and substance use disorders that varies among age, sex, and ethnic groups (Fazel, Doli, & Langstrom, 2008; Garland et al., 2001; Teplin, Abram, McClelland, Dulcan, & Mericle, 2002). In addition, high rates of trauma exposure are prevalent in residential and detained youth and childhood trauma is predictive of persistent antisocial behavior and offending (Dierkhising et al., 2013; Fox, Perez, Cass, Baglivio, & Epps, 2015).

Extensive scientific evidence has also consistently linked trauma exposure to dissociation (Vonderlin et al., 2018). Dissociation is defined in DSM-5 as “a disruption of and/or discontinuity in the normal integration of consciousness, memory, identity, emotion, perception, body representation, motor control, and behavior” (American Psychiatric Association [APA], 2013, p. 291). Dissociation includes a wide range of experiences ranging from mild normative experiences (being very absorbed by a book) to pathological dissociation, such as depersonalization (detachment from one’s own mind, self, or body), derealization (detachment from surroundings), or amnesia during a particular event or period of time (APA, 2013). Dissociation can be a coping mechanism in response to trauma. The individual withdraws from the outside world to an inner self and experiences changes in consciousness in order to minimize or escape the emotional distress caused by the ongoing traumatic experience (Putnam, 1997). Adolescence is a very critical period for dissociation, as dissociative-like experiences, such as identity confusion and absorption to oneself, are common and a part of the development of self and identity. However, chronic dissociation of affect and behavior is detrimental for the adolescent’s ability to construct a sense of self and integrate a set of different needs (Armstrong et al. 1997).

A recent meta-analysis demonstrated high levels of dissociation in a broad range of psychiatric disorders, namely dissociative disorders, post-traumatic stress disorder, borderline personality disorder, conversion disorder, substance-related and addictive disorders, eating disorders, schizophrenia, anxiety, and affective disorders (Lyssenko et al., 2018). However, although comorbidity is frequently observed in psychiatric patients, the aforementioned meta-analysis did not investigate the link between dissociation and comorbid disorders. Additionally, this meta-analysis did not examine the relation between antisocial personality disorder or disruptive disorders and dissociation. Dissociative symptoms are often observed in offenders and dissociative states have been associated with violent behavior (Moskowitz, 2004). In specific, a review demonstrated that one quarter of offenders reported pathological levels of dissociation and these offenders committed more violent crimes (Moskowitz, 2004). Relatedly, higher levels of dissociation have also been linked to antisocial behavior and offending in youth (Kerig & Modrowski, 2018; Leibowitz, Laser, & Burton, 2010). The

study by Kerig and Modrowski (2018) demonstrated a path from polyvictimization to dissociation and borderline symptoms that further led to offending and another study found that dissociative symptoms predicted sexual offenses in a juvenile sample (Leibowitz et al., 2010). Most importantly, scientific evidence has revealed that pathological dissociation can interfere with treatment and lead to poorer treatment outcomes in several psychiatric disorders (Bae, Kim, & Park, 2016; Spitzer, Barnow, Freyberger, & Grabe, 2007). Surprisingly, despite the high prevalence of dissociation in a plethora of psychiatric disorders and its clinical relevance, there is a substantial lack of its assessment both in research and in clinical practice. A more thorough examination of dissociative symptoms can be very informative not only on the multifaceted forms of psychopathology but also on potentially different treatment responses.

This study aimed to report the prevalence rates of several psychiatric disorders and examine whether and which disorders were associated with dissociative symptoms in male adolescents living in residential youth care facilities in the Netherlands, who exhibited primarily externalizing problems. In the Netherlands, juveniles aged 12 to 18 who exhibit severe behavioral problems or have committed minor offenses (e.g., drug-related offenses, property offenses, and violence) are admitted to residential youth care facilities similar to other youth care institutions in Europe and residential treatment centers in the United States. Given the high prevalence of comorbidity in youth with externalizing problems (American Psychiatric Association, 2013), we also documented comorbid disorders and investigated their relation to dissociation. History of trauma and callous-unemotional (CU) traits that are frequently observed in this population were also included in the analyses to untangle the independent effect of dissociative symptoms on psychopathology.

## Method

### Participants

The study included 100 male adolescents ( $M_{age} = 16.51$   $SD_{age} = 0.96$ ) recruited from residential youth care facilities in the Netherlands. The participants were admitted to residential care for severe behavioral problems, mainly externalizing problems and delinquent behavior, and/or adverse family environment. The majority of the participants were of Dutch origin ( $n = 83$ ). Almost all the participants followed a low level track in school ( $n = 96$ ).

### Materials

#### Dissociation

The Adolescent Dissociative Experiences Scale (A-DES; Armstrong et al., 1997) was administered to assess dissociative symptoms. A-DES is suitable for

adolescents aged 11–18 and it consists of four subscales: dissociative amnesia, absorption/imaginative involvement, passive influence, and depersonalization/derealization. It includes 30 items rated on an 11-point Likert scale ( $0 = \textit{never}$ ,  $10 = \textit{always}$ ) and the total score is the mean score of all the items. A-DES has been used extensively in healthy and clinical adolescents samples and it has very good psychometric properties with excellent internal consistency and good construct validity (Armstrong et al., 1997; Farrington, Waller, Smerden, & Faupel, 2001). The Cronbach's  $\alpha$  in this study was .94.

### **Childhood trauma**

Childhood traumatic experiences were assessed with the Childhood Trauma Questionnaire – Short Form (CTQ; Bernstein et al., 2003). It consists of 25 items about childhood trauma and has five subscales: physical, sexual, and emotional abuse, and physical and emotional neglect. The items are rated on a 5-point Likert scale indicating the frequency of the traumatic experiences ( $1 = \textit{never true}$ ,  $5 = \textit{very often true}$ ). CTQ is a valid screening instrument for childhood trauma. A sum score of all the items was calculated and higher scores indicate higher frequency of childhood trauma. CTQ has very good psychometric properties in community, psychiatric, and forensic populations (Cima, Smeets, & Jelacic, 2008; Thombs, Bernstein, Lobbstaël, & Arntz, 2009). The Cronbach's  $\alpha$  in this study was .93.

### **Callous-unemotional traits**

Callous-unemotional (CU) traits were assessed with the Inventory of Callous-Unemotional traits – Youth version (ICU; Frick, 2003). It consists of 24 items rated on 4-point Likert scale ( $0 = \textit{not at all true}$ ,  $3 = \textit{definitely true}$ ) and it has three subscales: callousness, uncaring, and unemotional. A total sum score is computed and higher scores indicate higher CU traits. The ICU is widely used in healthy and clinical samples and has very good psychometric properties (Feilhauer, Cima, & Arntz, 2012; Kimonis et al., 2008). The Cronbach's  $\alpha$  in this study was .82.

### **Psychopathology**

The Mini International Neuropsychiatric Interview for Children and Adolescents (MINI-KID; Sheehan et al., 1998) was administered to assess the presence of current DSM-IV and ICD-10 psychiatric disorders. The MINI-KID is a fully structured and widely used screening interview for children and adolescents (age 6–17) with a binary (*yes/no*) format. It has very good psychometric properties with substantial sensitivity and specificity, interrater and test-retest reliability, and concordant validity with other relevant instruments (Sheehan et al., 2010).

## Procedure

The study was conducted at residential youth care facilities as part of a larger project that was granted Medical Ethical approval by the Central Committee on Research Involving Human Subjects and the Dutch Ministry of Health. Participants completed the A-DES, ICU, and CTQ and then trained graduate students administered the MINI-KID interview. Participation was completely voluntary and the participants were allowed to terminate their participation at any time. Written informed consent was obtained from all participants. Parental written informed consent was obtained for participants below 16 years of age according to the Dutch law. Participants received financial compensation for their participation.

## Results

Table 1 presents the prevalence of CD, ODD, ADHD, depression, any anxiety disorder, alcohol/substance abuse/dependence, and manic/hypomanic symptoms as well as the mean of ADES in each group. From the total sample, 90% presented pathological symptoms of the aforementioned disorders, 81% exhibited two or more comorbid disorders, and 51% exhibited three or more comorbid disorders. The descriptive statistics and correlations among the dissociation, CU traits, and trauma are presented in Table 2.

Logistic regressions were conducted to examine whether dissociation was related to psychopathology controlling for trauma, CU traits, and age. To

**Table 1.** Dissociative symptoms and prevalence rates of psychopathology and comorbidity.

	<i>N</i> (%)	ADES ( <i>M</i> , <i>SD</i> )
CD	66	2.14 (1.79)
ODD	45	2.22 (1.69)
ADHD	30	2.29 (1.43)
CD+ODD	34	2.19 (1.87)
CD+ADHD	20	2.74 (1.52)
ODD+ADHD	16	2.58 (1.45)
ADHD/CD/ODD	81	2.08 (1.67)
CD only	22	1.88 (1.84)
ODD only	6	2.74 (1.18)
ADHD only	2	1.50 (0.14)
Depression	33	2.75 (2.10)
Anxiety	35	2.46 (1.82)
Alcohol/Substance abuse/dependence	71	1.94 (1.63)
Manic/hypomanic symptoms	40	2.46 (1.77)
ADHD/CD/ODD + Depression	31	2.85 (2.13)
ADHD/CD/ODD + Anxiety	30	2.60 (1.92)
ADHD/CD/ODD + Alcohol/Substance abuse/dependence	67	1.94 (1.67)
ADHD/CD/ODD + Manic/hypomanic symptoms	35	2.66 (1.80)
No disorder	10	0.76 (0.83)

ADES = Adolescent Dissociative Experiences Scale; CD = Conduct Disorder; ODD = Oppositional Defiant Disorder; ADHD = Attention Deficit Hyperactivity Disorder.

**Table 2.** Descriptive statistics and correlations.

	<i>M</i>	<i>SD</i>	Range	1	2	3	4	5	6	7
1.A-DES	1.89	1.59	0–7.57	–						
2.ICU	29.44	10.05	8–60	.277**	–					
3.CTQ total	45.65	18.30	25–106	.355**	.020	–				
4.Physical abuse	8.30	5.25	5–25	.232*	–.074	.821**	–			
5.Sexual abuse	6.19	2.88	5–21	.273**	.011	.546**	.332**	–		
6.Emotional abuse	9.64	5.31	5–25	.386**	–.006	.861**	.723**	.459**	–	
7.Physical neglect	8.92	4.05	5–20	.228*	.020	.779**	.500**	.331**	.505**	–
8.Emotional neglect	12.6	5.67	5–25	.267**	.118	.826**	.521**	.281**	.580**	.697**

A-DES = Adolescent Dissociative Experiences Scale; ICU = Inventory of Callous-Unemotional Traits; CTQ = Childhood Trauma Questionnaire

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

minimize the number of tests, we combined CD, ODD, and ADHD as indicators of externalizing problems. Dissociation predicted externalizing problems,  $b = 0.59$ ,  $z = 2.10$ ,  $p = .036$ , OR = 1.80, CI[1.10, 3.29], depression,  $b = 0.60$ ,  $z = 2.89$ ,  $p = .004$ , OR = 1.83, CI[1.25, 2.85], and manic/hypomanic symptoms,  $b = 0.44$ ,  $z = 2.58$ ,  $p = .01$ , OR = 1.56, CI[1.13, 2.23]. Additionally, neither trauma,  $b = 0$ ,  $z = 0.24$ ,  $p = .809$ , nor CU traits,  $b = 0.04$ ,  $z = 1.19$ ,  $p = .233$ , were related to externalizing problems. Dissociation was not related to anxiety,  $b = 0.25$ ,  $z = 1.51$ ,  $p = .130$ , or alcohol/substance abuse/dependence,  $b = 0.01$ ,  $z = 0.03$ ,  $p = .979$ . Moreover, dissociation was significantly associated with comorbid externalizing problems and depression,  $b = 0.56$ ,  $z = 2.81$ ,  $p = .005$ , OR = 1.75, CI[1.22, 2.69], as well as comorbid externalizing problems and manic/hypomanic symptoms,  $b = 0.53$ ,  $z = 2.91$ ,  $p = .004$ , OR = 1.69, CI[1.21, 2.49], compared to only one of the two disorders. It was also marginally related to comorbid externalizing problems and anxiety,  $b = 0.30$ ,  $z = 1.82$ ,  $p = .068$ , but not with comorbid externalizing problems and alcohol/substance abuse/dependence,  $b = -0.16$ ,  $z = -0.92$ ,  $p = .357$ . Model diagnostics were conducted for multicollinearity, linearity, and scaled residuals, indicating a good fit of the models. Due to the large number of tests, False Discovery Rate (FDR) correction for multiple testing was applied (Benjamini & Hochberg, 1995). The results were marginally significant for externalizing problems (adjusted  $p = .064$ ), and significant for depression (adjusted  $p = .015$ ), manic/hypomanic symptoms (adjusted  $p = .023$ ), as well for comorbid externalizing problems and depression (adjusted  $p = .015$ ), and manic/hypomanic symptoms (adjusted  $p = .015$ ).

## Discussion

The aim of the study was to report prevalence rates of psychopathology and examine the relation between dissociation and psychopathology in residential youth. The findings showed high prevalence rates of CD, ODD, ADHD, depression, anxiety, alcohol/substance abuse or dependence, and manic/



hypomanic symptoms in a sample of male adolescents living in residential care. In addition, high rates of comorbidity were observed between externalizing problems (CD, ODD, ADHD) and depression, anxiety, alcohol/substance abuse or dependence, and manic/hypomanic symptoms. Importantly, high levels of dissociation were associated with externalizing problems, depression, manic/hypomanic symptoms, as well as comorbid externalizing problems with depression or manic/hypomanic symptoms.

These findings are in accordance with the results by Lyssenko et al. (2018) that highlighted the presence of dissociation in a wide range of psychiatric disorders in adults. In addition, externalizing problems that were highly prevalent in our sample were also related to higher dissociation, in line with previous evidence in comparable samples (Kerig, 2018; Leibowitz, 2010; Walker, 2002). Crucially, comorbidity was also associated with higher levels dissociation compared to only one diagnosis. Given the complex psychopathological profiles and the high comorbidity rates in residential youth, this finding is especially informative and relevant for clinical practice. Comorbid disorders require more multifaceted interventions and there is an increased interest in identifying factors that might impede treatment response and providing personalized care to each patient based on their individual profile. Considering that dissociation can interfere with treatment and lead to poor treatment response (Bae et al., 2016; Spitzer et al., 2007), it is crucial to, first, assess dissociative symptoms and identify patients with high levels of dissociation and, second, take it into account and incorporate it in the treatment plan.

Several limitations should be acknowledged. First, our sample included only males and thus did not provide information on dissociation levels in females or potential sex differences. Second, the participants were in residential care mostly due to externalizing problems. Comorbid disorders were highly prevalent in our sample and we could not compare patients with only one diagnosis. Therefore, our findings can be informative only for comparable samples of residential youth. However, given the complexity and the wide range of psychopathology in this specific population, it is more ecologically valid to take into account the presence of comorbidity. Third, we used ADES to assess dissociation, which is a screening questionnaire and not a thorough interview. We propose that ADES is an easy and quick instrument to assess dissociative symptoms in clinical practice that can give the therapist the opportunity to determine whether a more thorough interview is warranted.

Overall, this brief report documented the prevalence rates of several psychiatric disorders and comorbidity in male adolescents in residential care and elucidated the link between dissociation and externalizing problems, depression, and manic/hypomanic symptoms. These findings highlight the need to assess dissociation in residential youth in order to better understand its role in psychopathology and incorporate it in intervention plans.

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