A MULTI-ASSESSMENT APPROACH TO ATTACHMENT IN MIDDLE CHILDHOOD AND EARLY ADOLESCENCE IN TWO CLINICAL GROUPS

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Whilst it is widely recognised that attachment is a fundamental aspect of psychological wellbeing, there is little research on attachment in specific psychopathological conditions, in middle childhood and early adolescence. This study seeks to evaluate the role of attachment in patients (8-15 years) with somatic symptom disorders (SSDs) and with disruptive behavior disorders (DBDs). A battery of assessments was completed: Child Attachment Interview, Separation Anxiety Test, and Kerns Security Scale. Findings on "attachment models" showed an over-representation of insecure attachment patterns with a preponderance of disorganized attachment in both clinical groups. On "perceived security," SSD participants viewed their parents as safer than DBD participants, but, regarding "separation anxiety," they did not show higher separation anxiety. Therefore, a multi-assessment approach is likely to yield a more accurate picture of attachment organization at this age, and to capture attachment processes in SSDs and DBDs.

Key words: Attachment; Middle childhood; Early adolescence; Somatic symptom disorders; Disruptive behavior disorders.

Middle childhood and early adolescence are characterized by developments in physical maturation, psychological process, and interpersonal needs. Children become more self-reliant and assume greater responsibility for their behaviors; peers take on greater salience (Kerns, Tomich, & Kim, 2006); there are advances in metacognition, memory, cognitive flexibility (Spiess, Meier, & Roebers, 2016), and a greater capacity to regulate emotions (Raikes & Thompson, 2005); physical changes may also affect attachment relationships (Richardson, 2005).

It has been argued that in middle childhood and early adolescence, the goal of the attachment system changes, from seeking proximity to the attachment figure to the importance of the availability of the attachment figure (Bosmans & Kerns, 2015). This is in line with Bowlby's (1969/1982) contention that the

frequency and intensity of specific attachment behaviors and the conditions that elicit a need for the attachment figures declines with age. In part, this reflects the growing capacities of children for self-regulation and thus the decline in the immediate need for parental assistance. Notwithstanding, the importance of attachment figures as accessible and available remains fundamental. By the end of middle childhood, the attachment bond between parent and child can be viewed as a collaborative alliance whereby the child is still relying on the stronger, wiser parent figure but is also beginning to use the parent as a resource rather than relying on the parent to solve his or her problems (Kerns, 2008).

While measures designed to assess attachment organization in infancy and in adulthood are well established, the study of attachment in middle childhood and early adolescence continues to prove a challenge. Indeed, scholars recognize that, to date, there is no current "gold standard" measurement tool for the assessment of attachment in this age range (Borelli et al., 2016; Bosmans & Kerns 2015; Steele, 2015). This underscores the importance of adopting a multiassessment approach that may tap different aspect of attachment (Venta, Shmueli-Goetz, & Sharp, 2014) as variations among measurement modalities make it difficult to compare findings across studies, particularly when individual studies often rely on a single method to assess attachment.

PSYCHOPATHOLOGY IN MIDDLE CHILDHOOD AND EARLY ADOLESCENCE

It is widely recognized that attachment has a long-term impact on the child's mental health because the emotional and behavioral regulatory patterns developed within the parent-child relationship influence the way children express their emotions and behaviors (Dubois-Comtois, Moss, Cyr, & Pascuzzo, 2013; Groh, Roisman, van IJzendoorn, Bakermans-Kranenburg, & Fearon, 2012). Attachment insecurity is not considered a causal factor in the development psychopathology, but rather to constitute a risk factor along with other social and environmental factors. More specifically, convergent evidence suggests a link between attachment disorganization, broadly defined as a breakdown or disintegration of an attachment strategy (Main & Solomon, 1990), and psychopathology across development (Borelli et al., 2010; Bureau, Easlerbrooks, & Lyons-Ruth, 2009).

For instance, studies in middle childhood and early adolescence (Brumariu & Kerns, 2010; Brumariu, Kerns, & Seibert, 2012) confirm that secure attachment is linked with greater resilience, less difficulty identifying emotions, and fewer diagnoses of mental disorders. By contrast, attachment disorganization and controlling strategies are linked to higher levels of anxiety and maladaptive socioemotional functioning, such as internalizing (Groh et al., 2012; Madigan, Atkinson, Laurin, & Benoit, 2013) and externalizing problems (Fearon, Bakermans-Kranenburg, van IJzendoorn, Lapsley, & Roisman, 2010; Fearon & Belsky, 2011; Lecompte & Moss, 2014). These associations have also been shown in younger children (Green, Stanley, & Peters, 2007; O'Connor, Bureau, McCartney, & Lyons-Ruth, 2011). Fearon et al. (2010) reported a robust association between insecure attachment, disorganization, and externalizing problems, strongly supporting the role of attachment as a prominent risk factor for child psychopathology. In line with these findings, a significant association between attachment insecurity and internalizing problems was found in both the Groh et al. (2012) and Madigan et al. (2013) retrospective meta-analyses. However, effect sizes were weaker than those found for externalizing symptomatology (Madigan, Brumariu, Villani, Atkinson, & Lyons-Ruth, 2016; Moss & LeCompte, 2015).

In examining the complex links between attachment patterns (especially attachment disorganization) and psychopathology in middle childhood and early adolescence, few studies focused their attention

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on specific psychopathological conditions, instead the clinical groups were often composed of a heterogeneous group of children with mental health problems (Sharp et al., 2016; Shmueli-Goetz, Target, Fonagy, & Datta, 2008; Venta, et al., 2014; Venta, Sharp, & Newlin, 2015). In an attempt to address this gap, the current study focuses on two specific psychopathological conditions, indicative of an internalizing and an externalizing disorder, respectively: somatic symptom disorders (SSDs) and disruptive behavior disorders (DBDs).

SSDs are characterized by multiple and variable physical symptoms without demonstrable pathophysiological processes, accompanied by thoughts, feelings, and unusual behaviors in response to symptoms. Neurologic symptoms that are not identified by a clear organic cause, as well as psychogenic headaches and generalized pain are included in this category (American Psychiatric Association, 2013). Surprisingly, little research has been conducted in the area of SSD in childhood/adolescence. Nevertheless, risk factors for SSDs include preexisting affective/anxiety disorders, experience of physical threat, sexual abuse and rape, and being female (Schulte & Petermann, 2011). Parents of SSD patients are significantly more likely to rate their child's overall health status fair or poor and their children are more often absent from school (Campo, Jansen-Mc-Williams, Comer, & Kelleher, 1999). Moreover, children with SSDs are considerably more likely to seek medical help (Schulte & Petermann, 2011). With respect to the role of attachment, the literature has shown that SSD, considered as an internalizing disorder (Groh et al., 2012), is associated mainly with insecure attachment in school age (Kozlowska & Williams, 2009) and also with disorganized attachment (Bizzi, Castellano, & Cavanna, 2015; Bizzi, Cavanna, Castellano, & Pace, 2015; Kozlowska, Scher, & Williams, 2011). However, the majority of studies to date have been conducted in adulthood (Waller, Scheidt, & Hartmann, 2004), and have largely focused on hypochondria, pain component, and rarely on SSDs (Davies, Macfarlane, Mcbeth, Morriss, & Dickens, 2009; Noyes et al., 2003; Wearden, Perryman, & Ward, 2006); furthermore, findings concerning the distribution of attachment are inconsistent (Kozlowska & Williams, 2009; Waller et al., 2004).

DBDs encompass oppositional-defiant disorder and conduct disorder, and involve diverse problem behaviors and antisocial activities (American Psychiatric Association, 2013). This clinical condition is characterized by disobedient, destructive, and aggressive acts and is associated with peer rejection, poor academic performance, increased risk for school drop-out, and school problems. Difficulties in emotion regulation and in behavior regulation have an important role in children's externalizing behavior problems (Batum & Yagmurlu, 2007). Furthermore, parenting behaviors, such as low parental supportiveness and lack of parental warmth, contribute greatly as risk factors for externalizing behavior problems (White & Renk, 2012). DBD has been shown to be associated with insecure dismissing attachment and disorganized attachment in school age using the Child Attachment Interview (Bizzi, Cavanna et al., 2015) and in preschool age (Fearon & Belsky, 2011) using the Strange Situation Procedure.

Taken together, the literature highlights the importance of developing a greater understanding of some aspects that characterize SSDs and DBDs in middle childhood and in early adolescence, such as the attachment organization in terms of attachment models, perceived security, and separation anxiety.

Overall, psychological features bring new insights for the comprehension of interpersonal mechanisms that characterize psychiatric syndromes (Velotti, Garofalo, & Bizzi, 2015); their correct assessment is necessary for an appropriate treatment (Bizzi, Sciarretta, D'Alessandro, & Picco, 2016).

The broad aim of the study was to test the relation between attachment in middle childhood and early adolescence and psychopathology (specifically SSD and DBD), comparing two clinical conditions (internalizing and externalizing) and adopting a multiassessment approach. Under this broad aim, several specific goals are subsumed, which are the following.

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1. We aim to investigate child attachment in terms of "attachment models" (using the Child Attachment Interview) in these two specific psychopathological conditions; differences in the distribution of attachment between the two groups will be examined. We hypothesize: (a) an over-representation of insecure attachment in both clinical groups, but mostly in the externalizing disorder, that is, among DBD participants (considering a "two-way" classification: secure, insecure); (b) an over-representation of dismissing attachment mainly in DBD participants (considering a "three-way" classification: secure, dismissing, preoccupied); (c) an over-representation of disorganized attachment in both clinical groups, mostly in DBD children (considering a "four-way" classification: secure, dismissing, preoccupied, disorganized).

2. We also aim to assess child attachment in terms of "separation anxiety" (using the semi-projective story task of Separation Anxiety Test). We hypothesize: (a) that the findings on insecurity subscales (loss of self-esteem, hostility, avoidance, anxiety, anguish, confusion) are higher than those on security subscale (attachment and trust in oneself) in both clinical groups, mainly in DBD; (b) an over-representation of dismissing attachment in DBD.

3. Another aim is to investigate child attachment in terms of "perceived security" using a self-report (Kerns Security Scale; KSS) for the younger participants. We hypothesize lower levels of perceived security with respect to parents in DBD group than in SSD group.

4. Our final aim is to assess the relations among these different attachment dimensions in these clinical conditions. We hypothesize that these different attachment dimensions in middle childhood and early adolescence may tap slightly different aspects of attachment.

METHOD

Participants

The participants, all Caucasian, were 98 Italian children and adolescents: 56 participants had previously been diagnosed with SSD and 42 participants had previously been diagnosed with DBD. Participants were evaluated at an Italian Department of Child and Adolescent Psychiatry. Child psychiatric examinations included a series of visits that were scheduled within a period of three weeks. The assessments contained: a standardized parental interview on developmental history (child functioning, school and social competencies, family and peer relationships); a standardized child interview on developmental history; and a self-report compiled by the parents, the Child Behavior Checklist (CBCL/6-18; Achenbach & Rescorla, 2001), in which children reached clinical cut-off for somatic problems or oppositional defiant/conduct problems (t score ≥ 65). On the basis of all available information and on clinical judgment, two experts of mental health (a child psychiatrist and a child psychologist) gave a diagnosis. The inter-rater reliability for the clinical diagnoses from the two mental health experts was calculated for three diagnostic categories: SSD, DBD, or other clinical disorders, with 92% agreement (kappa = .74). Diagnostic discrepancies were discussed to obtain consensus.

The present study adopted the following inclusion criteria: (a) age between 8 and 15 years, (b) fluency in the Italian language, and (c) diagnosis of SSD or DBD. Exclusion criteria were: (a) diagnosis of any psychotic disorder, (b) mental retardation, and (c) drug treatment or psychotherapeutic treatment. Of the 56 SSD participants, 43% were male and their mean age was 11.98 (SD = 2.03); 75% were living with both parents, and 28% of the parents had a low socioeconomic status (under 15,000 Euros). Of the 42 DBD participants, 79% were male and their mean age was 10.78 (SD = 2.11); 69% of DBD participants lived with both parents and 28% of parents had a low socioeconomic status (under 15,000 Euros).

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Measures

Child Attachment Interview (CAI revised edition VIII; Shmueli-Goetz et al., 2008) is a semi-structured interview designed to assess children's self-representations and representations of primary attachment relationships. The interview contains 19 questions concerning times of hurt, upset, loss and death, and the interview lasts approximately 45 minutes. The CAI is videotaped and transcribed verbatim before being subjected to a careful discourse analysis. CAI coding and classification system comprises several scales, all designed to assess the child's overall current state of mind with respect to attachment, as reflected in the narrative. In addition, nonverbal behavior informs the coding. A score between 1 and 9 is assigned for each of the scales (emotional openness, balance of positive and negative reference to attachment figures, use of examples, involving anger, idealization, dismissal, resolution of conflicts, and overall coherence), based on a careful analysis of the narrative. According to the scoring on these scales, the child's attachment classification with respect to each caregiver is established, yielding a "two-way" classification (secure, insecure), "three-way" classification (secure, dismissing, preoccupied) and "four-way" classification (secure, dismissing, preoccupied, disorganized). This interview has been used with clinical and nonclinical populations (Cavanna, Bizzi, San Martini, & Castellano, 2018; Shmueli-Goetz et al., 2008), and has good psychometric properties (Shmueli-Goetz et al., 2008; Target, Fonagy, & Shmueli-Goetz, 2003). In this study, the interviews were separately coded by two independent coders, who were trained and had obtained the certificate of reliability (agreement on "four-way" classification greater than 80%) from one of the authors of the CAI. Kappa (κ) was calculated as an estimate of agreement. For the "two-way" classification, the coders' agreement was 93.7% (κ = .76), with respect to the mother, and 94.7% (κ = .80), with respect to the father. For the "three-way" classification, the coders' agreement was 93.7% (κ = .90), with respect to the mother, and 94.8% (κ = .91), with respect to the father. For the "four-way" classification, the coders' agreement was 84.4% (κ = .77), with respect to the mother, and 88.3% (κ = .83), with respect to the father.

Separation Anxiety Test (SAT; Attili, 2001a; Klagsbrun & Bowlby, 1976) is a semi-projective test for children and adolescents designed to assess children's responses to scenes depicting separations from their parents. It consists of six pictures, considered to reflect "mild" or "severe" separations. The examiner describes what happens before each separation as shown in the picture, and then follows up with questions about what the pictured child may feel, why the child feels that way, and what the child will do. The pictures are genderbased and the child's responses to the SAT are audiotaped and transcribed verbatim. In this study, we used the version validated in Italy (Attili, 2001a). Answers related to emotions, hypothesized as reactions of the child, are sorted into eight classes/subscales with a score ranging from −2 to +2: attachment, loss of self-esteem, hostility, trust himself, avoidance, anxiety, anguish, and confusion. On the basis of global scores obtained from the sum of the classes (total SAT score from +4 to −3), one of the following attachment classifications is established: secure, ambivalent-anxious, anxious-avoidant, disorganized or confused. Positive scores are indicative of attachment security. The SAT is widely used and has good psychometric properties (Attili, 2001a). In this study, two independent coders scored the SAT, and coders' agreement was 82% (κ = .67) for "two-way classification" (secure, insecure).

Kerns Security Scale (KSS; Kerns, Klepac, & Cole, 1996; see also Calvo, 1998) is a 15-item self-report tool designed to assess child's perception of his/her parents' responsiveness, availability and the child's perceived ability to depend upon the attachment figure (Perceived Security with respect to the mother, with respect to the father, and overall). It is administered to children of 8-12 years. The responses are based on Harter's (1982) format (i.e., "Some kids . . ." vs. "Other kids . . ."), and the child indicated,

first, which of the two descriptions was most like the child, and second, whether this description was *very true* or *sort of true*. Each item was scored from 1 to 4. The scores were tallied, with higher scores indicating more perceived security. Adequate psychometric properties were demonstrated (Kerns, Schlegelmilch, Morgan, & Abraham, 2005). In this study, the KSS was used only for younger children (8-12 years): the test has not been validated until 15 years. Alphas were .72 for the mother form and .81 for the father form.

Procedure

Recruitment of the groups was carried out at a hospital in a large town in Italy. The study was previously approved by the hospital's Ethics Committee and data was collected over a period of two years. All participants and their families were informed about the aims and the procedures of the study. They submitted their written informed consent and were advised about their option of withdrawal at any time. Following the diagnostic process, assessments were conducted in a private room at the hospital by a clinical researcher. During a meeting, lasting approximately 80 minutes, children completed the CAI, SAT, and KSS; in a separate room, parents were asked to answer questions in order to collect sociodemographic information. Those families who completed the full assessment were offered a report with a synthesis of the outcomes of each measure. Participation was voluntary and all procedures and materials complied with the official guidelines published by the American Psychological Association.

RESULTS

Preliminary analyses were undertaken to determine the possible presence of significant differences between the two clinical groups on sociodemographic variables. No significant differences were found with respect to family composition (e.g., participants living with both parents, or parents divorced, deceased, etc.), $chi^2(1) = < 1$, and socioeconomic status (less or greater than 15,000 Euros), $chi^2(1) < 1$. In contrast, gender, $chi^2(1) = 12.58$, $p < .001$, and age, $t(96) = 2.95$, $p < .01$, emerged as significantly different: there were more boys in the DBD group, and participants were younger in this group than in the SSD group.

Three diverse attachment dimensions were investigated in the assessment of attachment in SSD and DBD participants: attachment representations elicited directly using the CAI; separation anxiety, using the SAT semi-projective assessment; and perceived attachment security in younger children (aged 8-12), using the self-report KSS. The results on the relation between child psychopathology (SSD and DBD) and each attachment measure will be presented in turn. Considering that the diagnostic groups differed significantly in age and gender, these differences were controlled in the group comparisons.

Attachment Representational Models: The Child Attachment Interview

To assess children's attachment organization in SSDs and DBDs using the CAI, we firstly examined the concordance rates in attachment with respect to mother and father in the two groups. Overall, high concordance of attachment was found in both groups. Specifically, in the SSD group, for the "two-way" classification (secure, insecure), the concordance was 100% (κ = 1.00); for the "three-way" classification (secure, dismissing, preoccupied), the concordance was 93% (κ=.88), and for the "four-way" classification

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(including disorganized attachment) it was 89% (κ = .84). A similar trend emerged in the DBD group: the concordance of attachment to mother and to father for the "two-way" classification was 95% (κ=.80), for the "three-way" classification it was 88% (κ=.77), and for the "four-way" classification it was 90% (κ=.85).

We next established the distribution of attachment models for the two groups. As shown in Table 1, the majority of children in the SSD group were classified, on the "two-way" categorization, as insecure with respect to the mother (85.5%) and to the father (85.2%); on the "three-way" categorization, the frequencies of dismissing and preoccupied attachment were similar (more than 40%); on the "four-way" categorization, a high percentage of disorganized attachment was found (43.6% with respect to the mother and 42.6% with respect to the father). Similarly, in the DBD group, the majority of children on the "two-way" categorization were classified as insecure with respect to the mother (83.3%) and with respect to the father (85.4%); on the "three-way" classification, dismissing attachment was prevalent (57.1% for the mother and 68.3% for the father); on the "four-way" classification, the disorganized attachment was found in half of the young patients.

The preponderance of insecure attachment classification in both clinical groups confirmed our first hypothesis. Testing for possible differences in the distribution of attachment models between the two clinical groups, no significant differences for the "two-way" and "four-way" attachment classifications with respect to both caregivers emerged. However, a significant difference was found for the "three-way" attachment patterns with respect to the father, $chi^2(2) = 7.67$, $p < .03$, but not with respect to the mother, $chi^2(2) = 3.93$, $p = .14$. Analysis of the standardized residuals (adjusted residuals, z) suggested that, in the DBD group, compared to the SSD group, there were fewer children classified as preoccupied with respect to the father ($z = -2.7$) and more children classified as dismissing ($z = 2.7$). Curiously, these differences were not observed for attachment with respect to the mother. Both groups had a high proportion of disorganized attachment, though they did not differ significantly.

To control gender and age differences, the analysis on CAI representations was repeated separately for males ($n = 57$) and females ($n = 40$), and for younger children aged 8-12 ($n = 67$) and older children aged 13-15 ($n = 28$). No significant differences were found on the "two-way" and "four-way" representations, and on age. Only on the "three-way" representations we found a significant difference between genders and attachment to the mother, $chi^2(2) = 10.234$, $p < .007$, and attachment to the father, $chi^2(2) = 9.175$, $p < .01$. Indeed, males showed 60% dismissing attachment to the mother (64% to the father), 25% preoccupied attachment to the mother (20% to the father), 16% secure attachment to both parents, whereas, females showed 30% dismissing attachment to the mother (38% to the father), 55% preoccupied attachment to the mother (49% to the father), and 15% secure attachment to the mother (13% to the father).

Separation Anxiety: The Separation Anxiety Test

To assess child attachment in terms of "separation anxiety," we used the coding system validated in Italy (SAT; Attili, 2001a). Ratings on security subscales (attachment and trust himself) were higher than those on insecurity subscale (loss of self-esteem, hostility, avoidance, anxiety, anguish, confusion). In both groups the lowest score was on avoidance and the highest on trust himself. As reported in Table 2, independent t test was used to compare children across SAT classes/subscales. The only significant difference between the two groups was for loss of self-esteem ($p < .05$), suggesting that children with SSDs showed

TABLE 1
Attachment distribution in SSD and DBD groups using a direct interview (CAI)

		SSD group %		DBD group %		Mother	Father
		Mother	Father	Mother	Father		
Two-way	Secure	14.5 (–0.3)	14.8 (0)	16.7 (0.3)	14.6 (0)	$chi^2(1) < 1$	$chi^2(1) < 1$
	Insecure	85.5 (0.3)	85.2 (0)	83.3 (–0.3)	85.4 (0)		
Three-way	Secure	14.5 (–0.3)	14.8 (0)	16.7 (0.3)	14.6 (0)	$chi^2(2) = 3.93$, ns	$chi^2(2) = 7.67$, $p < .05$
	Dismissing	40.0 (–1.7)	42.6 (–2.5)	57.1 (1.7)	68.3 (2.5)		
	Preoccupied	45.5 (1.9)	42.6 (2.7)	26.2 (–1.9)	17.1 (–2.7)		
Four-way	Secure	12.7 (–0.2)	12.9 (0.1)	14.3 (0.2)	12.1 (–0.1)	$chi^2(3) = 1.82$, ns	$chi^2(3) = 2.28$, ns
	Dismissing	18.2 (–0.4)	24.1 (0)	21.4 (0.4)	24.4 (0)		
	Preoccupied	25.5 (1.3)	20.4 (1.4)	14.3 (–1.3)	9.8 (–1.4)		
	Disorganized	43.6 (–0.6)	42.6 (–1.1)	50.0 (0.6)	53.7 (1.1)		

Note. SSD = Somatic symptom disorder; DBD = Disruptive behavior disorder; CAI = Child Attachment Interview. In parentheses, adjusted residuals are reported.

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lower scores of self-esteem than those diagnosed with DBDs. Therefore, contrary to our expectations, the findings on security subscales of SAT were higher than those on insecurity subscale in both clinical groups

To control gender and age differences on total SAT scores, ANOVA was applied; findings showed no significant effects: for gender, $F < 1$; for age, $F_{(1, 97)} = 1.60$, $p = .12$, eta$^2 = .16$; for group, $F_{(1, 97)} = 1.05$, $p = .41$, eta$^2 = .11$. Significant interactions were not revealed.

TABLE 2
Separation Anxiety Test (SAT) scores for SSD and DBD groups

SAT subscales	SSD group ($n = 56$) Mean	DBD group ($n = 41$) Mean	
Attachment	4.20 (2.16)	3.88 (2.61)	$t < 1$
Loss of Self-Esteem	–0.68 (1.39)	–0.20 (0.60)	$t(95) = 2.09$, $p < .05$
Hostility	–0.38 (0.62)	–0.34 (0.69)	$t < 1$
Trust himself	1.04 (1.87)	0.93 (1.92)	$t < 1$
Avoidance	–1.30 (2.26)	–1.71 (2.08)	$t < 1$
Anxiety	0.64 (0.82)	0.37 (1.02)	$t(95) = –1.48$, $p = .14$
Anguish	–0.04 (–0.27)	–0.20 (0.60)	$t(95) = –1.76$, $p < .09$
Confusion	–0.50 (1.09)	–0.34 (0.88)	$t < 1$

Note. SSD = Somatic Symptom Disorders; DBD = Disruptive Behavior Disorders. Standard deviations in parentheses.

In addition, the distribution of attachment patterns assessed by the SAT (Attili, 2001a) (Table 3) showed that for the "two-way" analysis (secure, insecure), insecure attachment was found in both groups around 50%; on the "three-way" analysis (ambivalent-anxious, anxious-avoidant, secure), the frequency of ambivalent-anxious attachment was 20.4% in SSD children and 32.3% in DBD children, whereas, 22.5% of SSD and 12.9% of DBD children showed an anxious-avoidant attachment. Considering the "four-way" analysis (ambivalent-anxious, anxious-avoidant, secure, disorganized or confused), disorganization was found only in 12.5% of the SSD group and in 24.4% of the DBD group. No significant differences were found on attachment distributions. The SAT yields an overall attachment classification rather than attachment classifications with respect to each parent.

To control gender and age differences, the analysis on SAT categories was repeated separately for males ($n = 56$) and females ($n = 41$), and for younger children, aged 8-12 ($n = 68$), and older children, aged 13-15 ($n = 29$). No significant differences were found. Contrary to our expectations, the two groups did not differ and children with DBDs were not more likely to be classified as dismissing on the SAT than their SSD counterparts (these findings are available upon request from the first author).

Perceived Security: Kerns Security Scale

To investigate child attachment in terms of "perceived security," we administered the self-report KSS to a group of 67 children, aged 8-12. Findings showed significant differences between the SSD and

TABLE 3
Attachment distribution in SSD and DBD groups on the Separation Anxiety Test

		SSD group %	DBD group %	
2 way	Secure	50.0 (0.8)	41.5 (–0.8)	chi^2(1) < 1
	Insecure	50.0 (–0.8)	58.5 (0.8)	
3 way	Secure	57.1 (0.2)	54.8 (–0.2)	chi^2(2) = 2.01, *ns*
	Ambivalent-anxious	20.4 (–1.2)	32.3 (1.2)	
	Anxious-avoidant	22.5 (1.1)	12.9 (–1.1)	
4 way	Secure	50.0 (0.8)	41.4 (–0.8)	chi^2(3) = 4.27, *ns*
	Ambivalent-anxious	17.9 (–0.8)	24.4 (0.8)	
	Anxious-avoidant	19.6 (1.3)	9.8 (–1.3)	
	Disorganized/confused	12.5 (–1.5)	24.4 (1.5)	

Note. SSD = Somatic Symptom Disorders; DBD = Disruptive Behavior Disorders. In parentheses, adjusted residuals are reported.

DBD groups on perceived security with respect to mother, $t(65) = –3.35$, $p < .002$, with respect to father, $t(65) = –2.30$, $p < .03$, and on overall perceived security, $t(65) = –3.40$, $p < .002$. As shown in Table 4, the SSD group reported higher levels of perceived security with respect to parents than the DBD group. In addition, in both groups the mother was perceived as safer than the father. These data support our third hypothesis suggesting that children diagnosed with SSD perceived their parents as safer than children diagnosed with DBD, who showed less perceived security especially with respect to the father.

To control gender and age differences on perceived security (with respect to the mother, the father, and overall), we conducted an ANOVA analysis, that revealed no significant effect for gender, $F_{(1, 67)} = 2.38$, $p < .11$, eta^2 =.07, and for age, $F < 1$, a significant effect for group, $F_{(1, 67)} = 5.46$, $p < .008$, eta^2=.15, no interaction between group and gender, $F_{(1, 67)} = 2.01$, $p = .14$, eta^2 = .06, and between group and age, $F < 1$.

TABLE 4
Attachment distribution in SSD and DBD groups on the Separation Anxiety Test

KSS subscales	SSD group (*n*=34) Mean	DBD group (*n*=33) Mean	
Perceived security by mother	51.65 (4.10)	47.09 (6.77)	$t(65) = –3.35$, $p < .002$
Perceived security by father	49.50 (7.25)	44.27 (11.03)	$t(65) = –2.30$, $p < .03$
Overall perceived security	101.15 (10.26)	91.36 (13.14)	$t(65) = –3.40$, $p < .002$
Discrepancy of perceived security	2.15 (5.77)	2.82 (12.73)	$t < 1$

Note. SSD = Somatic Symptom Disorders; DBD = Disruptive Behavior Disorders. Standard deviations in parentheses.

Relations Among the Three Attachment Measures

The next step was to systematically explore relations between the three different attachment measures on the overall group. Firstly, after having grouped the SAT categories (ambivalent-anxious, anx-

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ious-avoidant, secure, disorganized or confused) into two categories (secure, insecure), we compared CAI attachment classification ("two-way") and the SAT. Chi-square was applied; no significant associations between the two classification criteria were found — $chi^2(1) < 1$ both with respect to the mother and with respect to the father. Similarly, the difference between secure and insecure (CAI) on the total SAT score was not significant, $F < 1$. Secondly, considering CAI and KSS measures, the ANOVA did not show any effect of the CAI classification ("two-way") on the perceived security scales with respect to the mother and with respect to the father, Fs < 1.

Data suggest that these three attachment dimensions are not significantly related in our overall group. These different attachment tools in middle childhood and early adolescence may tap slightly different aspects of the same construct. So, it is important to consider the findings separately, due to the focus on different aspects of attachment using different approaches (see our four hypotheses).

DISCUSSION

The assessment of attachment in middle childhood and early adolescence continues to present a challenge, in part because of the complex changes at physical, cognitive, emotional level, and consequently because of the dearth of valid and reliable measures (Brumariu & Kerns, 2015). Whilst there is no gold standard measure available, different approaches have yielded diverse assessment tools, each with a focus on different attachment-related dimensions.

The current study was undertaken using three different attachment assessments in order to explore the relation between attachment organization and specific psychopathological conditions (SSD and DBD). In adopting this multiassessment approach, we sought to add to existing knowledge concerning the relationship between attachment and psychopathology in middle childhood and early adolescence. We focused specifically on two disorders that have important implications for children's development in terms of internalizing and externalizing symptoms and for children's general adjustment. Two groups of children diagnosed with SSDs and DBDs were recruited as indicative respectively of an internalizing versus externalizing disorder. On this, literature on the attachment in externalizing disorders reported a robust association between insecure attachment, attachment disorganization and externalizing problems, strongly supporting the role of attachment as a prominent risk factor for child maladjustment (Fearon et al., 2010). Furthermore, a significant association between attachment insecurity and internalizing problems has been found in retrospective meta-analyses (Groh et al., 2012; Madigan et al., 2013). However, reported effect sizes were weaker for internalizing problems than those found for externalizing symptomatology (Madigan et al., 2016; Moss & LeCompte, 2015).

A review of existing literature suggests that SSDs and BDBs are associated with different sociodemographic variables (American Psychiatric Association, 2013). Furthermore, SSD is a disorder associated mostly with females and is most likely to emerge in adolescence. By contrast, DBD patients are mostly male and the incidence of DBDs is mainly in the early years. Our findings with respect to sociodemographic characteristics of the two groups are in line with this and reflect the characteristics of the two disorders (Batum & Yagmurlu, 2007; Schulte & Petermann, 2011; White & Renk, 2012). The SSD children in this study were more likely to be female and older than those in the DBD group. Our two groups did not significantly differ on other sociodemographic variables, such as family composition or socioeconomic status.

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Examining the attachment organization of the children in the two study groups using the CAI, we firstly established the concordance between attachment models with respect to the mother and the father. In keeping with reported findings (see, e.g., Borelli et al., 2010; Shmueli-Goetz et al, 2008; Venta et al., 2014), our results showed very high concordance between maternal and paternal attachment classifications. This may suggest the integration of attachment models of different relationships into a general overarching model, though further research is needed to establish whether this had indeed occurred.

The central aim of our study was to investigate similarities and differences in attachment models in the two clinical groups. With respect to the distribution of attachment patterns, in both groups we found a very high percentage of insecure attachment, over 80%. This is in line with reported findings linking attachment with both externalizing problems (see, e.g., Fearon et al., 2010; Fearon & Belsky, 2011; Lecompte & Moss, 2014; Nunes, Faraco, & Vieira, 2013; O'Connor et al., 2011; O'Connor, Scott, McCormick, & Weinberg, 2014; Scott, Briskman, Woolgar, Humayun, & O'Connor, 2011) and internalizing problems (e.g., Groh et al., 2012; Madigan et al., 2013). Nevertheless, contrary to the literature (Madigan et al., 2016; Moss & LeCompte, 2015), a weaker association between insecurity and internalizing than externalizing problems was not found. The severe psychopathological condition of our internalizing group (hospitalized and with severe symptoms) could explain the high presence of insecurity in the SSD group.

Focusing our attention on the different insecure attachment models (dismissing and preoccupied), we found that in the SSD group, the percentage of the dismissing and preoccupied classifications was similar, around 43%. These findings are in line with those reported in a study by Kozlowska and Williams (2009), assessing children who suffered from conversion and somatoform disorders (diagnosis based on DSM-IV-TR criteria). In contrast, Waller et al. (2004) conducted a study assessing adults with somatoform disorders using the Adult Attachment Interview (AAI; George, Kaplan, & Main, 1996); they reported positive correlations between dismissing attachment and somatoform symptoms. To date, findings associating specific attachment patterns to SSDs are limited and have yielded rather mixed results. This could be linked to the different age of patients (e.g., children or adults), different selection criteria of the group (e.g., based on different criteria for the diagnosis), different tools used to measure attachment (self-reports or interviews). Furthermore, these studies did not establish the attachment classification separately for each parent. All these aspects limit the comparison of results.

With respect to our DBD group, the distribution of insecure attachment is more in line with existing findings. This is in keeping with Fearon and Belsky's (2011) contention that psychopathological conditions with high levels of externalizing problems are associated mostly with dismissing attachment. To date, few studies have looked at the concordance of attachment patterns with respect to the mother and to the father, specifically of children diagnosed with SSDs or DBDs. In the current study, difference between the father and the mother attachment was significant. This suggests that, though we may be observing the beginning of a process of integration of diverse attachment representations in middle childhood and early adolescence, it is nevertheless important to consider the different attachment organizations with respect to the mother and the father. In psychopathological conditions, these more subtle differences may help to better understand the organization of psychopathological symptoms and the strategies of regulation of dysfunctional patterns of relating. The current body of literature attests to the different contribution that mothers and fathers make to many aspects of children's development. For instance, the father's role has been shown to be related to emotion regulation in particular in boys so that paternal harsh parenting was associated with higher rates of child aggression (Chang, Schwartz, Dodge, & McBride-Chang, 2003). However, considering that the diagnostic groups differed in age and sex, these differences were controlled for in group comparisons. Only on the "three-way" classification, males showed a greater percentage of dismissing attach-

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ment to parents and females a major percentage of preoccupied attachment to parents. Therefore, we have to be careful when interpreting this finding.

For the "four-way" classification, contrary to the literature (Groh et al., 2012), disorganized attachment was not more strongly associated with externalizing than internalizing symptoms. Nevertheless, in line with our expectations (Bizzi, Castellano et al., 2015; Bizzi, Cavanna et al., 2015), we found a high presence of disorganized attachment in both groups (over 40%). Whilst this is similar to the high presence of disorganization found in young children with externalizing disorders using the Manchester Child Attachment Story Task (Green et al., 2007), existing studies that have used the CAI have generally tended to report lower percentages of disorganization. For example, Shmueli-Goetz et al. (2008) reported that 8% of the clinical group was classified as disorganized, and Borelli et al. (2010) found that 17% of the group was disorganized. Similarly, in an inpatient adolescent group, Venta et al. (2014) reported that 17% of the group was considered disorganized with respect to their attachment. One possible explanation to account for the preponderance of attachment disorganization in this group is the greater specificity and homogeneity of psychopathology in this study. Existing studies using clinical groups tended to recruit children with diverse problems and disorders, often varying greatly in manifestations and severity.

Our second main aim was to assess attachment in middle childhood and early adolescence using a semi-projective story task, the SAT. Contrary to our expectations, our study did not show that scores on insecurity subscales (loss of self-esteem, hostility, avoidance, anxiety, anguish, confusion) were higher than those on security subscales (attachment, trust himself) in both clinical groups, mainly in DBDs. Comparing the two groups, the only significant difference was found on loss of self-esteem, suggesting that children with SSDs were less compromised on socioemotional functioning than those diagnosed with DBDs. Additionally, no significant differences for gender and age were found on the security subscales.

Existing studies using Attili's (2001a) coding system have reported a strong association between insecure attachment and psychopathology, specifically in adolescents diagnosed with eating disorders (Attili, 2001b; Attili, Di Pentima, Toni, & Roazzi, 2016). In fact, Attili, Di Pentina, and Magnani (2004) showed that attachment processes were abnormal in eating disordered populations, and eating disorder diagnostic subgroups were linked to different attachment patterns. Nevertheless, examining the distribution of attachment classifications in our clinical groups, no significant differences were found. Disorganized attachment was present in only 12.5% of SSD and in 24.4% of DBD children. Even more surprising was the high proportion of secure attachment in both groups. This may be explained by the fact that the SAT is not a measure of attachment per se, but rather it captures separation anxiety from caregivers. Therefore, the severity of the conditions of SSD and DBD groups does not seem related to separation anxiety from parents.

Comparing these findings with those of the CAI, insecure and disorganized attachment were underrepresented. One possible explanation for the underrepresentation of attachment disorganization in the SAT is that the coding was based exclusively on an analysis of the verbal narratives produced, while in the CAI behavioral indicators of possible disorganization were evaluated alongside a discourse analysis of the narrative (Shmueli-Goetz et al., 2008). It is also noteworthy that the original version of the SAT (Klagsbrun & Bowlby, 1976) did not assess disorganization and it has been a more recent addition to the Italian version, which has suggested the need for further validation.

Our third main aim was to assess attachment using a self-report measure, the KSS for the younger patients (age 8-12). On the KSS, perceived security with respect to parents in the DBD group was lower than that in the SSD group. One possible interpretation of this finding is that child's disruptive actions serve to call upon parent/s, who may otherwise not be available, to care and engage with their child. Therefore, in line with existing findings (see, e. g., Groh et al., 2012; Madigan et al., 2013; Moss & LeCompte,

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2015), the association between externalizing disorders and insecurity appeared stronger than the association between internalizing disorders and insecurity. In addition, on KSS children of both groups perceived their mother as safer than their father. This datum, as suggested by De Minzi (2010) underlined that children's attachment security with mothers and with fathers were two constructs somewhat independent and linked differently with children's social-emotional outcomes. However, considering that the diagnostic groups differed significantly in age and sex, we controlled these variables and results revealed no significant effects.

The final aim of the study was to compare relations between the different attachment measures with the findings broadly confirming our hypothesis. The lack of significant relations among these three different attachment tools underlines the importance of considering the findings separately (Borelli et al., 2016; Venta et al., 2014). In fact, it is notable that the SAT is not a measure of attachment per se but rather it captures separation anxiety from caregivers; the KSS assesses the extent to which children view their parents as sources of psychological security and does not capture disorganization; the CAI assesses the children's self-representations and representations of primary attachment relationships (Internal Working Model).

Our findings fit within a developmental psychopathology framework, which contends that early experiences, in combination with risk and protective factors, interact to shape a child's trajectory of development (Fearon & Belsky, 2011). Broadly, the findings of this study suggest that examining attachment representations of children with different psychopathological conditions can add useful information with respect to the difficulties and use of defensive strategies that these children deploy. A better understanding of attachment, in its various dimensions, as a useful indicator of the socioemotional functioning of young patients suffering from SSD and DBD, may have important clinical implications (Brinkmeyer & Eyberg, 2003; Ciechanowski, Walker, Katon, & Russo, 2002). Data on high presence of disorganization in both clinical groups and on different security perception of parents may solicit specific modes of treatment for these patients. As cited by Bakermans-Kranenburg, Van IJzendoorn, and Juffer (2005), interventions for attachment disorganization suggested focusing on enhancing sensitive parenting. Special attention might focus not only on improving the quality of mother-child interactions among disorganized dyads, but also on father-child interactions, promoting warmth in the parent-child relationships, or enhancing secure attachment-related variables. Therefore, the family involvement is a necessary condition for child improvement and to guarantee his/her well-being.

The current study is unique in several respects. Firstly, unlike existing studies who report on clinical groups that are often composed of a heterogeneous group of children with mental health problems or disorders, our study recruited children with very specific psychopathological conditions (see, e. g., Borelli et al., 2010; Shmueli-Goetz et al., 2008; Venta et al., 2014). Secondly, studies in middle childhood and adolescence rarely assessed attachment concurrently with psychopathology, using narrative measures (they generally used self-report), which are complex tools for training, administration, and coding (Nunes et al., 2013). Thirdly, attachment studies on SSD have rarely been conducted in childhood (Kozlowska & Williams, 2009).

Nevertheless, this study has several limitations that are noteworthy. First, the sample was limited; a bigger sample might be useful in order to further analyze our results. Secondly, this study did not include another measure of child symptomatology, but patients had a previous diagnosis carried out by expert child mental health specialists. Additionally, we considered a self-report measure (the KSS) only for younger children (8-12 years). This is main a methodological limitation inherent in the study design, in which there is no self-report attachment measure that captures this wide age range (8-15 years).

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