


## Article

# The Activation Relationship to Father and the Attachment Relationship to Mother in Children with Externalizing Behaviors and Receiving Psychiatric Care

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**Abstract:** The activation relationship refers to the emotional bond a child develops with a parent that helps ensure the regulation of risk-taking during child exploration of the surrounding environment. As a complement to Bowlby's attachment theory, activation relationship theory provides a greater understanding of the impact of fathering on child development, focusing primarily on parental stimulation of risk-taking and control during child exploration. The overarching objective of this article is to better understand the association between children's relationship quality with both parents, via the activation to father and the attachment to mother relationships, and child externalizing behaviors in a clinical sample. Fifty two-parent families (40 boys and 10 girls) were recruited at random from a population of children receiving treatment at the perinatal and early childhood psychiatry clinic. Results with 44 children (with complete cases) showed that overactivated preschoolers displayed more externalizing behaviors than did children with either an activated or an under-activated relationship with their father. Results also showed that children with a disorganized-controlling caregiving attachment to their mother marginally presented with higher levels of externalizing behavior.

**Keywords:** externalizing behavior; activation relationship; attachment; father; evolutionary perspective

## 1. Introduction

Externalizing behavior is a form of behavior that encompasses physical aggression, defiance, angry outbursts, hyperactivity and inattention. This construct is observable in infants from the age of eight months onwards and is remarkably stable over time [1]. Such behaviors are part of the normal behavioral repertory of young children, but toddlers who display them more frequently are at high risk of developing behavioral problems [2,3], resulting in negative outcomes in childhood, adolescence and adulthood such as social and academic difficulties [4], substance use, unstable employment and relationship difficulties [2].

Using a clinical sample of preschoolers, the overarching objective of this article is to better understand whether children's relationship quality with both parents, via the activation to father and the attachment to mother relationships, is associated with child externalizing behaviors. Both the attachment and activation relationship theories are rooted in an evolutionary perspective. The activation relationship is a parent-child attachment

bond that develops to foster regulation of risk-taking in children as a function of child temperament [5]. As a complement to Bowlby's attachment theory, the activation relationship theory serves to further our understanding of the impact of parenting, in particular fathering, on child development, focusing primarily on both parental stimulation of risk-taking and parental control during child exploration. It considers risk-taking as a basic need that enables children to develop motor and competitive skills, explore their physical and social environments and adapt appropriately. According to attachment theory [6], child feelings of self-confidence result from parental sensitivity to child comfort-seeking in times of distress, with their parents being protective by remaining at close distance with the child. However, according to activation relationship theory [7], child feelings of self-confidence also result from parents' encouragement of risk-taking during children's exploration of the environment, with parents being protective through discipline (i.e., limit-setting and control). From this perspective, maternal and paternal functions in couples may be seen as complementary, whether the couple is composed of same or different sex parents. Although children are believed to develop both types of relationships with each parent, generally speaking, women/mothers tend to act as the primary attachment figure (performing maternal functions), while men/fathers tend to serve as the primary activation figure (performing paternal functions).

Activation relationship theory predicts the existence of sex differences, with fathers having a greater tendency than mothers to activate children, and both parents activating boys more than girls [5]. It also suggests that under-activation (overprotection) should be associated primarily with internalizing behaviors while overactivation (lack of adequate discipline) should be associated primarily with externalizing behaviors [5,8]. Under-activated children are expected to engage in little exploration when there is no parent near at hand, and to be passive and withdrawn when confronted with novelty. Activated children are expected to be self-confident and prudent in their exploration and respect limits set by the parent, while overactivated children are expected to be reckless and not to comply with limits set by the parent.

Results of previous studies have confirmed the existence of sex differences in the activation relationship in both toddlers [9] and preschoolers [10], demonstrating that fathers do in fact activate their sons more than their daughters. Child temperament (shyness, impulsivity and sociability) has also been associated to child activation level [5]. Additionally, and most importantly, paternal stimulation of risk-taking has been associated with activation levels even after taking into account child sex and temperament, the child attachment relationship to father and emotional support [8]. Moreover, the association between the child activation relationship to father and internalizing behaviors in children has been confirmed in normative samples of both toddlers [11] and preschoolers [10], with under-activated children displaying significantly more internalizing behaviors. Finally, a previous study with the current clinical sample of preschoolers [12] showed the father-child activation relationship to be a protective factor in the relation between insecure or disorganized attachment to mother and child anxiety. However, Dumont and Paquette [11] found no association between the father-child activation relationship in toddlers and externalizing behaviors at age three in a small normative sample of children.

It has yet to be determined whether mothers and fathers play distinct or similar roles in young children's development of externalizing behaviors [3]. While studies have generally concluded that externalizing behavior is more closely tied to mothering than to fathering, this may be due to the fact that most studies have focused on mothers or on families in which the mother is the primary caregiver [3,13]. Recent studies have placed particular emphasis on the father's role in discipline or control. Many researchers have linked paternal absence and poor quality of father-child relationship to the well-known higher incidence of conduct problems among boys [14]. Paternal hostility has been found to have a greater effect than maternal hostility on child aggression, especially in boys [15]. Jaffee, Moffitt, Caspi and Taylor [16] have shown antisociality in fathers (but not in mothers) to be a predictor of child externalizing behaviors, even after controlling for genetic factors. Studies also suggest

that fathers play a much larger role than mothers in the socialization of children's emotions, especially in anger regulation [17]. High quality of the father-child rough-and-tumble play (RTP) has been negatively associated with behavior problems in children after controlling for father involvement in caregiving tasks [18]. Flanders and colleagues [19,20] have shown that when fathers are not dominant over their preschool children, the more frequent the RTP, the more physically aggressive children are and the less they regulate their emotions five years later. Finally, a study conducted by Karreman et al. [13] demonstrated that while maternal and paternal parenting are both linked to externalizing behaviors and impulsivity, the difference between the two is that positive control by the father is more likely to buffer the association between child impulsivity and externalizing behaviors, while maternal positive control does not. In the latter study, children were found to be more compliant to fathers than to mothers.

The child insecure attachment relationship is also considered a risk factor in the development of child externalizing behaviors. A meta-analytic study by Fearon, Bakermans-Kranenburg, van IJzendoorn, Lapsley and Roisman [21] of children 12 years and younger revealed a small but significant association between attachment insecurity (mostly to mother) and externalizing behaviors, although only for the avoidant (category A;  $d = 0.12$ ) and the disorganized attachment classifications (category D;  $d = 0.34$ ). Disorganization is a breakdown of the attachment system, a collapse of organized (category A, B or C) attachment strategies that children would normally use to access their attachment figure to resolve distress, whether in a secure or insecure manner [22]. Disorganization is more likely to be observed in children who have been subjected to adverse environmental conditions compared to the ancestral environment in which the adaptive mechanism of attachment has evolved (such as maltreatment, maternal depression and frightening parental behaviors) [23,24]. One could say that disorganized behaviors, which most often result from children being afraid of the people who normally should comfort them during times of distress in daily life, fall outside our species' adaptive range [25].

Also, Fearon et al. [21] found larger effects between externalizing behavior and insecure attachment disorganization for boys ( $d = 0.35$ ) than for girls ( $d = -0.03$ ), and for clinical samples ( $d = 0.49$ ) than for nonclinical samples ( $d = 0.26$ ). Although the weight of the association between externalizing behavior and attachment is higher for clinical samples, it remains that very few studies were used to compute this combined effect size and most attachment relationships were measured with mothers. More recently, Tharner et al.'s [26] population-based cohort study with 606 mother-child dyads showed no significant difference in either externalizing or internalizing behaviors between secure children (category B) and those classified in either one of the three other insecure categories of attachment. Hence, the association between the quality of the attachment relationship and externalizing behavior is not clear, and a closer look at both the father- and the mother-child relationships should contribute to a better understanding of child externalizing behavior.

This study's objectives were two-fold. The first objective was to examine whether child externalizing behavior varied as a function of the father- and mother-child relationships. In line with the literature presented in the previous sections, we formulated two hypotheses. Precisely, we first expected that children with higher levels of child externalizing behaviors would more likely be involved (1) in an overactivated relationship with their father, in comparison to activated or under-activated relationships, and (2) in a disorganized attachment relationship (D) with their mother than in an organized attachment relationship (A, B and C). The second objective was to test whether overactivation to father and attachment disorganization to mother hold as potentially significant predictors of child externalizing behaviors when they are both considered into one model. Given that the number of families in our clinical sample is small, we limited analyses to the groups targeted in the hypotheses.

## 2. Materials and Methods

### 2.1. Participants

Fifty two-parent families (40 boys and 10 girls) with a child between 2 and 5 years old were recruited at random from a population of children receiving treatment at a children's hospital (Sainte-Justine University Hospital). Reasons for referral to the clinic were child behavior problems (33%), developmental problems (language, motor, etc., 20%), anxiety (12%), suspected attention deficit disorder with or without hyperactivity (10%), sleep problems (8%), pervasive developmental problems (6%), mother-child relationship or separation difficulties (6%), sensory regulation processing problems (3%) and other non-specified problems (2%). It should be noted that reasons for referral did not necessarily correspond to the psychiatrist's subsequent diagnosis. After evaluation, children diagnosed with a pervasive developmental disorder or intellectual disabilities were excluded from the study. Children were referred to this specialized clinic primarily because they displayed considerable distress that significantly affected their daily functioning. They had received treatment services prior to being referred to the clinic, where they received more specialized assessment and/or treatment. Both parents gave written consent to participate, and the study protocol was approved by the ethical committee of the Sainte-Justine University Hospital.

### 2.2. Procedure

The questionnaires and filmed observational procedures (preschool child Risky Situation with father and preschool child attachment Strange Situation Procedure with mother) were part of the clinic's patient assessment and management protocol. While all families admitted to the clinic completed the questionnaires, only randomly selected families were invited to take part in the observational procedures, which were conducted on the clinic's premises. The aim of the assessment protocol was to help establish a multidimensional diagnosis that would better guide children's treatment.

The assessment protocol was presented to the families during an initial meeting with one of the team's child psychiatrists, and parents who wished to participate signed a consent form. Self-report questionnaires were given to the parents to be completed at home and an appointment was made for questionnaires to be returned and the observational procedures carried out. The order of the filmed situations was reversed each time to avoid data collection bias. Parents received no monetary compensation.

### 2.3. Instruments

#### 2.3.1. Questionnaire

Externalizing behaviors: The fathers completed the Child Behavior Checklist (CBCL), 1.5–5 Years Parent Version [27]), which is a questionnaire comprising 100 items and seven subscales grouped together into three main scales: Internalizing Problems (IP), Externalizing Problems (EP) and Total Problems score. The EP scale (24 items) consisted of two subscales: aggressive behavior, and attention deficit/hyperactivity. The aggressive behavior subscale included items on aggression towards objects, animals and people, as well as on defiance, disobedience, anger and frustration. Children with T-scores greater than 63 are considered as having a score above the clinical range. Achenbach and Rescorla [27] have shown the CBCL to have good validity and test-retest reliability. The EP scale demonstrated excellent internal consistency ( $\alpha = 0.93$ ) using the data from this study.

#### 2.3.2. Observational Procedures

Child activation relationship to father: The child activation relationship to father was assessed with the Risky Situation (RS), validated for 1- to 5-year-old children [5,10]. This observational procedure lasts approximately twenty minutes and is conducted in a room unfamiliar to the child containing toys, a stepladder approximately 1.8 m high and a male stranger. The RS is divided into 6 structured stages, each lasting three minutes, with the exception of the first stage which lasts one minute. During these various stages, the child is

invited to take a social (interacting with an increasingly intrusive stranger) and a physical risk (climbing a stepladder), while the parent is asked not to interact with the child in order to avoid encouraging or prompting the child to explore. However, the parent is allowed to comfort the child and ensure the child's safety at all times if needed. At Stage 1, the child is left alone with the father in the unfamiliar room with toys. At Stage 2, a male stranger enters the room and engages in parallel play without interacting with the child unless he or she seeks interaction. At Stage 3, the stranger initiates interaction if the child has not already done so and proposes that the two play together. The stranger then becomes quiet again and progressively introduces five increasingly intrusive sub-stages. In Stage 4, the toys are put away and the stepladder is revealed, and two appealing toys for the child are hung from the top of the ladder. If the child does not start climbing the stepladder in the first 90 s, the stranger tells the child he or she could climb the stepladder if desired. In Stage 5, the stranger instructs the father to ask the child to climb the stepladder to get a toy and come down with it. Finally, in Stage 6, the same two appealing toys are once again hung from the top of the stepladder, and the father is instructed to forbid the child from climbing the stepladder if the child tries to climb up again.

Children were classified according to the highest number of criteria checked off in a five-criteria coding grid. The five criteria were avoidance/hyper-sociability by the child with regard to the stranger, initiation of interaction with the stranger (social risk), spontaneous or non-spontaneous use of the stepladder (physical risk), caution shown during exploration and obedience to limits set by the father. Children are classified into one of three classifications and each classification has a corresponding scale on which children receive a score ranging from 1 to 5. Activated children interact with the stranger but might withdraw when intrusive. They tend to climb the stepladder carefully, are confident when exploring their environment and obey when their fathers give instructions or set limits. Under-activated children tend to be immobile and inhibited from the very beginning of the interaction with the stranger. They do not take the initiative of climbing the stepladder. They engage in minimal exploration, stay close to their fathers and are more passive. Overactivated children are at ease with the stranger throughout and tend to impulsively climb the stepladder without paying attention to what they are doing. They are more reckless and show little or no obedience to limits set by their fathers. Past studies have found fathers of activated children to encourage exploration while keeping their children safe by setting clear limits, while fathers of such under-activated children were more overprotective and those of overactivation children set few or no limits during exploration [5,14]. Two raters blind to other study measures obtained very strong inter-rater reliability for the three-group classification ( $Kappa = 0.91$ ) using all video recordings. The full procedure and training program are available from the first author.

Child attachment to mother: Child attachment to mother was assessed with the preschool version of the Strange Situation (SSP) [28]. This observational procedure is conducted in a room unfamiliar to the child, with toys adapted to the child's age. This preschool procedure is divided into four structured episodes including two separation-reunion episodes. The child is left alone during the two separations (lasting 3 and 5 min) in order to progressively activate the child's attachment system. The task is explained to the mother and she is given no specific instructions as to how to behave other than to act as she normally would with her child. This preschool separation-reunion procedure has been repeatedly validated in studies showing associations with child social skills and emotional adjustment [29,30]. It has also been used with diverse low-risk, high-risk and clinical samples [31,32], as well as associated with parent-child quality of interactions at home [33].

The procedure was filmed and subsequently coded by two independent raters who were not informed of children's scores on other study variables. The raters classified child behaviors at the time of the reunions using the Preschool Attachment Classification Coding System [28]. Children are classified into one of six main classifications and each classification has a corresponding scale on which children receive a score ranging from



1 to 9. Children with a secure (B) attachment have comfortable interactions with their parents at reunions and use the parent as a secure base for exploration. Children with an insecure-avoidant (A) attachment display minimal emotion, even during reunions. They tend to ignore and avoid the mother's attempts at verbal interaction. Children with an insecure-ambivalent (C) attachment alternately demonstrate resistance or oppositional behaviors, and tend to show excessive immaturity in the form of passivity and dependent behaviors. Children with a disorganized-controlling (Dcont) attachment tend to organize interactions with their parent by directing their parent's attention and behavior either in a caregiving, overly protective way (Dcare), or punitive, hostile (Dpun) way. Both types of children are engaged in a role-reversal pattern with their mothers [34]. Finally, children with a behaviorally disorganized or insecure-other (category D or IO) attachment are unable to use their mothers as a secure base, display no clear attachment (A, B or C) or controlling strategy (Dcare or Dpun), or combine patterns of avoidant and ambivalent attachments. Such children may also display incomplete or disoriented sequences of behaviors, confusion or apprehension. Two raters obtained excellent inter-rater reliability for the four-group classification ( $Kappa = 0.75$ ) using 23 video recordings taken from the sample used in this study.

#### 2.4. Statistical Analyses

Analyses were conducted using SPSS version 26. Descriptive statistics were computed on the characteristics of the sample and the study variables (child activation to father, attachment to mother and behavior problems). Then, *t*-tests and correlations, as preliminary analyses, were conducted to examine if socio-demographic variables (child age and sex, parental age and level of education) were associated with the study's dependent variable (externalizing behaviors). We also examined if activation to father and attachment security to mother varied as a function on child sex. Then, group contrasts, with *t*-tests, compared levels of externalizing behavior on activation and attachment groups based on a-priori hypotheses: (1) Overactivated > Activated children, (2) Overactivated > Under-activated children and (3) Disorganized (D, Dcare and Dpun) > Organized children (A, B and C). To remain conservative (given that this sample is small), only those three targeted contrasts were performed and two-tailed *p*-values were reported. For each contrast, we computed (1) a *d* effect size using the *t* and *df* values with an online calculator by Becker [35], and (2) a power analysis, with the G\*Power software [36] to indicate the percentage probability of obtaining significant results. Finally, a linear regression was performed to test if overactivation to father and attachment disorganization to mother held as significant predictors of externalizing behaviors when they were both considered into one model. A power analyses was also performed for this regression analysis.

### 3. Results

#### 3.1. Descriptive Statistics: Sample Characteristics

Descriptive statistics indicate that the mean age for children in this sample was 44.50 months (standard deviation (SD) = 9.31; range = 29 to 64 months), for fathers, 38.76 years (SD = 5.15; range = 27 to 46 years), and for mothers, 37.37 years (SD = 5.87; range = 26 to 50 years). The sample was mostly composed of Caucasian Canadian-born families, with immigrant families (from Europe and North America) accounting for 17% of the sample. Average number of years of schooling was 14.55 (SD = 4.16) for fathers and 16.06 (SD = 2.29) for mothers. Finally, 94.1% of the children lived with both parents, and 11.7% were adopted and had lived with their adoptive parents for more than one year. Due to missing data (e.g., incomplete child behavior problems questionnaires), the final number of cases analyzed was 44 (36 boys and 8 girls).

### 3.2. Descriptive Statistics: Child Activation to Father, Child Attachment to Mother and Behavior Problems

Table 1 shows the dyads' distribution according to categories of child activation to father and attachment to mother relationships. The table reveals that almost 64% of the children in this clinical sample have an activated relationship with their father. Only 34% of the children exhibit a secure attachment to their mother, which is near half the percentage usually observed in the general population [37]. Most of the children in the sample (52%) display disorganized attachments (D/IO, Dcare or Dpun) to their mother, with three quarters of them being behaviorally disorganized (D/IO). Means scores for child activation to father scales and for child attachment to mother scales are presented in Table 2. Finally, data indicate that the mean level of externalizing problem for the sample is 64.59 (SD = 10.79), with 43% of the children having scores above the clinical threshold.

**Table 1.** Distribution of dyads as a function of the six mother–child attachment and the three father–child activation categories.

Child Attachment to Mother	Child Activation to Father			Total <i>n</i> (%)
	Underactivation	Activation	Overactivation	
Secure (B)	3	9	3	15 (34.1)
Insecure				
Avoidant (A)	1	1	0	2 (4.5)
Ambivalent (C)	0	3	1	4 (9.1)
Beh. Disorg. (D/IO)	3	11	3	17 (38.6)
Disorg. Controlling Caregiver (Dcare)	1	3	0	4 (9.1)
Disorg. Controlling Punitive (Dpun)	1	1	0	2 (4.5)
Total <i>n</i> (%)	9 (20.5)	28 (63.6)	7 (15.9)	44

Note: Beh. Disorg: Behaviorally disorganized; Disorg: Disorganized.

**Table 2.** Mean scores and standard deviations (SD) for child activation to father scales and child attachment to mother scales.

Parent–Child Relationships	Descriptive Statistics	
	Mean	SD
Child to father activation relationship		
Under-activation	2.16	1.25
Activation	2.61	1.02
Overactivation	1.30	1.29
Child to mother attachment relationship		
Secure (B)	4.20	1.56
Insecure		
Avoidant (A)	3.62	1.96
Ambivalent (C)	4.14	2.34
Beh. Disorg. (D/IO)	4.08	2.43
Disorg. Controlling Caregiver (Dcare)	1.53	1.53
Disorg. Controlling Punitive (Dpun)	1.75	1.54

### 3.3. Preliminary Analyses

Preliminary *t*-tests and correlations indicated no significant associations between sociodemographic variables (child age and sex, parental age and level of education) and externalizing behaviors. Therefore, subsequent analyses did not include any control variables. Also, *t*-tests revealed no significant difference between the mean activation ( $t(42) = 1.53, p = 0.13$ ) or security ( $t(42) = 1.49, p = 0.16$ ) scores for boys and girls in this sample.

### 3.4. Child Activation Relationship to Father and Child Externalizing Behaviors

Results (Table 3) indicated that children with an overactivated relationship with the father had (1) significantly higher externalizing problems than children with an activated

relationship (strong effect size of  $d = 1.03$ ) and (2) marginally higher scores than those with an under-activated relationship (strong effect size of  $d = 1.13$ ). Power analyses of these results respectively indicate a 30% and 56% probability of obtaining significant results.

**Table 3.** Child externalizing behavior (T-score) as a function of child activation to father categories.

Behavior problems	Child activation to father categories			<i>t</i> -tests a-priori hypotheses
	Under-activated n = 9 M (SD)	Activated n = 28 M (SD)	Overactivated n = 7 M (SD)	
Externalizing	65.00 (10.12)	61.96 (10.50)	74.57 (7.23)	Over. > Activated * Over. > Underactivated †

Note. Over.: Overactivated. \*  $t(33) = -2.98$   $p = 0.005$ ; †  $t(14) = -2.11$ ,  $p = 0.053$ .

### 3.5. Mother–Child Attachment and Child Externalizing Behaviors

Table 4 presents the means of externalizing behaviors for the six attachment categories. A *t*-test, based on an a priori hypothesis, comparing ABC categories (mean = 62.62, SD = 9.19) with all D categories as a combined group (mean = 66.39, SD = 11.98) showed no significant difference between the two attachment groups on externalizing behavior ( $t(42) = -1.16$ ,  $p = 0.154$ ,  $d = 0.36$ ). A power analysis of this result indicates a 41% probability of obtaining significant results.

**Table 4.** Child externalizing behavior (T-score) as a function of child attachment to mother categories.

Behavior problems	Child attachment to mother categories					
	A n = 2 M (SD)	B n = 15 M (SD)	C n = 4 M (SD)	D/IO n = 17 M (SD)	Dcare n = 4 M (SD)	Dpun n = 2 M (SD)
Externalizing	59.50 (2.12)	63.40 (9.35)	61.25 (11.90)	64.94 (13.25)	73.50 (4.73)	64.50 (6.36)

Note. A: Insecure avoidant; B: Secure; C: Insecure Ambivalent; D/IO: Disorganized/Insecure other; Dcare: Disorganized controlling caregiver; Dpun: Disorganized controlling punitive.

### 3.6. Contribution of Both Types of Parent–Child Relationships to Child Externalizing Behaviors

A multiple regression was performed to assess the contribution of each of the two types of relationships in predicting child externalizing behaviors (Table 5). Given that the number of participants in the overactivation category was small, the continuous overactivation score was used in the regression. As for the disorganized category, we decided to use the continuous score of disorganized controlling caregiving scale because the mean score of externalizing behaviors for Dcare children is clearly higher than the scores for the other attachment categories. There was no significant correlation between the two predictors ( $r = -0.11$ ,  $p = 0.451$ ), indicating a lack of collinearity between variables. Results of the regression indicated that when including both parent–child relationship variables, overactivation remains a significant predictor of child externalizing behavior ( $\beta = 0.31$ ), while disorganized controlling caregiving behaviors have a marginal effect ( $\beta = 0.25$ ). The model including both variables explains 14% of total variance. A power analysis of these results indicates a 62% chance of obtaining significant results.

**Table 5.** Multiple regression on child externalizing behavior ( $n = 44$ ).

Predictor Variables	$R^2$	$\Delta F$	$\beta$	$t$	$p$
Model	0.141	3.35			0.045
Overactivation			0.31	2.13	0.039
Disorganized controlling caregiving			0.25	1.71	0.096



#### 4. Discussion

Our results confirm the hypothesis of an association between father–child overactivation and externalizing behaviors in preschoolers, at least in this clinical sample composed essentially of boys referred to a child psychiatry clinic primarily for externalizing behaviors. Although boys generally have a higher externalizing behavior mean score than girls [38], no significant difference can be noted in our clinical sample. Also, in contrast with the few previous studies with small samples of the general population [5,10], the boys in our sample did not show a significantly higher activation score than girls nor were they more securely attached to their mothers than girls. It is important that future research be conducted with a large sample of the general population and a large clinical sample to verify whether this association between the child externalizing behavior and activation relationship to father remains present, and also to determine whether it holds mainly for boys.

The activation relationship theory expects the child activation relationship to be more closely associated with externalizing and internalizing behaviors in comparison to the child attachment relationship [5,8]. Preliminary data of another study shows this to be the case for internalizing behaviors when the activation and attachment relationships are compared for the same father–child dyad [11]. An important next step will be to examine whether the child activation relationship with mother, beyond that of the child attachment quality to mother, adds to the prediction of externalizing and internalizing behaviors. It is a limitation of this study that these two types of relationships were not examined towards both parents. It is important that future research compare the activation relationships towards both parents for the same child.

Results of the current study did not show more externalizing behaviors in children with a disorganized attachment (all groups combined) in comparison to children with an organized attachment. This result is surprising in a sample where 52% of children had a disorganized attachment to their mother. The meta-analytic study by Fearon et al. [21] found a close to moderate effect size ( $d = 0.49$ ) between disorganized attachment (D) and child externalizing behaviors in a clinical sample. In the current study, we found a lower but of similar magnitude effect,  $d = 0.36$ . Given the small sample of the current study, we need to interpret this result with caution.

The high percentage of children in an activated relationship with their father in this clinical sample (64%) is surprising given that a similar rate has been found in the general population. Yet, as expected, overactivated children showed more externalizing behaviors. Child overactivation indicates that the father was unable to regulate risk-taking, aggression or impulsivity by setting clear limits. In such a context, the child develops an internal working model that is likely to prompt greater risk-taking to satisfy their needs, for example using physical aggression (rather than cooperation) when competing for social status and environmental resources. Several researchers have hypothesized an association between the lack or unpredictability of resources and different attachment categories [39]. According to Paquette [25], the activation relationship seems to be the interactive process through which children develop competitive strategies for access to resources. Resources are everything that is external to an organism and necessary to its survival development (both physical and psychological), reproduction and the achievement of ideals [40]. Children activated by their parent would have a wide repertoire of behaviors to cope with diverse competitive situations: they would be expected to use assertiveness and, if necessary, aggression and dominance in confrontational contexts with threatening children, but to prefer the use of cooperation whenever possible [25]. Their prosocial abilities would also permit them to achieve leadership. Under-activated children would tend to avoid conflicts, submit to others and leave resources to those who demand them [25]. Overactivated children would tend to consistently use aggression and other antisocial or risky behaviors regardless of the context, and to try to achieve high social dominance status to maximize immediate access to resources [25]. This approach is in line with the results of this study, indicating that overactivated children show the highest levels of externalizing behaviors.

Results of a regression including both types of relationships indicated that child externalizing behavior was significantly associated with overactivation towards the father, even while taking into account the marginal association found between child externalizing behavior and disorganized controlling-caregiving behavior towards the mother. Gaumon et al. [12] showed that children of the same sample, classified as disorganized controlling-caregiver towards their mothers, displayed the most anxiety. Disorganized-controlling caregiving occurs in relationships where the mother is unable to regulate her emotions in response to stress, thereby also failing to help the child regulate their emotions [23]. This pattern heightens the child's distress and prompts a reversal of roles that is likely to lead to child internalizing problems [30]. However, when it comes to externalizing problems, the results of this study suggest that the child activation relationship to the father might play a greater role than the relationship with the mother. Moreover, descriptive data of the current study indicates that the children involved in overactivated relationships with their father not only exhibited high levels of externalizing behaviors, but levels that also exceeded the clinical range.

Consistent with a family perspective, future longitudinal studies, with bigger samples, and including clinical and non-clinical group children, are needed to assess child attachment and activation relationships with each parent in order to verify the complementarity of maternal and paternal functions in ensuring optimal child adaptation to the environment. The association found between child overactivation to father and externalizing behaviors in a clinical sample suggests that the father-child relationship is likely to play a significant role. Are fathers too controlling or too permissive with children? Do they take part in activities with the child? Are they able to establish boundaries for the children during risky activities and have them follow their instructions? Can fathers encourage children to take risks commensurate with their skill level and age? Such questions may also help inform the evaluation process. This study supports the role of fathers as actors in children's emotion regulation skills, as such, their involvement in the intervention process of children with clinical problems is also suggested. The father-child activation relationship could be an important protective factor in children's socio-emotional functioning, especially in families where children have developed a dysfunctional, disorganized relationship with their mother.

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