

# Perception of Parenting Style by Children with ADHD and Its Relation with Inattention, Hyperactivity/Impulsivity and Externalizing Symptoms

María Fernanda Molina<sup>1</sup> · Francisco Martín Musich<sup>2</sup>

Published online: 31 October 2015  
© Springer Science+Business Media New York 2015

**Abstract** Children's perception of their parents' behavior is very important for their adjustment. Raising a child with Attention-Deficit/Hyperactivity Disorder (ADHD) can be particularly challenging. However, little is known about how children with ADHD perceive their parents' child-rearing style. The main purpose of this paper is to study how children with ADHD perceive acceptance and control in parent-child relationships and this perception's relationship with inattention, hyperactivity/impulsivity, and externalizing behaviors. Participants were children between 7 and 13 years old with ADHD who were attending psychotherapy (ADHD), children without ADHD who were attending psychotherapy (APG), and children with unknown ADHD status who were not attending psychotherapy (NPG). Furthermore, one parent of each child participated in the study. An analysis of variance (ANOVA) showed that children with ADHD perceived higher levels of pathological control in their relationships with their mothers than did APG and NPG children. NPG children perceived higher extreme autonomy than ADHD and APG children. Linear regression analyses revealed that

the perception of pathological parental control and extreme autonomy predicted externalizing symptoms in children with ADHD. The perception of maternal acceptance and pathological control predicted inattention in APG children. Also, perceived maternal pathological control and perceived paternal acceptance predicted externalizing symptoms in APG children. Thus, these results show the importance of taking into account children's perception of their relationships with their parents in addition to parental reports of their own behavior.

**Keywords** Attention-Deficit/Hyperactivity Disorder · Externalizing behavior · Parenting style · Children · Perception

## Introduction

Attention-Deficit/Hyperactivity Disorder (ADHD) is a persistent pattern of inattention, hyperactivity, and impulsivity that is more severe and more frequently displayed than is typically observed in other individuals at the same developmental stage. ADHD is one of the most prevalent disorders in childhood, and its symptoms have a negative impact on children's functioning (American Psychiatric Association [APA] 2002).

The wide range of difficulties linked to ADHD has led to its worldwide recognition as a public health problem (Brown 2003). Therefore, numerous studies have been developed focusing on different aspects of the disorder (Scottish Intercollegiate Guidelines Network [SING] 2009). Typically, research has centered on biological and cognitive factors. However, there is growing interest in psychosocial factors linked to ADHD (Roselló et al. 2003). There is consensus that ADHD has a biological base, but it

✉ María Fernanda Molina  
fernandamolina@psi.uba.ar

<sup>1</sup> Argentine National Council of Scientific and Technological Research (CONICET) Secretary of Science and Technology, University of Buenos Aires (UBACyT), Gral. Juan Lavalle 2353, C.P. C1052AAA Ciudad Autónoma de Buenos Aires (C.A.B.A.), Argentina

<sup>2</sup> Department of Neuropsychology, ETCI Foundation/Department of Neurology – Eva Perón Acute General Hospital/University of Buenos Aires, Favaloro University, Ciudad Autónoma de Buenos Aires (C.A.B.A.), Argentina

also involves a complex social context in which the family plays a role in the expression of symptoms. Family relationships are not the cause of ADHD, but they can influence the persistence and severity of symptoms (Johnston and Mash 2001; Roselló et al. 2003). Moreover, the family and particularly parents can serve as a protective factor for children with ADHD. They can help children create an appropriate environment to fight their difficulties and build their natural strengths (Scandar 2003).

Parenting is a complex activity that involves multiple behaviors that influence child development. However, rather than specific parenting practices, it is the more general parenting patterns which affect the wellbeing of children (Darling 1999). These parenting styles are a constellation of attitudes toward children that are communicated to the child and together create the emotional climate in which parental behaviors manifest themselves (Darling and Steinberg 1993). Table 1 summarizes the definitions of specific constructs in parenting literature.

Raising a child with ADHD can be a challenge for parents which puts their parenting abilities to the test (McIntyre and Hennessy 2012). Parents of children with ADHD perceive high stress levels derived from the difficulty in managing their child's behavior and they have more marital problems and social isolation (e.g. feeling publicly embarrassed by the behavior of their child), as well as economic difficulties due to the cost of treatment and education of children with ADHD (Barkley 2006; Roselló et al. 2003; Scandar 2003). Moreover, these parents have to deal with educational and health systems (Modesto-Lowe et al. 2008).

Current theoretical paradigms of the parent–child relationship emphasize a transactional relationship between poor emotional regulation in early childhood and the development of coercive parent–child interactions (Scaramella and Leve 2004). A difficult temperament in children may be related to more negative parenting strategies or more anger or coercion by their parents (Deault 2010). In this approach, the inattention, hyperactivity, and impulsivity in children with ADHD may frequently evoke harsh, hostile, and negative emotional reactions in their parents. In turn, a lack of parental responsiveness could be associated with difficulties in self-regulation of children's behavior, which, as hypothesized in this approach, evokes oppositional defiant behavior and behavioral problems in children. This then makes it more difficult to develop a positive parenting style, perpetuating the problem as a vicious circle (Deault 2010; Johnston and Jassy 2007; Johnston et al. 2002).

There are two alternative approaches in the study of mental disorders: a categorical and a dimensional approach. In a categorical approach, subjects are classified using cut-off points in accordance with a consensus criteria

based on the presence of symptoms. In a dimensional approach, disruptive behavior disorders are considered as an end point of a normal trait. This latter perspective has gained particular interest in the research field in recent years (see Scholtens et al. 2012 for a review).

There are many studies that assess the parenting style of parents of children with ADHD from a categorical perspective, that is, which compare them to parents of children without ADHD. Results of the studies that work with middle-childhood participants (7–13 years old) show that their parents tend to perceive themselves as less warm, involved, responsive and caring (Alizadeh et al. 2007; Gerdes et al. 2003; Keown 2012). They also frequently report more extreme forms of control, such as corporal punishment, power assertion, intrusiveness (Alizadeh et al. 2007; Gerdes et al. 2003; Keown 2012), and parent inconsistency (Ellis and Nigg 2009) than parents of children without ADHD. In all of the studies mentioned, both parents provided information. Also, a study that covers only mothers' perceptions of their parenting behavior revealed that they use more emotional discipline (i.e. reacting with excessive frustration, irritability, and anger) (Miranda-Casas et al. 2007).

From a dimensional perspective, there is evidence that certain parenting patterns may increase the severity of some ADHD symptoms. Specifically, a high requirement of norm compliance by parents predicts a risk of hyperactivity (Raya Trenas et al. 2008). Parents' inconsistent discipline has been associated with the severity of ADHD symptoms (Ellis and Nigg 2009). Fathers' lack of responsiveness and mothers' lack of positive regard during preschool predicts higher levels of inattention in middle childhood, while fathers' intrusiveness predicts higher levels of hyperactivity/impulsivity (Keown 2012).

Among ADHD-associated problems, externalizing symptoms (e.g. aggression, oppositional defiance, disruptive behavior) are the most prevalent (Modesto-Lowe et al. 2008). Parental negative/ineffective discipline and maternal lack of involvement and warmth have been also associated with the severity of externalizing symptoms (Pffiffer et al. 2005). Inconsistency in parenting practices between parents (Harvey 2000), lower responsiveness, overreactions, and higher hostility (Modesto-Lowe et al. 2008) have all been related to a higher presence of externalizing symptoms in children with ADHD. Moreover, parenting practices seem to have an influence on associated symptoms, such as disruptive behavior, rather than on ADHD core symptoms (e.g. Deault 2010; Johnston et al. 2002; Seipp and Johnston 2005).

Furthermore, parenting practices are also associated with externalizing symptoms in children without ADHD. High levels of affection in the parent–child relationship (e.g. acceptance, involvement, emotional warmth,

**Table 1** Definition of parenting main constructs

Variable	Definition
<i>Affection</i>	
Acceptance	The engagement of parents, being child-centered and acceptance of individuality (Richaud de Minzi 2006b)
Rejection	Ignoring, neglect, and general rejection (Schaefer 1965). “Is characterized by hostility, punishment (physical or not, abusive or not), and derogation and blaming of the child.” (Buschgens et al. 2010, p. 570)
Warmth	“The expression of affection, love, appreciation, kindness, and regard; it includes emotional availability, support, and genuine caring.” (Skinner et al. 2005, p. 185)
Responsiveness	“...The extent to which parents intentionally foster individuality, self-regulation, and self-assertion by attuned, supportive, and acquiescent to children’s needs and demands.” (Baumrind 1991, 2005, p. 62)
Involvement	“The amount of commitment to and engagement in the parenting role.” (Skinner et al. 2005, p. 188). It includes engaging in conversations and activities with child, general caring, and involving child in decisions (Piffner et al. 2005)
Positive regard	“Demonstrations of affirmation, warmth, and affection toward the child.” (Keown 2012, p. 574)
<i>Control</i>	
Accepted control	A kind of control that is expected as an expression of affection and care (Richaud de Minzi 2006b)
Pathological control	Hostile control, instilling persistent anxiety, control through withdrawal of affection and through guilt (Richaud de Minzi 2006b)
Extreme autonomy	Lax discipline and permissiveness (Richaud de Minzi 2006b)
Power assertion	To shout and use corporal punishment as a way of discipline (Gerdes et al. 2007)
Emotional discipline	React with excessive frustration, irritability and anger (Miranda-Casas et al. 2007)
Intrusiveness	“Physical or verbal overcontrol of the child’s play.” (Keown 2012, p. 574)
Negative/ineffective discipline	“...Inconsistency in the disciplinary process and the extent of quarreling, parental dominance, physical and verbal punishment, privilege loss, and guilt induction used by parents.” (Piffner et al. 2005, p. 555)
Demandingness	“...The claims parents make on children to become integrated into the family whole, by their maturity demands, supervision, disciplinary efforts and willingness to confront the child who disobeys.” (Baumrind 1991, 61–62)
Inconsistent discipline	The consequences for the bad behavior of the children depends on the mood of the parents, they give up in their attempts to make their children to obey them, and they do not maintain the punishments for bad behavior of the children (Essau et al. 2006)
Monitoring/supervision	How much the parents really know about who their children’s friends are, where their children were at night, and supervise children’s behavior (Essau et al. 2006)
Harsh parenting	Harsh, emotionally negative, overreactive, coercive, controlling and authoritarian parenting. It includes yelling, frequent negative commands, overt expressions of anger, name calling, and physical threats and aggression (see Chang et al. 2003 for a revision)
Corporal punishment	Physical aggression (i.e. slap, spank, hit with a belt) as a way of discipline (Essau et al. 2006)
Psychological control	Control through the intrusion of child’s psychological and emotional world. It is a way of control through guilt or emotional extortion. The child’s needs are not contemplated and their autonomy and the ability to freely express themselves are undermined (Barber and Harmon 2002)
Overreactive parenting	Criticism, yelling (de Haan et al. 2010)
Overprotection	“...Fearfulness and anxiety for the child’s safety, guilt engendering, and intrusiveness...” (Buschgens et al. 2010, p. 570)
Permissive parenting style	This type of parenting style combined high levels of responsiveness and low levels of demandingness (see definitions in this table) (Baumrind 1991)

parenting satisfaction) and adequate forms of control and discipline (e.g. monitoring and supervision, parental consistency, requirement of norm compliance) are related to a lower presence of externalizing behaviors (e.g. Buschgens et al. 2010; Casas et al. 2006; Luyckx et al. 2011; Raya Trenas et al. 2009). On the other hand, extreme forms of control (e.g. harsh parenting, corporal punishment, psychological control, overprotection, over-reactive parenting) or a lack of control and supervision (e.g. high autonomy, a permissive parenting style) have been related to a higher

presence of externalizing behaviors (e.g. Buschgens et al. 2010; Casas et al. 2006; de Haan et al. 2010; Kawabata et al. 2012; Olson et al. 2011; Raya Trenas et al. 2009).

However, the influence parents have on their child’s behavior depends not only on what they objectively do, but also on their child’s perceptions and inferences (e.g. Gracia et al. 2005; Ivanova and Israel 2006). This gives rise to the question: how do children with ADHD perceive their parents’ parenting style? And what impact does this perception have on their symptoms?

To the best of our knowledge, there are few studies that have considered how children with ADHD perceive their parents' parenting style. According to those that have been carried out, children with this disorder perceive a greater assertion of power by their father and mother and feel their mothers as less warm than children in the comparison group (Gerdes et al. 2007). However, it is worth noting that children with ADHD have a significantly more positive perception of their parent–child relationship than their parents do. This difference was not observed in the comparison group (Gerdes et al. 2007, 2003). From a dimensional perspective, the perception of the father's rejection predicts an increase in ADHD symptoms over time (Lifford et al. 2008). To our knowledge, there are no studies that investigate the impact of children's perception of the parent–child relationship on the externalizing symptoms in children with ADHD.

Also, there is a lack of studies with Argentine children with ADHD. This Latin American country is a federation of 23 provinces and an autonomous city, Buenos Aires. It is a constitutional republic and a representative democracy. Most contemporary Argentines are descended from European immigrants, who for the most part came from Italy or Spain between the fifteenth and the nineteenth centuries. A large share of Argentines are Christian (92.1 %, according to the World Christian Database) and most are Roman Catholic (70–90 % of the population), although perhaps only 20 % attend service regularly. This is why Argentina has a Latin and Catholic cultural tradition with great respect for collectivistic values, especially those related to the family. For Argentine people, family is more important than country, religion, or politics. Also due to these cultural values, the mother is the central figure in Argentine family life (Richaud De Minzi et al. 2014).

The main aim of the present study is to investigate how children with ADHD from Buenos Aires (Argentine) perceive acceptance and control in the parent–child relationship. To address this aim, we took two different approaches. First, we adopted a categorical approach in which three groups of children were compared: children with ADHD who were attending psychotherapy (ADHD); children with unknown ADHD status who were not attending psychotherapy (NPG); and children without ADHD who were attending psychotherapy (APG). Thus, our first specific aim was to compare the perception of acceptance and control by their mother and father among these groups of children. Based on the literature reviewed above, we hypothesized that children with ADHD would perceive lower levels of acceptance than children without ADHD (both APG and NPG children) and that APG children would perceive lower levels of acceptance than NPG children (hypothesis 1). On the other hand, children with ADHD would perceive inadequate control (low accepted

control and high pathological control or extreme autonomy) to a greater extent than children without the disorder (both APG and NPG children), and APG children would perceive inadequate control to a greater extent than NPG children (hypothesis 2). Our second specific aim was to study the relationship between this perception and ADHD core symptoms or ADHD-associated externalizing behaviors. For this reason, we combined a categorical approach with a dimensional approach and studied the impact of the perception of the parent–child relationship on symptom severity in the group of children with ADHD and the APG children separately. We predicted that the perception of low levels of acceptance and inadequate control in the parent–child relationship would be related to high levels of ADHD symptoms (hypothesis 3) and externalizing symptoms (hypothesis 4).

## Methods

### Participants

The participants in this study were 102 boys and girls from the Metropolitan Area of the Buenos Aires province, Argentina (MABA) aged 7–13 years, along with one of their parents (biological parent, foster parent or legal guardian; 72.4 % mothers; 27.6 % fathers). Table 2 presents their socio-demographic characteristics. Three groups were organized: children diagnosed as having ADHD according to DSM-IV criteria (ADHD), children attending psychotherapy but who did not meet diagnostic criteria for ADHD (Attending Psychotherapy Group, APG) and children that were not receiving psychological, psychiatric, or neurological treatment (Not Attending Psychotherapy Group, NPG). We specifically chose these three groups because we wanted to ascertain whether the perception that children with ADHD have of the relationship with their parents has specific characteristics that differentiate it from other children's perception, or if it matches the perception of any child with emotional, behavioral or learning difficulties that require clinical care. For this reason, we decided to compare children who did not attend psychotherapy with children who did so for reasons other than ADHD. The groups did not differ in their demographic characteristics, as shown in Table 2.

In the sample of the present study, 45.70 % (16) of the children with ADHD presented ADHD combined subtype, 42.90 % (15) predominantly inattentive subtype, 2.90 % (1) predominantly hyperactive/impulsive subtype, and 8.60 % (3) had no specified subtype. Because of the high level of comorbidity associated with ADHD, children with comorbid disorders were included in this last group (Emeh and Mikami 2012; Swanson et al. 2012). Out of the

**Table 2** Socio-demographic characteristics of children and their families

	ADHD ( <i>n</i> = 32)	APG ( <i>n</i> = 26)	NPG ( <i>n</i> = 44)
<i>Children</i>			
Sex (boys %)	85.7	92.3	70.5
Age— <i>M</i> ( <i>SD</i> )	8.97 (1.56)	9.58 (1.70)	9.55 (1.42)
<i>Father</i>			
Age— <i>M</i> ( <i>SD</i> )	40.50 (6.08)	44.40 (5.29)	43.73 (5.45)
Educational level (%)			
Lower than high school	19.40 (6)	28.00 (7)	15.80 (3)
High school	29.00 (9)	20.00 (5)	25.70 (11)
Higher than high school	51.60 (16)	52.00 (13)	58.40 (30)
Occupation (%)			
Independent professional	29.00 (9)	56.00 (14)	51.20 (22)
Employed	64.50 (20)	40.00 (10)	41.90 (18)
Unemployed	0.00 (0)	4.00 (1)	0.00 (0)
Other	6.50 (2)	0.00 (0)	7.00 (3)
<i>Mother</i>			
Age— <i>M</i> ( <i>SD</i> )	38.85 (6.50)	41.00 (4.86)	40.84 (4.73)
Educational level (%)			
Lower than high school	11.80 (4)	11.50 (3)	2.30 (1)
High school	23.50 (8)	23.10 (6)	13.60 (6)
Higher than high school	64.70 (22)	65.40 (17)	84.10 (36)
Occupation (%)			
Independent professional	29.40 (10)	44.00 (11)	41.90 (18)
Employed	44.10 (15)	36.00 (9)	39.50 (17)
Unemployed	2.90 (1)	4.00 (1)	0.00 (0)
Other	23.50 (8)	16.00 (4)	18.60 (8)
<i>Family</i>			
Number of people in the household— <i>M</i> ( <i>SD</i> )	4.24 (1.09)	4.46 (1.36)	4.11 (0.78)
Parents' marital status (%)			
Married/cohabit	64.70 (22)	80.80 (21)	86.00 (37)
Separated/divorced	20.60 (7)	15.40 (4)	14.00 (6)
Remarried	14.70 (5)	3.80 (1)	0.00 (0)
Family structure (%)			
One parent	11.80 (4)	11.5 (3)	11.40 (5)
Two parents	55.90 (19)	65.40 (17)	77.30 (34)
Extended	5.90 (2)	3.80 (1)	6.80 (3)
Composed	26.50 (9)	19.20 (5)	4.50 (2)

ADHD Attention Deficit Hyperactivity Disorder, APG Attending Psychotherapy Group, NPG Not Attending Psychotherapy Group

children with ADHD, 42.40 % (14) presented at least one comorbid disorder. The most frequent comorbid disorders were learning disorders, disruptive behavior disorders, and anxiety disorders.

When they participated in the study, 30.30 % (10) of children with ADHD were undergoing pharmacological treatment (ADHD medication). Specifically, 90.00 % (9) of them were medicated with methylphenidate and 10.00 % (1) with risperidone. At the time of the study, 60 % (21) of children with ADHD were beginning

psychotherapy and 40 % (14) were in the middle of their treatment.

Among APG children, 23.1 % (6) presented a learning disorder, 19.20 % (5) a disruptive behavior disorder, 19.20 % (5) an anxiety disorder, and 7.70 % (2) an elimination disorder, while 26.9 % (7) presented clinical problems other than a psychiatric disorder (school performance problems). Of these children, 15.40 % (4) had at least one comorbid disorder. One of the children was taking psychiatric medication (i.e. sertraline). A 69.20 % (18) of



the children were beginning psychotherapy, and 30.8 % (8) were in the middle of their treatment.

## Procedure

Children with ADHD and APG children were recruited from three pediatric mental health centers. We contacted the authorities of the institutions, and after the project was presented, its objectives and procedures were explained. Once the study was authorized, therapists were contacted in team meetings and study procedures were explained. Two 1-h sessions were conducted in which general guidelines were given to therapists about inclusion criteria and research procedures. Therapists were also trained in the administration of the questionnaires to be answered by the children.

The inclusion criterion for the ADHD group was having been diagnosed by a specialist according to DMS IV criteria. For APG children, the inclusion criterion was being under psychological treatment but not meeting ADHD diagnostic criteria. Exclusion criteria were: presenting mental retardation, pervasive developmental disorder, severe neurological disorders, or any malfunction that prevented the children from completing questionnaires.

In this study, the diagnosis of children with ADHD and APG children was made by the professionals in charge of each case through clinical interviews with the child's parents, investigating the fulfillment of DSM-IV-TR criteria, the developmental history of the child, the assessment of the child's cognitive abilities (e.g. WISC), contact with the child's school, the administration of wide-spectrum questionnaires (e.g. CBCL) and questionnaires about specific symptoms (e.g. SNAP-IV), and observation of the child. The diagnosis was also interdisciplinary (e.g. psychological and neurological). Finally, in some cases, the diagnosis was discussed with the study's head researcher.

Diagnoses were made in this way because it is the method recommended by clinical practice guidelines for ADHD (e.g. American Academy of Pediatrics [AAP] 2000; Goldman et al. 1998; NCCMH 2009; Pliszka 2007; SIGN 2009). According to these guidelines, although there are various scales and psychological tests that may be useful in the assessment of ADHD, these instruments should not be used in isolation, either to confirm or to refute the diagnosis (Goldman et al. 1998; NCCMH 2009; SIGN 2009). The diagnosis should only be made after a complete medical and psychosocial evaluation (NCCMH 2009). Moreover, there is no specific biological marker that allows the diagnosis of the disorder (e.g. AAP 2000; APA 2002; SIGN 2009). For this reason, there is no indication of blood tests, imaging studies (e.g. CT scan, brain MRI), or neurophysiological studies (e.g. EEG, evoked potentials) in the diagnostic evaluation of ADHD (AAP 2000; Pliszka 2007; SIGN 2009).

Parents and children from the ADHD and APG groups were contacted through their therapists. They received an explanation of the purpose and procedure of the study which pointed out that their participation would be voluntary and confidential. Informed parental consent was requested, stating that they agreed to have their children participate in the study. The parent more involved in the treatment was selected by the child's therapist to answer the symptom questionnaires. We followed this criterion because we assumed that this parent could better account for the child's symptoms. The questionnaires to be answered by parents were given to them to be returned to the therapist in the following session. The questionnaires to be answered by the child were administered by the therapist during the session with the child.

Parents and children from the NPG group were recruited from a school in the MABA area. The inclusion criterion for this group was that children were not receiving psychological, psychiatric, psycho-pedagogic, or neurological treatment, according to their parents and school authorities.

Parents and children in the NPG group were contacted at the school they attended. The parents were contacted through the parent-teacher communication notebook with a note explaining the study's objectives and that their participation would be voluntary and confidential. By the same means, the socio-demographic questionnaire was sent home to be answered by either parent. This questionnaire was returned in a sealed envelope to the school to be delivered to the researcher. Children answered the questionnaires individually in a group session. Instructions were read aloud and explained by the researcher.

## Measures

### *Socio-Demographic Questionnaire*

This was created ad hoc to characterize the sample in terms of its socio-demographic characteristics (age, parents' education level and occupation, family composition) and the history of previous treatments received by the child.

### *Children's Perception of Parent-Child Relation Scale (Richaud de Minzi 2007)*

This is a self-report questionnaire composed of 32 items with a 3-point answer scale (*always, sometimes, never*) which includes five subscales: acceptance, accepted control, strict control, pathological control, extreme autonomy.

The scale has good factorial validity, presenting a consistent structure with dimensions with theoretical meaning. It also presents criteria validity (Richaud de Minzi 2007) and has good to very good internal consistency (Cronbach's alpha, from .60 to .92 for mother's version, and from .60 to .89 for father's version).

Children completed the scale for both parents since there are separate versions of the scale for the father and the mother. In this sample, internal consistency coefficients were from regular to good (acceptance, .72 for mother and .74 for father; accepted control, .56 for mother and .66 for father; pathological control, .69 for mother and .74 for father; extreme autonomy, .60 for mother and .72 for father). For this study, the strict control subscale was not included because the internal consistency coefficient for the mother's version was very low (.37).

*Swanson, Nolan, and Pelham Scale, DSM-IV Version (SNAP IV; Swanson 1992; Adaptation: Grañana et al. 2011)*

This scale assesses parents' perception of their child's ADHD symptoms (inattention, hyperactivity/impulsivity, and their combination) and Oppositional Defiance Disorder symptoms. It is made up of 40 items with a 4-point answer scale (*not at all, just a little, quite a bit, very much*).

The original version presents a good factorial validity, good internal consistency, and inter-rate reliability (moderate association between parents' and teachers' answers) (Bussing et al. 2008). The local version was linguistically adapted (Grañana et al. 2011). For this study, inattention and hyperactivity/impulsivity subscales were used. Internal consistency coefficients were very good (Cronbach's alpha: inattention, .90; hyperactivity/impulsivity, .92).

*Child Behavior Checklist (CBCL; Achenbach 1991; Adaptation: Samaniego 1998)*

This scale assesses parental perception of behavioral problems in children aged 4–18. It assesses general psychopathology from a dimensional perspective. It is composed of 118 items with a 3-point answer scale (*not true, sometimes true, very true*).

The original version presents good content, factorial, convergent, and criteria validity, as well as good test–retest reliability (Achenbach 1991). Local adaptation has good content and criteria validity. It also presents good test–retest reliability, high agreement between parents, and good internal consistency (Cronbach's alpha, .55 to .88) (Samaniego 1998, 2008).

In this study, the externalizing symptom subscale (composed of antisocial conduct and aggression subscales) was used. Internal consistency was good (Cronbach's alpha, .92).

## Data Analysis

To study data normality, an analysis of variance components with SAS 9.2 software was conducted. According to

the methods of maximum likelihood (GLM) and unweighted least squares (UL), the errors obtained in each of the distributions of the variables were compared and their scores were analyzed. The errors obtained by both procedures are the same for each of the rating scales, which allows us to assume that the variables are normally distributed, homoscedastic, and linear (García-García et al. 2013).

The groups did not differ in any of the demographic variables and therefore did not need to be controlled in the analyses (see Table 2). The ADHD and APG groups had the same proportion of children who were beginning psychotherapy and children who were in the middle of treatment ( $\chi^2 [1, 61] = 0.55, p = .458$ ). For this reason, there was no need to control this variable, either.

To study the relationship between perceived parenting styles and ADHD from a categorical approach, the three groups of children were compared. The analysis of variance (ANOVA) was used to compare the perception of the relationship with the mother and the father. Bonferroni post hoc tests were performed for pair comparison. Effect size was studied with Cohen's *d* (Cohen 1992).

To study the relationship between perceived parenting style and ADHD or externalizing symptoms in the ADHD and APG groups from a dimensional approach, Pearson's correlations were used. To study effect size, *r* coefficient was used following Cohen's criteria (Cohen 1992). The predictive power of perceived parenting styles over the children's symptoms was studied using simple and multiple linear regressions. Parenting style dimensions were introduced as independent variables, and the symptoms (inattention, hyperactivity/impulsivity, and externalizing behaviors) were introduced as dependent variables. Different models based on correlation results were tested. The strength and significance of correlations were considered. Separate analyses for each group of children and for parent gender were performed. For each model, effect size was studied with Cohen's  $f^2$  (Cohen 1992).

## Results

Table 3 presents descriptive statistics concerning the perception of the relationship with the mother and the father. Table 4 shows ANOVA results, post hoc comparisons, and effect size (Cohen's *d*) for pair comparison. Significant differences were found in the perception of maternal pathological control and extreme autonomy. There were no differences between the groups in the perception of the relationship with the father. Post-hoc comparisons show that children with ADHD perceived higher levels of pathological control in the relationship with their mothers than APG and NPG children. On the other hand, NPG

**Table 3** Descriptive statistics of the perception of parent–child relationship of children with ADHD, children with other disabilities and healthy children

Dimensions	ADHD ( <i>n</i> = 32)			APG ( <i>n</i> = 26)			NPG ( <i>n</i> = 44)		
	<i>M</i>	<i>SD</i>	95 % CI	<i>M</i>	<i>SD</i>	95 % CI	<i>M</i>	<i>SD</i>	95 % CI
<i>Mother relationship</i>									
Acceptance	19.97	3.25	[18.80, 21.14]	20.52	2.60	[19.45, 21.59]	20.64	2.28	[19.94, 21.33]
Accepted control	13.91	2.62	[12.96, 14.85]	13.92	2.10	[13.05, 14.79]	12.93	2.63	[12.13, 13.73]
Pathological control	16.03	3.44	[14.79, 17.27]	13.84	3.11	[12.56, 15.12]	14.09	3.29	[13.09, 15.09]
Extreme autonomy	6.84	1.73	[6.22, 7.47]	6.96	1.43	[6.37, 7.55]	8.16	1.95	[7.57, 8.75]
<i>Father relationship</i>									
Acceptance	19.14	2.94	[18.02, 20.25]	19.12	3.57	[17.67, 20.56]	20.39	2.92	[19.50, 21.27]
Accepted control	13.17	2.83	[12.11, 14.22]	11.85	2.89	[10.68, 13.02]	12.05	2.89	[11.17, 12.93]
Pathological control	14.27	3.55	[12.94, 15.59]	12.92	3.75	[11.41, 14.44]	13.66	3.47	[12.60, 14.71]
Extreme autonomy	7.17	1.76	[6.51, 7.83]	7.35	1.72	[6.65, 8.04]	8.18	2.29	[7.49, 8.88]

ADHD Attention Deficit Hyperactivity Disorder, APG Attending Psychotherapy Group, NPG Not Attending Psychotherapy Group, CI confidence interval

**Table 4** ANOVA, post hoc comparisons and effect size for the differences in the perception of the relationship with parents

Dimensions	<i>F</i> (2, 102)	<i>p</i>	Pairs comparison and effect size					
			ADHD versus APG		ADHD versus NPG		APG versus NPG	
			<i>p</i>	<i>d</i>	<i>p</i>	<i>d</i>	<i>p</i>	<i>d</i>
<i>Mother relationship</i>								
Acceptance	0.60	.550	.999	−0.18	.868	−0.25	.999	−0.05
Accepted control	1.90	.155	.999	−0.01	.292	0.37	.356	0.40
Pathological control	4.20	.018*	.043*	0.66	.039*	0.58	.999	−0.08
Extreme autonomy	6.41	.002**	.999	−0.07	.005**	−0.71	.024*	−0.67
<i>Father relationship</i>								
Acceptance	2.01	.140	.999	0.01	.289	−0.43	.304	−0.39
Accepted control	1.86	.162	.269	0.46	.308	0.39	.999	−0.07
Pathological control	0.99	.376	.490	0.37	.999	0.17	.999	−0.21
Extreme autonomy	2.73	.070	.999	−0.10	.104	−0.48	.284	−0.40

ADHD Attention Deficit Hyperactivity Disorder, APG Attending Psychotherapy Group, NPG Not Attending Psychotherapy Group

\* *p* < .05; \*\* *p* < .01, with Bonferroni’s correction

children perceived higher levels of extreme autonomy than did ADHD and APG children.

Correlations between symptoms and the perception of the parent–child relationship are presented in Table 5. In the ADHD group, only marginal correlations were found. First, a positive correlation between hyperactivity/impulsivity and perceived maternal acceptance was observed (*p* = .052). Second, there was a negative correlation between these symptoms and perceived paternal extreme autonomy (*p* = .098). Last, externalizing symptoms were positively correlated with perceived maternal pathological control (*p* = .065). All these correlations had a medium effect size (see Table 5).

In APG children, symptoms of inattention were negatively and significantly correlated with perceived maternal

acceptance (*p* = .050) and positively and marginally correlated with maternal pathological control (*p* = .061). Maternal pathological control was also positively and marginally correlated with hyperactivity/impulsivity symptoms (*p* = .099). Externalizing symptoms were positively and significantly correlated with maternal pathological control (*p* = .013) and negatively correlated with paternal acceptance (*p* = .042).

The perception of the relationship with the father significantly predicted the level of externalizing symptoms in children with ADHD (see Table 6). The main predictor was pathological control ( $\beta$  = .40, *p* = .031), while extreme autonomy presented a marginal significance ( $\beta$  = −.33, *p* = .072). The percentage of variance explained by the model was 17 % (adjusted *R*<sup>2</sup> .17; *F* (2,



**Table 5** Pearson correlations between ADHD and externalizing symptoms and perceived parenting style in ADHD and APG children

	1	2	3	4	5	6	7	8	9	10	11
1. Acceptance—mother	–	.50**	.24	.03	–.02	.12	.42*	–.14	–.03	.39†	.20
2. Accepted control—mother	.46*	–	.49**	.18	.10	.28	.36†	.06	.23	.06	.21
3. Pathological control—mother	.09	.59**	–	–.05	.05	.10	.37*	.04	–.15	–.15	.07
4. Extreme autonomy—mother	.35†	.42*	.28	–	.47*	.34†	.33†	.37*	.01	.09	.27
5. Acceptance—father	.42*	.48*	.15	.07	–	.41*	.22	.47*	–.03	.06	.07
6. Accepted control—father	.49*	.51**	.20	.14	.77***	–	.60**	.17	.23	.23	.12
7. Pathological control—father	.24	.45*	.59**	.21	.38†	.62**	–	.15	–.18	.19	.35†
8. Extreme autonomy—father	–.01	.32	.29	.56**	.22	.02	.09	–	.09	–.35†	–.27
9. Inattention	–.43*	.31	.42†	.09	–.16	–.17	–.04	.19	–	.23	.26
10. Hyperactivity/impulsivity	–.04	.23	.37†	–.08	–.01	–.17	.01	.32	.39†	–	.74***
11. Externalizing behaviour	–.14	.19	.49*	.15	–.40*	–.31	.10	.02	.40†	.55*	–

ADHD group’s correlations are presented above the diagonal (Attention Deficit Hyperactivity Disorder  $n = 30$ ). APG’s correlations (Attending Psychotherapy Group  $n = 24$ ) are presented below the diagonal. The  $n$  can be lower than the one that is informed due to missing data

†  $p < .10$ ; \*  $p < .05$ ; \*\*  $p < .01$

**Table 6** Linear regression model of dimensions of the relationship with the father that predicts the level of externalizing symptoms in children with ADHD

Predictors	Predictors data			Model data			
	<i>B</i>	$\beta$	<i>B</i> 95 %CI	$R^2$	$R^2$ adjusted	<i>F</i>	$f^2$
Pathological control	1.11	.40*	[0.11, 2.12]	.23	.17	3.81*	0.20
Extreme autonomy	–1.82	–.33†	[–3.82, 0.17]				

CI confidence interval

$n = 28$

†  $p < .10$ ; \*  $p < .05$

**Table 7** Linear regression model of the dimensions of the relationship with the father and mother that predict the level of APG children’s symptoms

Predictors	Predictors data			Model data			
	<i>B</i>	$\beta$	<i>B</i> 95 % CI	$R^2$	$R^2$ adjusted	<i>F</i>	$f^2$
<i>Inattention</i> <sup>a</sup>							
Acceptance—mother	–0.19	–.57**	[–0.31, –0.07]	.48	.42	8.24**	0.92
Pathological control—mother	0.12	.56**	[0.04, 0.20]				
<i>Externalizing behaviour</i> <sup>b</sup>							
Pathological control—mother	1.61	.49*	[0.37, 2.85]	.24	.21	7.25*	0.32
<i>Externalizing behaviour</i> <sup>c</sup>							
Acceptance—father	–1.16	–.40*	[–2.27, –0.05]	.16	.13	4.63*	0.19

CI confidence interval

\*  $p < .05$ ; \*\*  $p < .01$

<sup>a</sup>  $n = 21$

<sup>b</sup>  $n = 25$

<sup>c</sup>  $n = 26$

28) = 3.81;  $p = .036$ ). Effect size was medium ( $f^2 = 0.20$ ).

The perception of the relationship with the mother significantly predicted APG children’s inattention symptoms (see Table 7). The main predictors were maternal

acceptance ( $\beta = -.57$ ;  $p = .005$ ) and pathological control ( $\beta = .56$ ;  $p = .005$ ). The percentage of variance accounted for by the model was 42 % (adjusted  $R^2 .42$ ;  $F(2, 21) = 8.24$ ;  $p = .003$ ). Effect size was large ( $f^2 = 0.92$ ). The results are summarized in Table 8.

**Table 8** Syntheses of the findings of the study

Approach	Data analysis	Groups studied	Result	Effect size
Categorical	ANOVA	ADHD versus APG versus NPG	ADHD perceived more pathological control than APG and NPG	Medium
			NPG perceived more extreme autonomy than ADHD group and NPG	Medium
			No differences in perceived maternal acceptance	Small
			No differences in perceived maternal accepted control	Small
			No differences in the perception of the relationship with de father	Small
Dimensional	Linear multiple regression	ADHD APG	High perceived pathological control and low perceived extreme autonomy by the father predicted externalizing symptoms	Medium
			Low perceived acceptance and high pathological control by the mother predicted inattention	Large
			High perceived pathological control by the mother predicted externalizing symptoms	Medium
			Low perceived acceptance by the father predicted externalizing symptoms	Medium

*ADHD* Attention Deficit Hyperactivity Disorder, *APG* Attending Psychotherapy Group, *NPG* Not Attending Psychotherapy Group

The perception of the relationship with the mother also significantly predicted APG children’s externalizing symptoms (see Table 7). The main predictor was maternal pathological control ( $\beta = .49; p = .013$ ). The percentage of variance explained by the first model was 21 % (adjusted  $R^2 .21; F(1, 25) = 7.25; p = .013$ ) and effect size was medium ( $f^2 = 0.32$ ). Externalizing symptoms were also predicted by the perception of the relationship with the father (see Table 7). The main predictor was paternal acceptance ( $\beta = -.40; p = .042$ ). The percentage of variance accounted for by the second model was 13 % (adjusted  $R^2 .13; F(1, 26) = 4.63; p = .042$ ). Effect size was medium ( $f^2 = 0.19$ ).

**Discussion**

The aim of this study was to investigate how children with ADHD perceive acceptance and control in their relationship with their parents and how this relates to ADHD symptoms and externalizing behaviors. Two perspectives were adopted: a categorical perspective in which children with ADHD were compared to children who were not attending psychotherapy and to children who were referred to psychotherapy for other reasons; and a dimensional perspective that considered the impact of perceived parenting styles on ADHD symptoms and externalizing symptoms.

In the comparison of how children with ADHD, APG children, and NPG children perceive acceptance by their mothers, no differences were found. This contradicts the first hypothesis proposed in this study. These results differ from the findings in studies showing that parents of

children with ADHD perceive themselves as less affectionate (Alizadeh et al. 2007; Gerdes et al. 2003; Keown 2012) but are consistent with other results showing no differences in children’s perception of parental warmth between children with ADHD and children without ADHD (Gerdes et al. 2007, 2003).

However, we found differences in the perception of the control exercised by the mother. More specifically, children with ADHD perceive a higher pathological control in their relationships with their mothers than APG and NPG children. Moreover, both children with ADHD and APG children perceive less maternal extreme autonomy than NPG children. No differences were observed in the most functional, healthiest form of control: accepted control. Results showed that what characterizes the perception of the relationship with their mothers in children with ADHD is the perception of extreme control. These results suggest that partial evidence for the second hypothesis was found and they are similar to the findings that parents of children with ADHD report more extreme forms of control (Alizadeh et al. 2007; Gerdes et al. 2003; Keown 2012) or inadequate discipline than parents of children without ADHD (Ellis and Nigg 2009; Miranda-Casas et al. 2007) and that children with ADHD perceive higher levels of power assertion in their parents’ behavior than children without the disorder (Gerdes et al. 2007).

There are two possible interpretations for the lack of differences in the affective dimension. The first concerns the positive illusory bias (PIB) that is present in children with ADHD. There is evidence that children with ADHD tend to overestimate their competences more than children who do not suffer from this disorder. This brings about a discrepancy between their real competences and those they

report (Hoza et al. 2002). This bias could be also present in their perception of their relationship with their parents. Indeed, there is evidence that children with ADHD present a significantly more positive perception of the parent–child relationship than their parents do. This parent–child discrepancy was not observed in children without ADHD (Gerdes et al. 2007, 2003). For this reason, future research should include a measurement of parents' perception of their parenting style in order to compare the perceptions of the children to those of their parents, such that the lack of differences in the affective domain could be studied in light of the PIB hypothesis.

The second interpretation is that ADHD behavior may provoke a more negative response from parents in the control dimension than in the affective dimension. Therefore, children can perceive dysfunction in the former dimension more than in the latter. In this sense, although parents describe their experience of raising a child with ADHD as difficult and challenging, they can also mention something good about their child (McIntyre and Hennessy 2012; Perry et al. 2005). This means that despite the difficulties implied by parenting a child with ADHD, parents can see positive aspects in their children, and it is possible for the child to perceive this as acceptance. The qualitative study of the experience of being a son or daughter suffering from ADHD may contribute to furthering knowledge about the characteristics of the relationship between parents and children in this population.

Contrary to expectations, children who were not attending psychotherapy were found to perceive a higher level of extreme autonomy from their mother than children with ADHD or APG children. Extreme autonomy is defined as lax discipline and a lack of interest from parents (Richaud de Minzi 2007). In Argentina, extreme autonomy has been related to negative outcomes in community samples. High levels of extreme autonomy correlate with high levels of conflict in friendship (Richaud de Minzi 2006b), a preference for loneliness, and a negative self-perception of academic competence (Richaud de Minzi 2006a). However, it is important to take into account that a permissive parenting style, which combines high autonomy with high involvement and responsiveness (Muñoz Silva 2005; Torío López et al. 2008), has been shown to correlate with positive outcomes in Latin American youth (e.g. in Brazil, Martínez et al. 2007; and in Mexico, Villalobos et al. 2004). Therefore, future research should explore this issue, investigating the role played by extreme autonomy in combination with other features of the relationship with parents, such as the level of acceptance perceived by the child.

Regarding the relationship with the father, evidence for hypotheses 1 and 2 was not found, since no differences were observed between the groups of children studied. This

is consistent with findings according to which children with ADHD have more negative interactions with their mother than with their father (see Gerdes et al. 2003 for a review). On the other hand, it is consistent with results that show no differences in any aspect of the perception of the relationship with the father (Gerdes et al. 2003). However, it does differ from findings that suggest that children with ADHD perceived more power assertion by their father than control children (Gerdes et al. 2007).

From a dimensional approach, the perception of the relationship with parents did not predict the severity of ADHD core symptoms in the group of children with ADHD. However, the perception of high levels of pathological control and low levels of acceptance in the relationship with the mother predicted a higher level of inattention in APG children.

In this sense, partial evidence for hypothesis 3 was found, given that only some of the variables of the relationship with the mother predicted symptoms of inattention in APG children. Thus, the results in APG children were consistent with those showing that the perception of rejection influenced the level of ADHD-related symptoms over time (Lifford et al. 2008). It is important to note that in their study, Lifford et al. (2008) worked with a community sample in which children's diagnoses of ADHD were not considered, and only the level of the symptoms was assessed. It is possible for the perception of the relationship with parents to have a different effect on inattention behaviors when children meet ADHD diagnostic criteria in comparison to when they do not.

In this regard, it is important to note that children in the ADHD group met all the criteria for ADHD diagnosis, whereas APG children did not. This latter group had other disorders or clinical problems that may share some symptoms with ADHD but do not match the specific definition of the disorder. It is necessary to consider that ADHD is a biological-behavioral disorder. That is to say, the differences present in the children's behavior are associated with neurobiological differences (Scandar 2003). When a child presents a complete expression of the disorder, it is possible for the manifestation of core symptoms to be less influenced by parental behavior. In contrast, in children who do not have ADHD, this type of behavior may respond to other factors, particularly environmental ones. Importantly, to make a diagnosis of ADHD, such behavior should not be attributed to psychosocial maladjustment, restrictive or lenient educational criteria, severe social or family conflicts (Scandar 2003), non-stimulating academic environments (APA 2002), sustained stress, abuse, or psychopathology in parents and teachers (Hidalgo Vicario 2007).

With regard to externalizing symptoms, the perception of paternal pathological control was found to predict a

higher level of these problems in children with ADHD. This presents partial evidence for hypothesis 4 and is consistent with the findings of studies showing that inadequate parenting behavior, as reported by parents, is related to a higher level of externalizing symptoms in children with ADHD (Harvey 2000; Modesto-Lowe et al. 2008; Pffiffer et al. 2005). In addition, our results are consistent with findings that show that parenting style and practices have a greater influence on behavioral problems and opposition in children with ADHD than on ADHD core symptoms (e.g. Deault 2010; Johnston et al. 2002; Seipp and Johnston 2005). At present, all results are consistent in this regard. However, research on this topic is recent and there is a need to continue investigating this issue.

For APG children, the perception of low levels of paternal acceptance predicted high levels of externalizing symptoms, whereas the perception of high levels of maternal pathological control predicted a higher level of such symptoms. This is consistent with studies suggesting that affection from parents is a protection factor (e.g. Buschgens et al. 2010; Luyckx et al. 2011; Raya Trenas et al. 2009), while extreme and dysfunctional control is a risk factor for the development of those symptoms (e.g. Buschgens et al. 2010; Casas et al. 2006; de Haan et al. 2010; Kawabata et al. 2012; Olson et al. 2011).

The results of this study have clinical implications. Particularly, they show the importance of taking into account children's perception of their relationship with their parents in addition to concrete parental behaviors for ADHD treatment. This could be useful in planning treatments and choosing adequate strategies for parental training.

In particular, the development of functional forms of discipline should be the main focus of treatment. In this sense, although the perception of children with ADHD of how their father disciplines them does not differ from the perception of children without ADHD, it is related to the level of externalizing symptoms. On the other hand, contrary to what was expected, acceptance by parents can be a protective factor for the child.

Furthermore, these results show that it is necessary to modify the beliefs children have about their parents, in addition to implementing parental training techniques. For children with ADHD, this is especially relevant when the disorder is accompanied by externalizing symptoms since the results suggest that children's perception of their parents' parenting style has an impact on the severity of these symptoms and not on ADHD core symptoms. However, the perception of parental behavior is also important in the case of children who do not fulfill the criteria for an ADHD diagnosis but present inattentive or externalizing behavior.

This study has some limitations. First, we worked with a relatively modest sample size. When work is conducted

with a small sample size, the statistical associations under study should be of a significant magnitude to be detected. By contrast, when the sample size is very large, there is a risk of detecting significant but trivial associations (Baslaugh and Watters 2008; Hays 1963). The low *n* of this sample involves the limitation of not being able to identify low-magnitude associations between the variables studied. However, it increases the trustworthiness of the differences and associations identified (Hays 1963). Second, a non-probability sampling was used, which is not representative of Argentine children with ADHD, and therefore results must be replicated in other samples. Third, there is a very large proportion of boys in the sample, which would call for caution before these results can be generalized to include girls with ADHD. Fourth, because of the small sample size, we have not been able to compare children with ADHD by their type of comorbidity (e.g. externalizing vs. internalizing disorders). Fifth, ADHD and APG groups include children in the beginning and in the middle of their treatment. Although the groups are matched with each other and therefore this variable is not a bias in our results, it is important for future research to separately examine children who are starting treatment and those who are already receiving it. Lastly, the APG group was quite heterogeneous. Considering that ADHD is acknowledged to have a heterogeneous presentation (i.e. it has three presentation subtypes and a very high rate of comorbidity with different types of disorders), this could also be an advantage because two similarly heterogeneous groups are compared. However, one limitation is the difficulty of determining what influence specific disorders or symptoms may have on children's perception of parenting styles.

Another limitation of this study concerns ADHD and APG diagnosis. There was only one rater per case (the participants' therapists) and different therapists diagnosing; although they used a multi-source, multi-method approach to diagnosing, these methods were not uniform across participants. In other words, the assessment was not standardized for every participant, which may bring into question the validity of the diagnosis. We believe this is not the case, since this is how disorders are identified in real clinical practice. Also, as mentioned in the Method section of this paper, it is how international guidelines for the assessment and treatment of ADHD recommend diagnosing this disorder.

On the other hand, participants in the non-attending psychotherapy group were not tested for ADHD; therefore, it is possible that some of them met diagnostic criteria for ADHD but were not undergoing treatment. However, we asked parents if their children were receiving psychological, psycho-educational, neurological, or another kind of medical treatment. The same question was asked of school authorities, and in addition we asked them which children

should, in their opinion, be referred for any of these treatments in order to exclude them from the sample. In this regard, we assume that children in this group did not have problems which could generate enough functional impact to elicit a consultation or treatment in the areas mentioned above, and therefore that they are not likely to have ADHD.

At the time this study was conducted, DSM-IV-TR was in place and being used by clinicians to diagnose ADHD. This is important to take into account since there is now a new version of this manual. In the fifth version of the DSM, the division of symptoms remains in two domains, inattention and hyperactivity/impulsivity, and the 18 symptoms used in the DSM-IV-TR remain valid (American Psychiatric Association 2013a). However, some modifications were introduced which are relevant to the age group worked with in this study. The requirement that the disorder be present in different contexts was restricted to several symptoms occurring in each context. The symptoms had to occur before 12 years of age, instead of 7 years of age. The concept of subtype was changed to that of specifier, that is, the development of the disorder is specified at a given time, although it is assumed that this occurs differently in another phase of its development. Possible presentations of the disorder are equivalent to subtypes of DSM-IV-TR (i.e. combined, inattentive, hyperactive/impulsive, and unspecified). The comorbidity with autism-spectrum disorders was removed as an exclusion criterion. Other exclusion criteria are maintained. The disorder is included in the chapter on neurodevelopmental disorders to reflect correlations in brain development associated with ADHD (American Psychiatric Association 2013b). These modifications should be considered when the results of this study are generalized to include children who have been diagnosed under DSM-V.

Future studies should include a larger number of girls in the groups, which will allow for sex comparisons. It is also important to enlarge the sample of children with ADHD so that it is possible to make comparisons on the basis of associated disorders. Furthermore, it is important to compare children with ADHD to children with other specific disorders such as learning disorders, anxiety disorders, mood disorders, or other disruptive behavior disorders.

This study has enabled us to expand knowledge about how children with ADHD perceive their relationships with their parents in order to identify issues that are specific to this population, as well as others that are shared with children with other problems. Also, the combination of categorical and dimensional approaches has allowed us to learn how the perception of the relationship with parents affects the severity of inattention, hyperactivity/impulsivity, and externalizing behaviors, specifically for children with ADHD and for children with other disorders.

**Acknowledgments** We want to thank to the children, parents, therapists, teachers and authorities of the institutions that participated in this study (Private Psychotherapy Center, CPP, Cognitive Therapy for Children and Youth Equipment, ETCI Foundation, Clinical Neuropsychology Foundation, FNC, and College Alas-Pinitos). Also, we are grateful to Maria Julia Raimundi, Lucia Bugallo, Mariel Gimenez and Yanina Guzman for their help in data collection for this research. This research was financed by the Argentine National Council of Scientific and Technological Research (CONICET; Res. No 3609/11 Directed by Dr. Schmidt and co-directed by Dr. Leibovich de Figueroa) and the Secretary of Science and Technology of the Buenos Aires University (UBACyT 20020100100052; Directed by Dr. Leibovich de Figueroa and Co-Directed by Dr. Schmidt).

## References

- Achenbach, T. M. (1991). *Integrative guide for the 1991 CBCL/4-18, YSR, and TRF profiles*. Burlington, VT: University of Vermont. Department of Psychiatry.
- Alizadeh, H., Applequist, K. F., & Coolidge, F. L. (2007). Parental self-confidence, parenting styles, and corporal punishment in families of ADHD children in Iran. *Child Abuse and Neglect*, *31*(5), 567–572. doi:10.1016/j.chiabu.2006.12.005.
- American Academy of Pediatrics (AAP). (2000). Clinical practice guideline: Diagnosis and evaluation of the child with Attention-Deficit/Hyperactivity Disorder. *Pediatrics*, *105*(5), 1158–1170.
- American Psychiatric Association. (2013a). Attention Deficit/Hyperactivity Disorder. Retrieved from <http://www.dsm5.org/Documents/ADHD%20Fact%20Sheet.pdf>.
- American Psychiatric Association. (2013b). Highlights of changes from DSM-IV-TR to DSM-5. Retrieved from <http://www.dsm5.org/Documents/changes%20from%20dsm-iv-tr%20to%20dsm-5.pdf>.
- American Psychiatric Association (APA). (2002). *Diagnostic and statistic manual of mental disorders: DSM IV-TR (4<sup>o</sup> Edición)*. Barcelona: MASSON.
- Barber, B. K., & Harmon, E. L. (2002). Violating the self: Parental psychological control of children and adolescents. In B. K. Barber (Ed.), *Intrusive parenting: How psychological control affects children and adolescents* (pp. 15–52). Washington, DC: American Psychological Association.
- Barkley, R. A. (2006). Comorbid disorders, social and family adjustment, and subtyping. In R. A. Barkley (Ed.), *Attention-Deficit Hyperactivity Disorder. A handbook for diagnosis and treatment* (3rd ed., pp. 184–218). New York, NY: The Guilford Press.
- Baslaugh, S., & Watters, P. (2008). *Statistics in a nutshell. A desktop quick reference*. California, CA: O'Reilly.
- Baumrind, D. (1991). The influence of parenting style on adolescent competence and substance use. *The Journal of Early Adolescence*, *11*(1), 56–95. doi:10.1177/0272431691111004.
- Brown, T. E. (2003). *Trastornos por Déficit de Atención y comorbilidades en niños, adolescentes y adultos*. Barcelona, España: Masson.
- Buschgens, C. J. M., Van Aken, M. A. G., Swinkels, S. H. N., Ormel, J., Verhulst, F. C., & Buitelaar, J. K. (2010). Externalizing behaviors in preadolescents: Familial risk to externalizing behaviors and perceived parenting styles. *European Child and Adolescent Psychiatry*, *19*(7), 567–575. doi:10.1007/s00787-009-0086-8.
- Bussing, R., Fernandez, M., Harwood, M., Hou, W., Garvan, C. W., Eyberg, S. M., & Swanson, J. M. (2008). Parent and teacher SNAP-IV ratings of Attention Deficit/Hyperactivity Disorder symptoms. Psychometric properties and normative ratings from



- a school district sample. *Assessment*, 15(3), 317–328. doi:10.1177/1073191107313888.
- Casas, J. F., Weigel, S. M., Crick, N. R., Ostrov, J. M., Woods, K. E., Jansen Yeh, E. A., & Huddleston-Casas, C. A. (2006). Early parenting and children's relational and physical aggression in the preschool and home contexts. *Journal of Applied Developmental Psychology*, 27(3), 209–227. doi:10.1016/j.appdev.2006.02.003.
- Chang, L., Schwartz, D., Dodge, K. A., & McBride-Chang, C. (2003). Harsh parenting in relation to child emotion regulation and aggression. *Journal of Family Psychology*, 17(4), 598–606. doi:10.1037/0893-3200.17.4.598.Harsh.
- Cohen, J. (1992). A power primer. *Psychological Bulletin*, 112(1), 155–159. doi:10.1037/0033-2909.112.1.155.
- Darling, N. (1999). Parenting style and its correlates. In *ERIC clearinghouse on elementary and early childhood education. University of Illinois, Illinois. (ERIC Digest EDO-PS-99-3)*. Retrieved from <http://www.eric.ed.gov/PDFS/ED427896.pdf>.
- Darling, N., & Steinberg, L. (1993). Parenting style as context: An integrative model. *Psychological Bulletin*, 113(3), 487–496. doi:10.1037/0033-2909.113.3.487.
- De Haan, A. D., Prinzie, P., & Deković, M. (2010). How and why children change in aggression and delinquency from childhood to adolescence: Moderation of overreactive parenting by child personality. *Journal of Child Psychology and Psychiatry*, 51(6), 725–733. doi:10.1111/j.1469-7610.2009.02192.x.
- Deault, L. C. (2010). A systematic review of parenting in relation to the development of comorbidities and functional impairments in children with Attention-Deficit/Hyperactivity Disorder (ADHD). *Child Psychiatry and Human Development*, 41(2), 168–192. doi:10.1007/s10578-009-0159-4.
- Ellis, B., & Nigg, J. (2009). Parenting practices and Attention-Deficit/Hyperactivity Disorder: Partial specificity of effects. *Journal of the American Academy of Child and Adolescent Psychiatry*, 48(2), 146–154. doi:10.1097/CHI.0b013e31819176d0.Parenting.
- Emeh, C. C., & Mikami, A. Y. (2012). The influence of parent behaviors on positive illusory bias in children with ADHD. *Journal of Attention Disorders*,. doi:10.1177/1087054712441831.
- Essau, C. A., Sasagawa, S., & Frick, P. J. (2006). Psychometric properties of the Alabama parenting questionnaire. *Journal of Child and Family Studies*, 15(5), 595–614. doi:10.1007/s10826-006-9036-y.
- García-García, O., Hernández Mendo, A., Serrano Gómez, V., & Morales-Sánchez, V. (2013). Aplicación de la teoría generalizabilidad a un análisis de tensiomiografía en ciclistas profesionales de ruta [Application of the generalizability theory of tensiomyography analysis of professional road cyclists]. *Revista de Psicología Del Deporte*, 22(1), 53–60. Retrieved from [http://www.rpd-online.com/article/view/v22-n1-garcia\\_garcia-hernandez\\_mendo-serrano\\_gomez-morales\\_sanchez/894](http://www.rpd-online.com/article/view/v22-n1-garcia_garcia-hernandez_mendo-serrano_gomez-morales_sanchez/894).
- Gerdes, A. C., Hoza, B., & Pelham, W. E. (2003). Attention-Deficit/Hyperactivity Disordered boys' relationships with their mothers and fathers: Child, mother, and father perceptions. *Development and Psychopathology*, 15(2), 363–382. doi:10.1017/S0954579403000208.
- Gerdes, A. C., Hoza, B., Arnold, L. E., Hinshaw, S. P., Wells, K. C., Hechtman, L., et al. (2007). Child and parent predictors of perceptions of parent-child relationship quality. *Journal of Attention Disorders*, 11(1), 37–48. doi:10.1177/1087054706295664.
- Goldman, L. S., Genel, M., Bezman, R. J., & Slanetz, P. J. (1998). Diagnosis and treatment of Attention-Deficit/Hyperactivity Disorder in children and adolescents. *The Journal of the American Medical Association*, 279(14), 1100–1107.
- Gracia, E., Lila, M., & Musitu Ochoa, G. (2005). Rechazo parental y ajuste psicológico y social de los hijos [Parental rejection and children's psychological and social adjustment]. *Salud Mental*, 28(2), 73–81. Retrieved from <http://www.redalyc.org/articulo.oa?id=58222807>.
- Grañana, N., Richaudeau, A., Robles Gorriti, C., O'Flaherty, M., Scotti, M. E., Sixto, L., et al. (2011). Evaluación de Déficit de Atención con Hiperactividad: La escala SNAP IV adaptada a la Argentina [Assessment of attention deficit hyperactivity: SNAP-IV scale adapted to Argentina]. *Revista Panamericana de Salud Pública*, 29(5), 344–349. Retrieved from <http://www.scielosp.org/pdf/rpsp/v29n5/a07v29n5.pdf>.
- Harvey, E. A. (2000). Parenting similarity and children with Attention-Deficit/Hyperactivity Disorder. *Child & Family Behavior Therapy*, 22(3), 39–54. doi:10.1300/J019v22n03\_02.
- Hays, W. L. (1963). *Statistics*. New York, NY: Holt, Rinehart & Winston.
- Hidalgo Vicario, M. I. (2007). Evaluación diagnóstica del Trastorno de Déficit de Atención e Hiperactividad [Diagnostic assessment of Attention Deficit Disorder and Hyperactivity]. *Canarias Pediátrica*, 31(2), 79–85.
- Hoza, B., Pelham, W. E., Dobbs, J., Owens, J. S., & Pillow, D. R. (2002). Do boys with Attention-Deficit/Hyperactivity Disorder have positive illusory self-concepts? *Journal of Abnormal Psychology*, 111(2), 268–278. doi:10.1037//0021-843X.111.2.268.
- Ivanova, M. Y., & Israel, A. C. (2006). Family stability as a protective factor against psychopathology for urban children receiving psychological services. *Journal of Clinical Child and Adolescent Psychology*, 35(4), 564–570. doi:10.1207/s15374424jccp3504\_7.
- Johnston, C., & Jassy, J. S. (2007). Attention-Deficit/Hyperactivity Disorder and oppositional/conduct problems: Links to parent-child interactions. *Journal Canadian Academic Child Adolescent Psychiatry*, 16(2), 74–79. Retrieved from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2242643/>.
- Johnston, C., & Mash, E. J. (2001). Families of children with Attention-Deficit/Hyperactivity Disorder: Review and recommendations for future research. *Clinical Child and Family Psychology Review*, 4(3), 183–207. doi:10.1023/A:1017592030434.
- Johnston, C., Murray, C., Hinshaw, S. P., Pelham, W. E., & Hoza, B. (2002). Responsiveness in interactions of mothers and sons with ADHD: Relations to maternal and child characteristics. *Journal of Abnormal Child Psychology*, 30(1), 77–88. doi:10.1023/A:1014235200174.
- Kawabata, Y., Tseng, W., & Gau, S. S. (2012). Symptoms of Attention-Deficit/Hyperactivity Disorder and social and school adjustment: The moderating roles of age and parenting. *Journal of Abnormal Child Psychology*, 40, 177–188. doi:10.1007/s10802-011-9556-9.
- Keown, L. J. (2012). Predictors of boys' ADHD symptoms from early to middle childhood: The role of father-child and mother-child interactions. *Journal of Abnormal Child Psychology*, 40(4), 569–581. doi:10.1007/s10802-011-9586-3.
- Lifford, K. J., Harold, G. T., & Thapar, A. (2008). Parent-child relationships and ADHD symptoms: A longitudinal analysis. *Journal of Abnormal Child Psychology*, 36(2), 285–296. doi:10.1007/s10802-007-9177-5.
- Luyckx, K., Tildesley, E. A., Soenens, B., Andrews, J. A., Hampson, S. E., Peterson, M., & Duriez, B. (2011). Parenting and trajectories of children's maladaptive behaviors: A 12-year prospective community study. *Journal of Clinical Child and Adolescent Psychology*, 40(3), 468–478. doi:10.1080/15374416.2011.563470.Parenting.
- Martínez, I., García, J. F., & Yubero, S. (2007). Parenting styles and adolescents' self-esteem in Brazil. *Psychological Reports*, 100(3), 731–745. doi:10.2466/PRO.100.3.731-745.

- McIntyre, R., & Hennessy, E. (2012). "He's just enthusiastic. Is that such a bad thing?" Experiences of parents of children with attention deficit hyperactivity disorder. *Emotional and Behavioural Difficulties*, 17(1), 65–82. doi:10.1080/13632752.2012.652428.
- Miranda-Casas, A., Grau-Sevilla, D., Marco-Taberner, R., & Roselló, B. (2007). Estilos de disciplina en familias con hijos con Trastorno por Déficit de Atención/Hiperactividad: Influencia en la evolución del trastorno [Discipline styles in families with children with Attention Deficit Hyperactivity Disorder: Their influence on the c. *Revista de Neurología*, 44(2), 23–25. Retrieved from <http://neuroser.com/pdfs/EstilosdedisciplinaenfamiliasconhijosconTDAH.influenciaenlaevoluci%F3ndeltrastorno..pdf>.
- Modesto-Lowe, V., Danforth, J. S., & Brooks, D. (2008). ADHD: Does parenting style matter? *Clinical Pediatrics*, 47(9), 865–872. doi:10.1177/000922808319963.
- Muñoz Silva, A. (2005). La familia como contexto de desarrollo infantil. Dimensiones de análisis relevantes para la intervención educativa y social [Family as context of child development. Main components to educational and social intervention]. *Portularia*, 5(2), 147–163. Retrieved from <http://rabida.uhu.es/dspace/bitstream/handle/10272/505/b1518923.pdf?sequence=1>.
- NCCMH. (2009). *Attention deficit hyperactivity disorder: The NICE guideline for diagnosis and management of ADHD in children, young people and adults*. Leicester, England: The British Psychological Society and the Royal College of Psychiatrists. [Full guideline].
- Olson, S. L., Lopez-Duran, N., Lunkenheimer, E. S., Chang, H., & Sameroff, A. J. (2011). Individual differences in the development of early peer aggression: Integrating contributions of self-regulation, theory of mind, and parenting. *Development and Psychopathology*, 23(1), 253–266. doi:10.1017/S0954579410000775.
- Perry, C. E., Hatton, D., & Kendall, J. (2005). Latino parents' accounts of attention deficit hyperactivity disorder. *Journal of Transcultural Nursing*, 16(4), 312–321. doi:10.1177/1043659605278938.
- Pfiffner, L. J., McBurnett, K., Rathouz, P. J., & Judice, S. (2005). Family correlates of oppositional and conduct disorders in children with attention deficit/hyperactivity disorder. *Journal of Abnormal Child Psychology*, 33(5), 551–563. doi:10.1007/s10802-005-6737-4.
- Pliszka, S. R. (2007). Practice parameter for the assessment and treatment of children and adolescents with Attention-Deficit/Hyperactivity Disorder. *Journal of the American Academy of Child and Adolescent Psychiatry*, 46(7), 894–921. doi:10.1097/chi.0b013e318054e724.
- Raya Trenas, A. F., Herreruzo Cabrera, J., & Pino Osuna, M. J. (2008). El estilo de crianza parental y su relación con la hiperactividad [Parenting styles and their relationship with hyperactivity]. *Psicothema*, 20(4), 691–696. Retrieved from <http://www.psicothema.com/pdf/3542.pdf>.
- Raya Trenas, A. F., Pino Osuna, M. J., & Herruzo, J. (2009). La agresividad en la infancia: El estilo de crianza parental como factor relacionado [Aggression in childhood: Parenting style as related factor]. *European Journal of Education and Psychology*, 2(3), 211–222. Retrieved from [http://ejep.es/index.php/journal/article/viewFile/33/pdf\\_42](http://ejep.es/index.php/journal/article/viewFile/33/pdf_42).
- Richaud de Minzi, M. C. (2006a). Loneliness and depression in middle and late childhood: The relationship to attachment and parental style. *The Journal of Genetic Psychology*, 167(2), 189–210. doi:10.3200/GNTP.167.2.189-210.
- Richaud de Minzi, M. C. (2006b). Parental styles and attachment in relation with self control, social skills and coping in children at risk due to poverty-related causes. In D. M. Devore (Ed.), *New developments in parent-child relations* (pp. 87–110). New York, NY: Nova Science.
- Richaud de Minzi, M. C. (2007). La percepción de estilos de relación con su padre y madre en niños y niñas de 8 a 12 años [Children's perception of parental behavior in 8–12 years-old subjects]. *Revista Iberoamericana de Diagnóstico Y Evaluación Psicológica*, 1(23), 63–81.
- Richaud De Minzi, M. C., Lemos, V., & Vargas Rubilar, J. (2014). Argentine culture and parenting styles. In H. Selin (Ed.), *Parenting across cultures: Childrearing, motherhood and fatherhood in non-western cultures* (Vol. 7, pp. 277–292). New York, NY: Springer. doi:10.1007/978-94-007-7503-9.
- Roselló, B., García-Castellar, R., Tárraga-Mínguez, R., & Mulas, F. (2003). El papel de los padres en el desarrollo y aprendizaje de los niños con trastorno por Déficit de Atención con Hiperactividad [The role played by parents in the development and learning of children with attention deficit hyperactivity disorder]. *Revista de Neurología*, 36(1), 79–84. Retrieved from <http://www.neuroser.com/pdfs/Elpapeldelospadreseneldesarrolloyaprendizajedelosni%F1osconTDAH.pdf>.
- Samaniego, V. C. (1998). *El Child Behaviour Checklist: Su estandarización y aplicación en un estudio epidemiológico. Problemas comportamentales y sucesos de vida en niños de 6 a 11 años de edad*. Universidad de Buenos Aires.
- Samaniego, V. C. (2008). El Child Behaviour Checklist: Su estandarización en población urbana argentina [The Child Behaviour Checklist (CBCL): Its standardization in the Argentine urban population]. *Revista de Psicología de La Universidad Católica Argentina*, 4(8), 113–130.
- Scandar, R. O. (2003). *El niño que no podía dejar de portarse mal. TDAH: Su comprensión y tratamiento [The boy who could not stop misbehaving. ADHD: Its understanding and treatment]*. Buenos Aires, Argentina: Distal.
- Scaramella, L. V., & Leve, L. D. (2004). Clarifying parent-child reciprocities during early childhood: The early childhood coercion model. *Clinical Child and Family Psychology Review*, 7(2), 89–107. doi:10.1023/B:CCFP.0000030287.13160.a3.
- Schaefer, E. S. (1965). A configurational analysis of children's reports of parent behavior. *Journal of Consulting Psychology*, 29(6), 552–557. doi:10.1037/h0022702.
- Scholten, S., Diamantopoulou, S., Tillman, C. M., & Rydell, A.-M. (2012). Effects of symptoms of ADHD, ODD, and cognitive functioning on social acceptance and the positive illusory bias in children. *Journal of Attention Disorders*, 16(8), 685–696. doi:10.1177/1087054711417398.
- Scottish Intercollegiate Guidelines Network (SIGN). (2009). *Management of attention deficit and hyperkinetic disorders in children and young people*. Edinburgh, Scotland: Scottish Intercollegiate Guidelines Network.
- Seipp, C. M., & Johnston, C. (2005). Mother-son interactions in families of boys with Attention-Deficit/Hyperactivity Disorder with and without oppositional behavior. *Journal of Abnormal Child Psychology*, 33(1), 87–98. doi:10.1007/s10802-005-0936-x.
- Skinner, E., Johnson, S., & Snyder, T. (2005). Six dimensions of parenting: A motivational model. *Parenting*, 5(2), 175–235. doi:10.1207/s15327922par0502\_3.
- Swanson, J. M. (1992). *School-based assessments and interventions for ADD students*. Irvine, CA: K. C. Publications.
- Swanson, E. N., Owens, E. B., & Hinshaw, S. P. (2012). Is the positive illusory bias illusory? Examining discrepant self-perceptions of competence in girls with ADHD. *Journal of Abnormal Child Psychology*, 40, 987–998. doi:10.1007/s10802-012-9615-x.
- Torío López, S., Peña Calvo, V. J., & Rodríguez Menéndez, M. C. (2008). Estilos educativos parentales. Revisión bibliográfica y

reformulación teórica [Parenting styles. Bibliographical revision and theoretical reformulation]. *Teoría de La Educación. Revista Interuniversitaria*, 20, 151–178. Retrieved from [http://gredos.usal.es/jspui/bitstream/10366/71805/1/Estilos\\_educativos\\_parentales\\_revision\\_b.pdf](http://gredos.usal.es/jspui/bitstream/10366/71805/1/Estilos_educativos_parentales_revision_b.pdf).

Villalobos, J. A., Cruz, A. V., & Sánchez, P. R. (2004). Estilos parentales y desarrollo psicosocial en estudiantes de Bachillerato [Parental styles and psychosocial development in high school students]. *Revista Mexicana de Psicología*, 21, 119–129.