

## Understanding children with behavioral inhibition: Multi-informant approach in educational and family contexts

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### Abstract

Behavioral inhibition is a temperament trait characterized by extreme fear in the face of novelty. Behavioral inhibition has been associated with the development of mental disorders. However, there is a lack of research examining the socioemotional and behavioral characteristics of behaviorally inhibited children both in family and school settings. For a more comprehensive and in-depth overview of children's behavior in each of these contexts, this study has collected data from both parents (mother and father-family setting) and from teachers (educational environment). The sample consisted of 109 children aged between 4 and 6 years old. Multi-informant approach was used: all fathers, mothers and teachers completed both the Preschool Behavioral Inhibition Scales, the Child Behavior Checklist (CBCL) for parents and teachers, and the Behavior Assessment System for Children and Adolescents (BASC). Our findings revealed that children classified as behavioral inhibition exhibit less socioemotional and behavioral adjustments than their uninhibited peers both in family and school contexts. Further, the shyness variable seemed to be strongly associated with behavioral inhibition, regardless of informant and context.

**Keywords:** behavioral inhibition, childhood, informant, shyness, socioemotional.

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## **Compreender crianças com inibição emocional: Uma abordagem com múltiplos informadores do contexto educacional e familiar**

### **Resumo**

A inibição comportamental é um traço de temperamento caracterizado por medo extremo face a situações novas. A inibição comportamental tem sido associada ao desenvolvimento de perturbações mentais. No entanto, é escassa a investigação que examina as características socio-emocionais e comportamentais de crianças com inibição comportamental em contextos educacionais e familiares. Para uma visão global mais compreensiva e aprofundada do comportamento da criança em cada um destes contextos, este estudo recolheu dados com os pais (mãe e pai – contexto familiar) e com os professores (contexto educacional). A amostra foi constituída por 109 crianças, entre os 4 e os 6 anos de idade. Foi utilizada uma abordagem com múltiplos informadores: todos os pais, mães e professores completaram as Escalas de Inibição Comportamental para o Pré-Escolar, o Questionário de Comportamento da Criança para pais e professores (CBCL e CTRF) e o Sistema de Avaliação do Comportamento para Crianças e Adolescentes (BASC). Os resultados revelaram que crianças consideradas com inibição comportamental apresentavam níveis mais baixos de ajustamento socio-emocional e comportamental comparativamente a crianças não inibidas, tanto no contexto familiar como no contexto educacional. Adicionalmente, a variável de timidez pareceu ser a que mais fortemente se associou à inibição comportamental, independentemente do informador e do contexto.

**Palavras-chave:** inibição comportamental, infância, informadores, timidez, socio-emocional

## **INTRODUCTION**

Behavioral Inhibition (BI) is a temperament trait characterized by the tendency to react with extreme shyness and withdrawal to novel objects, unknown situations, and unfamiliar people (Fox et al., 2005; Kagan et al., 1987; Vreeke et al., 2012). Like other temperament variables, BI boasts a relatively consistent, basic disposition which is biologically based and sensitive to the influence of contextual variables (Goldsmith et al., 1987; Kagan et al., 1998). Data suggest that approximately 15% of children are extremely inhibited and respond with fear and withdrawal behavior to unknown places, people and objects (Kagan, 1997). Similarly, this research team reports that close to 10% of children who exhibit BI at preschool continue to do so into childhood, adolescence and adulthood (Kagan & Snidman, 2004).

Further, girls tend to show higher, more stable levels of BI than boys (Essex et al., 2010; Keer et al., 1994).

The relationship between BI and mental disorders has been consistently found (Van Brakel & Muris, 2006). For instance, studies link BI to anxiety disorders (Claus & Blackford, 2012; Chronis-Tuscano et al., 2009; Essex et al., 2010; Hirshfeld-Becker et al., 2007; Hudson et al., 2011; Muris et al., 2011; Ordóñez-Ortega et al., 2013; Orgiles et al., 2012; Papachristou et al., 2018; Paulus et al., 2015; Rapee, 2014). Hence, when dealing with children who remain inhibited in a steady fashion over time (Hirshfeld-Becker et al., 1992), BI is seen as a behavioral marker of biological vulnerability in the development of anxiety disorders (Biederman et al., 2001; Kagan et al., 1988). However, given that not all anxious children show inhibited behavior and not all children with BI suffer from pathologies related to anxiety, it is deemed necessary to identify what other factors may play a role in the origin, development and maintenance of the relationship between BI and anxiety disorders (Rapee, 2014). Thus, it should be noted that just as there are variables that may favor the presence of BI and the development of anxiety disorders in children, there is a consensus to consider other factors that adopt a protective approach in the development of childhood anxiety, ranging from external, familial and socioenvironmental variables to those of an internal, genetic and cognitive nature (Degnan et al., 2010; Donovan & Spence, 2000). It is known that these risk and protective factors interact with one another and, depending on variables such as characteristics of context, an individual's vulnerability and the developmental stage, may or may not be the result of the development of inhibition and anxiety problems in children (Espinosa-Fernández, 2009). For these reasons, some authors see the need for new research which examines the additive and interactive effects of BI as well as a wide range of other vulnerability factors in the development of pathological anxiety in youths (Hirshfeld-Becker, Micco, et al., 2008; Hirshfeld-Becker, Micco, Simoes, & Henin, 2008).

In relation to those contexts where BI is present, some investigations suggest that attending school is particularly stressful for inhibited children (Coplan & Arbeau, 2008; Evans, 2001), which means that they become less involved in social activities (Kochanska, 1998) and may find it difficult to adapt in the long term. Given the advantages that early detection of BI can have on children, and bearing in mind that it is sensitive to the influence of contextual variables, preschool has been proposed as the crucial age to assess this construct (Goldsmith et al., 1987; Ordóñez et al., 2013). However, early detection of BI in children during preschool years has been mostly supported by information provided by either mothers or teachers (Amador et al., 2006).

To cover this gap, the aim of this study was to explore the existence of variables associated with BI in children aged between four and six years by collecting data

from multiple informants both in family (both father and mother) and school settings (teachers) by the very first time. It is hypothesized that BI children will exhibit less socioemotional and behavioral adjustment, regardless of informants and contexts.

## METHOD

### *Participants*

The participants were 109 children aged between four and six years, enrolled in two preschool centers located in Jaen, Spain. The mean age was 4 years and 10 months ( $SD = 0.60$ ). There was gender balance: 41.3% ( $n = 45$ ) children were boys and 58.7% ( $n = 64$ ) girls. Further, 59.6% ( $n = 65$ ) attended public and 40.4% ( $n = 44$ ) private schools. The socioeconomic status of this sample of children was middle (Hollingshead, 1975). In terms of the study's data collection, both the fathers and mothers and teachers served as informants. Most of informants in the family context were the children's biological parents (95%), followed by foster parents (5%). Among them, 1% were under 25 years of age, 30.3% between 26 and 35 years, 66% between 36 and 45, and 2.7% between 46 and 55. Regarding ethnicity, 98% of the parents were Spanish citizens compared to 2% from other countries. As for the teachers, 16 preschool educators (100% females) enrolled in the study.

### *Measures*

***Preschool Behavioral Inhibition Scale*** - Teacher's form (*Escala de Inhibición Conductual para Preescolares - Versión Maestros*, EICP-M), by Sola et al. (2003) and the Parents' form, EICP-P, an adaptation of the teacher's version for the purpose of this study. The EICP was designed to evaluate the BI variable in a child compared to other children (items 1 through 9) and in the playground or the park (items 10 through 14). The short version used in this study comprises 14 items with four answer alternatives (never, sometimes, almost always, always). It can be used on fathers, mothers and teachers, either individually or in groups, to assess children aged between 3 and 6 years, taking approximately five minutes to complete. The internal consistency of the EICP-M was good, with a Cronbach's alpha of .86 across the entire scale. The reliability rating for the EICP-P scale was  $\alpha = .85$  in the fathers'

sample and  $\alpha = .85$  in the mothers' sample. The convergent validity of the EICP-M was measured by correlating the scale's total score with the total scores obtained from other inhibition measures and different indices of psychopathy. Positive yet more modest correlations with inhibition measures derived from the fathers' and mothers' scores were also found. The discriminant validity of the EICP-M was assessed by calculating the correlation found between this scale's scores and those obtained from different indices of externalizing symptomatology, whose values were virtually non-existent or not significant.

***Child Behavior Checklist*** - for Parents, CBCL, and for Teachers-Caregivers, CTRF, by Achenbach and Rescorla (2000). This inventory evaluates a wide range of children's adaptive behaviors and problems, covering three groups of disorders: *externalizing disorders* (attention problems and aggressive behavior); *internalizing disorders* (emotional reactivity, anxiety/depression, somatic complaints and shyness); and *mixed type problems* (encompassing other problems and sleep problems); plus, *total problems*, which is a sum of the externalizing, internalizing and mixed type problems. It comprises 99 items with three answer alternatives (not true, somewhat or sometimes true, very true or often true). It can be used on fathers, mothers and teachers, either individually or in groups, to assess children aged between one and a half and six years, taking between 10 and 20 minutes to complete depending on the age-appropriate level. The CTRF boasts the same dimensions as the CBCL, with the exception of sleep problems.

***Behavior Assessment System for Children and Adolescents*** - Parents' form, BASC-P1, and Teacher's form, BASC-T1, by Reynolds and Kamphaus (2004). The BASC allows to evaluate the adaptive and maladaptive aspects of behavior in children and adolescents in a family and school setting as well as a clinical one. Each instrument includes an assessment of the *clinical scales or negative aspects* (aggressiveness, hyperactivity, attention problems, atypicality, depression, anxiety, shyness, somatization), the *adaptive scales or positive aspects* (adaptability, social skills), as well as the global dimensions of *externalizing problems* (aggressiveness and hyperactivity), *internalizing problems* (depression, anxiety and somatization) and *adaptive skills* (adaptability and social skills). It also measures, among other indices, the *Behavioral Symptoms Index*, which is the sum of aggressiveness, hyperactivity, attention problems, atypicality, depression and anxiety. It comprises 130 items with four answer alternatives (never, sometimes, frequently, almost always). At this level, it takes between 10 and 20 minutes to complete, and can be used on fathers, mothers and teachers, either individually or in groups, to assess children aged between three and six years. The BASC-T1 questionnaire boasts the same characteristics as the parents' version, although it only has 106 items.

## *Procedure*

The participants were recruited from two public and private schools, between-school random assignment from the educative census. Before collecting data, approval of Ethical School Board and University Committees was required. The families were then informed of the study's objectives via letter and at a meeting held in the participating schools. The schools' directors explained the research aims to the teaching staff to enhance their involvement. Parents and teachers were asked to give written informed consent. In order to facilitate the implementation of the study and to guarantee the families' anonymity, once questionnaires were filled in, both parents and teachers sent them back to researchers in a sealed envelope by a set time. The measures were counterbalanced to avoid order effects; and the test pack included a contact telephone number and email address in case of any doubts by parents and/or teachers. The participation rate was 89% for parents (both father and mother) and 100% for teachers. Children were identified as behaviorally inhibited should they score higher than recommended normative data on the EICP-M and EICP-P questionnaires, filled in by the teachers and parents, respectively.

## *Data analyses*

Statistical analysis was carried out using SPSS 22.0 for Windows. The significance level was set at  $p < .05$  across all conducted statistical tests. A comparison of means (or medians) for independent samples using the Student's t-test and the Mann-Whitney U test was performed (in order to analyse the differences between children with and without BI for the different assessed variables). In addition, effect size (ES) in the comparison of means was examined, adopting the criteria proposed by Cohen (1988). Findings will be displayed for each informant and taking into account children's gender.

## **RESULTS**

Table 1 presents with socioemotional and behavioral adjustments for the whole sample of children with or without BI based on each informant. For a clearer picture, only statistically differences with at least moderate effect sizes ( $d > 0.50$ ) will be further examined. As it may be seen, consensus among all informants (teachers, fathers and mothers) was limited to shyness. Thus, any informant expressed that

shyness was the best variable to differentiate between behaviorally and unbehaviorally inhibited children, regardless of context (educational and family). There was an agreement in the family context: BI children scored significantly lower in hyperactivity, adaptability, social and adaptive skills, all measured by BASC. However, teachers expressed that BI children evidenced significantly higher levels of anxiety/depression symptomatology, somatic complains, other problems and internalizing disorders all measured by C-TRF. No consensus between teachers and fathers or mothers in any variable found to be significant was revealed.

**Table 1**

*T-test for the variables evaluated by C-BCL (C-TRF) and BASC among children (without differentiating by sex) with behavioral inhibition ( $n = 37$ ) and without behavioral inhibition ( $n = 72$ ) in each of the three informants*

Variables	Father				Mother				Teacher			
	t	$\bar{X}_{BI}$ (SD)	$\bar{X}_{NBI}$ (SD)	$d^A$	t	$\bar{X}_{BI}$ (SD)	$\bar{X}_{NBI}$ (SD)	$d^A$	t	$\bar{X}_{BI}$ (SD)	$\bar{X}_{NBI}$ (SD)	$d^A$
Emotional reactivity	<b>-2.08*</b>	2.92 (2.60)	1.90 (1.96)	0.52	-0.30	2.81 (2.87)	2.65 (2.42)		-1.24	1.84 (2.55)	1.32 (1.76)	
Anxiety/depression	-1.86	3.57 (2.26)	2.71 (2.23)		0.99	3.78 (2.49)	3.13 (2.31)		<b>-3.47**</b>	3.70 (3.50)	1.51 (2.14)	0.81
Somatic complaints	<b>-2.11*</b>	2.95 (1.97)	2.14 (1.84)	0.44	1.19	2.05 (2.04)	2.60 (2.36)		<b>-2.69**</b>	1.68 (2.36)	.58 (1.31)	0.63
Shyness	<b>-4.66**</b>	3.22 (2.32)	1.25 (1.51)	1.10	<b>-3.21**</b>	2.54 (2.07)	1.32 (1.42)	0.73	<b>-3.69**</b>	3.95 (4.15)	1.26 (2.13)	0.90
Attention problems	0.43	2.35 (2.01)	2.51 (1.79)		0.92	2.16 (2.02)	2.51 (1.81)		0.50	2.97 (2.97)	3.29 (3.22)	
Aggressive behavior	0.13	8.19 (5.55)	8.33 (5.48)		0.46	8.59 (5.96)	9.13 (5.40)		0.06	5.32 (5.44)	5.40 (6.55)	
Sleep problems	-0.11	2.70 (2.17)	2.65 (2.38)		0.58	2.84 (2.20)	3.15 (2.84)		-	-	-	
Other problems	-2.39**	9.62 (5.94)	6.99 (4.27)	0.48	-1.16	9.05 (5.33)	7.81 (4.92)		<b>-2.54*</b>	8.24 (6.68)	5.21 (5.44)	0.51
Internalizing disorders	<b>-3.38**</b>	12.59 (7.38)	7.89 (5.72)	0.80	-1.08	11.19 (7.67)	9.61 (6.91)		<b>-3.46**</b>	11.16 (1.47)	4.68 (6.20)	0.83
Externalizing disorders	-0.01	1.81 (6.99)	1.79 (6.52)		0.63	1.76 (7.51)	11.65 (6.63)		0.22	8.30 (7.57)	8.69 (9.22)	
Mixed type problems	-1.64	12.32 (7.37)	9.90 (7.07)		-0.66	11.89 (6.64)	1.96 (7.02)					
Total problems	<b>-2.04*</b>	35.78 (2.62)	28.39 (16.30)	0.41	-0.34	33.59 (2.35)	32.26 (18.77)		<b>-2.24*</b>	27.70 (22.67)	18.58 (18.62)	0.45

**Table 1**

*T-test for the variables evaluated by C-BCL (C-TRF) and BASC among children (without differentiating by sex) with behavioral inhibition (n = 37) and without behavioral inhibition (n = 72) in each of the three informants (cont.)*

Variables	Father				Mother				Teacher			
	t	X <sub>BI</sub> (SD)	X <sub>NBI</sub> (SD)	d <sup>A</sup>	t	X <sub>BI</sub> (SD)	X <sub>NBI</sub> (SD)	d <sup>A</sup>	t	X <sub>BI</sub> (SD)	X <sub>NBI</sub> (SD)	d <sup>A</sup>
Aggressive- ness	1.09	5.03 (3.01)	5.74 (3.59)		1.57	5.59 (3.6)	6.78 (3.76)		0.15	4.92 (5.37)	5.07 (4.42)	
Hyperac- tivity	<b>2.48*</b>	13.92 (6.14)	17.01 (3.59)	0.50	<b>2.57*</b>	15.11 (6.42)	18.92 (7.72)	0.52	<b>2.13*</b>	4.68 (5.54)	7.11 (5.66)	0.43
Attention problems	-0.04	6.84 (3.73)	6.81 (3.12)		1.09	6.09 (3.93)	6.92 (3.67)		-1.21	6.16 (4.97)	5.10 (3.95)	
Atypicality	-1.69	2.59 (2.44)	1.81 (2.23)		0.92	1.78 (2.04)	2.18 (2.17)		-1.61	3.65 (3.52)	2.53 (3.37)	
Depression	-0.71	6.73 (4.29)	6.16 (3.84)		-0.19	7 (4.64)	6.83 (3.91)		<b>-2.06*</b>	4.68 (4.47)	3.19 (2.96)	0.42
Anxiety	0.28	5.92 (2.72)	6.08 (2.98)		1.66	5.84 (3.61)	7 (3.37)		-0.09	2.43 (2.42)	2.39 (2.38)	
Shyness	<b>-4.91**</b>	11.65 (5.20)	6.94 (3.64)	1.11	<b>-4.21**</b>	11.68 (5.76)	7.32 (4.75)	0.85	<b>-7.05**</b>	7.89 (5.32)	2.47 (2.71)	1.42
Somatiza- tion	<b>-2.49*</b>	6.7 (3.55)	5.07 (3.06)	0.50	-0.87	6.19 (4.06)	5.57 (3.19)		<b>-2.26*</b>	5.51 (5.68)	1.68 (2.7)	0.46
Adapt- ability	<b>4.06**</b>	2.81 (3.57)	23.89 (3.82)	0.82	<b>4.21**</b>	21 (3.82)	24.14 (3.63)	0.85	1.69	16.32 (3.53)	17.47 (3.26)	
Social skills	<b>3.85**</b>	24.54 (6.58)	29.13 (5.49)	0.78	<b>3.94**</b>	26.24 (5.47)	3.67 (5.58)	0.79	1.25	14.08 (6.14)	15.75 (6.75)	
External- izing problems	1.79	81.78 (14.89)	87.22 (14.97)		<b>2.36*</b>	84.34 (15.36)	92.28 (17.49)	0.48	1.27	9.78 (16.93)	94.94 (15.64)	
Internal- izing problems	-1.29	136.7 (23.86)	13.11 (25.9)		0.31	135.86 (27.77)	137.47 (23.34)		<b>-2.08*</b>	149.57 (34.73)	138.71 (19.61)	0.42
Adaptative skills	<b>4.18**</b>	86.41 (19.82)	102.43 (18.44)	0.84	<b>4.92**</b>	88.76 (17.21)	106.17 (17.63)	0.99	1.56	99.11 (17.51)	104.74 (17.92)	

X<sub>BI</sub> = Mean of the group of children with Behavioral Inhibition

X<sub>NBI</sub> = Mean of the group of children without Behavioral Inhibition

SD = Standard deviation

d<sup>A</sup> = Value of the effect size (d) of Student's t according to Cohen's (1988)

\* The Student t-test is significant at .05 level (bilateral)

\*\* The Student t-test is significant at .01 level (bilateral)

For a more comprehensive and in-depth overview, Tables 2 and 3 display data from boys and girls, respectively. As far as boys are concerned (see Table 2), all informants (teachers, fathers and mothers) agreed on the role of shyness to statistically differentiate between BI and no-BI children. However, a unique pattern was revealed for boys: fathers and mothers agreed that BI children exhibited significantly higher levels of anxiety/depression symptomatology as measured by C-BCL. However, consistently with the whole sample, BI boys differed on the adaptability, social and adaptive skills based on both parents. On contrary, teachers expressed that BI boys evidenced significantly higher levels only of somatic complains. Unlike

the whole sample, there was consensus between teachers and fathers on internalizing disorders to differentiate between BI and no-BI boys based on C-BCL but not on BASC. Only fathers found emotional reactivity, internalizing disorders, other and mixed type problems (according to C-BCL), and atypicality, depression, and internalizing disorders (based on BASC) could differentiate BI and no-BI boys. In sum, informants revealed a wider and more diffuse number of variables for BI boys.

**Table 2**

*T test for the variables evaluated by C-BCL (C-TRF) and BASC among boys with behavioral inhibition ( $n = 15$ ) and without behavioral inhibition ( $n = 30$ ) in each of the three informants*

Variables	Father				Mother				Teacher			
	t	X <sub>BI</sub> (SD)	X <sub>NBI</sub> (SD)	d <sup>A</sup>	t	X <sub>BI</sub> (SD)	X <sub>NBI</sub> (SD)	d <sup>A</sup>	t	X <sub>BI</sub> (SD)	X <sub>NBI</sub> (SD)	d <sup>A</sup>
Emotional reactivity	<b>-2.64*</b>	3.80 (3.02)	1.60 (1.61)	1.00	-0.98	3.87 (3.09)	2.90 (2.65)		.345	1.47 (1.59)	1.67 (1.76)	
Anxiety/depression	<b>-3.08**</b>	4.73 (2.52)	2.47 (2.22)	0.96	<b>-2.15*</b>	4.87 (2.99)	3.13 (2.28)	0.67	-1.63	2.67 (2.58)	1.53 (1.97)	
Somatic complaints	-1.55	3.27 (1.9)	2.27 (2.1)		1.13	1.93 (1.98)	2.8 (2.59)		<b>-2.44*</b>	1.2 (1.2)	0.37 (.765)	0.88
Shyness	<b>-4.26**</b>	4.13 (2.64)	1.07 (1.25)	1.65	<b>-2.11*</b>	3 (2.39)	1.57 (1.52)	0.76	<b>-2.81**</b>	4 (3.64)	1.57 (2.16)	0.87
Attention problems	-0.05	2.87 (2.23)	2.83 (1.57)		0.50	2.67 (2.35)	3 (1.94)		0.96	3.07 (2.79)	4.1 (3.65)	
Aggressive behavior	-1.48	1.33 (5.66)	7.93 (4.82)		-0.76	1.53 (7.22)	9.1 (5.21)		0.43	5.4 (5.16)	6.2 (6.03)	
Sleep problems	-1.27	3.27 (2.24)	2.4 (2.02)		0.44	3 (2.64)	3.4 (2.9)			-	-	
Other problems	<b>-2.88**</b>	11.93 (6.82)	6.4 (4.13)	1.05	-1.39	1.67 (6.49)	8.17 (5.25)		-0.43	7.13 (5.5)	6.37 (5.54)	
Internalizing disorders	<b>-3.93**</b>	15.93 (7.63)	7.4 (4.99)	1.40	-1.28	13.67 (1.04)	1.3 (7.29)		<b>-2.15*</b>	9.33 (7.55)	5.13 (5.36)	0.67
Externalizing disorders	-1.55	13.87 (6.68)	1.8 (6)		-0.44	13.2 (9.26)	12.13 (6.67)		0.69	8.47 (6.83)	1.3 (9.06)	
Mixed type problems	<b>-2.03*</b>	15.2 (8.68)	9.78 (8.24)	0.63	-0.87	13.67 (8.26)	11.57 (7.22)		-0.55	24.93 (17.67)	21.8 (17.82)	
Total problems	<b>-3.28**</b>	45 (22.12)	27.2 (14.14)	1.02	-0.93	4.53 (26.5)	34 (19.59)		-	-	-	

**Table 2**

*T test for the variables evaluated by C-BCL (C-TRF) and BASC among boys with behavioral inhibition (n = 15) and without behavioral inhibition (n = 30) in each of the three informants (cont.)*

Variables	Father				Mother				Teacher			
	t	X <sub>BI</sub> (SD)	X <sub>NBI</sub> (SD)	d <sup>A</sup>	t	X <sub>BI</sub> (SD)	X <sub>NBI</sub> (SD)	d <sup>A</sup>	t	X <sub>BI</sub> (SD)	X <sub>NBI</sub> (SD)	d <sup>A</sup>
Aggressive- ness	-0.92	6.07 (3.12)	5.1 (3.36)		0.31	6.53 (3.54)	6.9 (3.71)		-0.41	5.87 (5.41)	5.23 (4.55)	
Hyperac- tivity	-0.00	17.8 (6.78)	17.8 (6.27)		0.98	18.07 (7.16)	2.53 (8.2)		1.66	5.67 (4.51)	8.47 (5.66)	
Attention problems	-0.67	8.13 (4.5)	7.37 (3.04)		1.03	7 (4.45)	8.4 (4.21)		-0.28	6.6 (5.11)	6.2 (3.96)	
Atypicality	<b>-2.31*</b>	3.8 (2.67)	1.9 (2.55)	0.72	1.23	2.67 (2.44)	2.77 (2.63)		-1.87	4.33 (3.92)	2.57 (2.56)	
Depression	<b>-2.42*</b>	8.53 (4.58)	5.7 (3.17)	0.75	-1.58	9.07 (5.84)	6.7 (4.08)		-.86	4.27 (4.14)	3.33 (2.99)	
Anxiety	-1.46	7.47 (2.77)	6.13 (2.93)		-0.43	7.67 (4.63)	7.17 (3.01)		0.87	2.4 (2.47)	3.13 (2.72)	
BASC Shyness	<b>-4.69**</b>	12.6 (5.18)	6.7 (3.22)	1.46	<b>-3.57**</b>	13.07 (6.41)	7.07 (4.67)	1.11	<b>-3.31**</b>	7.73 (5.83)	2.5 (2.57)	1.30
Somatiza- tion	-1.81	6.67 (3.63)	4.8 (3.05)		.017	5.67 (3.79)	5.87 (3.52)		-0.94	2.8 (3.48)	1.87 (2.9)	
Adaptability	<b>2.48*</b>	2.93 (4.07)	24.07 (3.94)	0.77	<b>2.74**</b>	21.07 (3.55)	24.2 (3.63)	0.85	1.45	16.2 (3.85)	17.63 (2.67)	
Social skills	<b>2.67*</b>	23.67 (8.16)	29.13 (5.46)	0.83	<b>3.11**</b>	24.87 (5.3)	29.9 (5.02)	0.97	1.41	11.8 (3.89)	14.37 (6.43)	
External- izing problems	-0.68	90 (15.58)	86.77 (14.7)		0.81	9.33 (7.2)	94.77 (12.2)		0.71	94 (14.33)	97 (15.16)	
Internalizing problems	<b>-2.43*</b>	146.33 (27.54)	129.83 (17.74)	0.76	-0.83	145.8 (35.59)	138.43 (23.27)		-0.62	146.2 (27.92)	141.47 (22.07)	
Adaptative skills	<b>2.64*</b>	85.53 (24.85)	102.8 (18.26)	0.82	<b>3.67**</b>	85 (16.94)	104.7 (16.93)	1.14	1.62	94.67 (13.93)	102.37 (15.11)	

X<sub>BI</sub> = Mean of the group of children with Behavioral Inhibition

X<sub>NBI</sub> = Mean of the group of children without Behavioral Inhibition

SD = Standard deviation

d<sup>A</sup> = Value of the effect size (d) of Student's t according to Cohen's (1988)

\* The Student t-test is significant at .05 level (bilateral)

\*\* The Student t-test is significant at .01 level (bilateral)

Consistently with previously described data (see Tables 1 and 2), Table 3 shows that BI girls scored significantly higher on shyness by all informants and assessment measures. There was consensus between fathers and mothers that BI differed from no-BI girls on a limited number of variables: hyperactivity, adaptability, externalizing problems, social and adaptive skills. However, only fathers identified their BI girls as significantly less aggressive compared to mothers, while only mothers informed lower levels of anxiety in their BI girls. Apart from shyness, teachers scored higher on anxiety/depression symp-

tomatology, somatic complains, other and mixed-type problems, internalizing disorders and problems in the educational environment, without any consensus with the family context.

**Table 3**

*T test for the variables evaluated by C-BCL (C-TRF) and BASC among girls with behavioral inhibition (n = 22) and without behavioral inhibition (n = 42) in each of the three informants*

Variables	Father				Mother				Teacher			
	t	X <sub>BI</sub> (SD)	X <sub>NBI</sub> (SD)	d <sup>A</sup>	t	X <sub>BI</sub> (SD)	X <sub>NBI</sub> (SD)	d <sup>A</sup>	t	X <sub>BI</sub> (SD)	X <sub>NBI</sub> (SD)	d <sup>A</sup>
Emotional reactivity	-0.34	2.32 (2.14)	2.12 (2.17)		0.70	2.09 (1.63)	2.48 (2.26)		-1.50	2.09 (2.91)	1.07 (1.74)	
Anxiety/depression	0.19	2.77 (1.92)	2.89 (2.25)		0.21	3.05 (1.81)	3.12 (2.37)		<b>-3.21**</b>	4.41 (3.91)	1.5 (2.28)	0.98
Somatic complaints	-1.44	2.73 (2.02)	2.05 (1.62)		0.55	2.14 (2.12)	2.45 (2.2)		<b>-1.89*</b>	2 (2.89)	0.74 (1.59)	0.59
Shyness	<b>-2.61*</b>	2.59 (1.89)	1.38 (1.68)	0.68	<b>-2.47*</b>	2.23 (1.84)	1.14 (1.31)	0.72	<b>-2.80*</b>	3.91 (4.54)	1.05 (2.1)	0.90
Attention problems	0.57	2 (1.86)	2.29 (1.91)		0.78	1.82 (1.73)	2.17 (1.65)		-0.25	2.91 (3.16)	2.71 (2.77)	
Aggressive behavior	1.26	6.73 (5.1)	8.62 (5.94)		1.34	7.27 (4.65)	9.14 (5.59)		-0.25	5.17 (5.74)	4.83 (6.92)	
Sleep problems	0.80	2.32 (1.96)	2.83 (2.62)		0.37	2.73 (1.9)	2.98 (2.81)					
Other problems	-0.53	8.05 (4.8)	7.4 (4.36)		-0.34	7.95 (4.1)	7.55 (4.72)		<b>-2.88**</b>	9 (7.4)	4.38 (5.29)	0.75
Internalizing disorders	-1.25	1.32 (6.43)	8.24 (6.24)		-0.23	9.5 (5.12)	9.12 (6.67)		<b>-2.89**</b>	12.41 (12.08)	4.36 (6.78)	0.89
Externalizing disorders	1.14	8.73 (6.55)	1.79 (6.94)		1.32	9.09 (5.69)	11.31 (6.64)		-0.27	8.18 (8.2)	7.55 (9.27)	
Mixed type problems	-0.24	1.36 (5.75)	9.98 (6.21)		-0.09	1.68 (5.12)	1.52 (6.929)		<b>-2.34*</b>	29.59 (25.67)	16.29 (19.16)	0.51
Total problems	0.05	29.5 (17.35)	29.24 (17.81)		0.48	28.86 (13.55)	31.02 (18.31)		-	-	-	

**Table 3**

*T test for the variables evaluated by C-BCL (C-TRF) and BASC among girls with behavioral inhibition (n = 22) and without behavioral inhibition (n = 42) in each of the three informants (cont.)*

Variables	Father				Mother				Teacher			
	t	X <sub>BI</sub> (SD)	X <sub>NBI</sub> (SD)	d <sup>A</sup>	t	X <sub>BI</sub> (SD)	X <sub>NBI</sub> (SD)	d <sup>A</sup>	t	X <sub>BI</sub> (SD)	X <sub>NBI</sub> (SD)	d <sup>A</sup>
Aggressive- ness	2.07*	4.32 (2.78)	6.16 (3.71)	0.54	1.75	4.95 (3.59)	6.69 (3.83)		0.54	4.27 (5.37)	4.95 (4.38)	
Hyperactivity	<b>3.59**</b>	11.27 (4)	16.45 (6.08)	0.94	<b>2.69*</b>	13.09 (5.08)	17.76 (7.24)	0.70	1.14	4 (6.16)	6.14 (5.53)	
Attention problems	0.55	5.95 (2.9)	6.4 (3.15)		0.49	5.45 (3.5)	5.86 (2.84)		-1.39	5.86 (4.97)	4.31 (3.8)	
Atypicality	0.06	1.77 (1.92)	1.74 (2.00)		1.35	1.18 (1.5)	1.76 (1.69)		-0.70	3.18 (3.23)	2.5 (3.87)	
Depression	0.90	5.5 (3.71)	6.48 (4.26)		1.42	5.59 (3)	6.93 (3.84)		-1.92	4.95 (4.75)	3.10 (2.97)	
Anxiety	1.61	4.86 (2.16)	6.05 (2.06)		<b>3.25**</b>	4.59 (1.99)	6.88 (3.63)	0.71	-1.05	2.45 (2.44)	1.86 (1.98)	
BASC Shyness	<b>-3.33**</b>	11 (5.23)	7.12 (3.94)	0.87	<b>-2.45*</b>	1.73 (5.21)	7.5 (4.85)	0.64	<b>-4.74**</b>	8 (5.09)	2.45 (2.83)	1.46
Somatization	-1.70	6.73 (3.57)	5.26 (3.1)		-1.29	6.55 (4.29)	5.36 (2.97)		-1.62	4 (6.8)	1.55 (2.56)	
Adaptability	<b>3.18**</b>	2.73 (3.28)	23.76 (3.77)	0.83	<b>3.15**</b>	2.95 (4.07)	24.12 (3.67)	0.82	1.01	16.41 (3.39)	17.36 (3.65)	
Social skills	<b>2.74**</b>	25.14 (5.37)	29.12 (5.58)	0.71	<b>2.63*</b>	27.18 (5.51)	31.21 (5.95)	0.69	0.60	15.64 (6.95)	16.74 (6.88)	
Externalizing problems	<b>3.03**</b>	76.18 (11.72)	87.55 (15.339)	0.96	<b>2.44*</b>	8.09 (12.75)	9.5 (17.68)	0.64	1.04	88.59 (18.5)	93.21 (15.92)	
Internalizing problems	0.02	13.14 (18.95)	13.31 (3.64)		1.31	129.09 (18.94)	136.79 (23.64)		<b>1.72*</b>	151.86 (39.17)	136.74 (17.66)	0.55
Adaptive skills	<b>3.21**</b>	87 (16.15)	102.36 (33.68)	0.84	<b>3.36**</b>	91.32 (17.31)	107.21 (18.24)	0.88	0.83	102.14 (19.31)	106.43 (19.69)	

X<sub>BI</sub> = Mean of the group of children with Behavioral Inhibition

X<sub>NBI</sub> = Mean of the group of children without Behavioral Inhibition

SD = Standard deviation

d<sup>A</sup> = Value of the effect size (d) of Student's t according to Cohen's (1988)

\* The Student t-test is significant at .05 level (bilateral)

\*\* The Student t-test is significant at .01 level (bilateral)

Overall, shyness appears to present a unique picture as it was the only variable to differentiate BI children, regardless of gender, informants and measure. Further, consensus between fathers and mothers to distinguish significantly (and at least medium effect size) their BI boys and girls was limited to the following BASC subscales: adaptability, social and adaptive skills.

## DISCUSSION

This study has explored the socioemotional and behavioral characteristics of children identified as behaviorally inhibited in the two most important contexts for any child, that is, family and school, based on information provided by both parents and teachers. One of the strengths of this study is the use of data collection from both the father, mother and teacher as sources of information either in the family or educational environment, an approach which goes beyond most studies that have almost exclusively gathered information from the mother alone, which adds further value to this study. This allows for a more comprehensive and in-depth overview of children's behavior from one context or another.

First, Table 1 reveals that both parents scored their inhibited children significantly lower in social skills and in adaptability/adaptive skills compared to their uninhibited children. This suggests that inhibited children present with lower and/or worse levels of adjustment, which may be due to their shyness and lack of social skills that the parents may identify as signs of anxiety and depression. This is strongly supported in literature, in the sense that BI is often associated with anxiety and depression (e.g., Muris et al., 2011; Schofield et al., 2009). Further, teachers reported BI children scored higher than their uninhibited peers for shyness, anxiety/depression and internalizing disorders. However, contrary to parents, teachers have reported higher levels of somatic complaints in their identified BI students, regardless of gender. Somatic complaints may have been seen as potential signs of anxiety symptomatology by teachers. This data aligns with the results from some researchers who have stated that going to school can be particularly stressful for inhibited children (e.g., Coplan & Arbeau, 2008). It has been argued that BI children may find extremely difficult to meet academic demands, for example, those related to verbal participation. All this may compound a child's emotional distress, appearing as symptoms of anxiety and depression, where we find somatization or somatic complaints which children may exhibit in the classroom (Ballespí et al., 2012). In addition, in contrast with the findings in the family context, teachers did not score lower social and adaptive skills. It must be noted that one of the main tasks of a school teacher, particularly at preschool level, is to promote and facilitate interaction among children, adopting a methodology with an emphasis on participation, which may well mask or even minimize the potential difficulties that these children may face. However, our data are similar to previous study that found that while young children with behavioral inhibition displayed more reticent behavior than their uninhibited peers, no differences were found between them when it came

to social play (Coplan et al., 2009). One hypothesis may be that BI children behave differently in diverse scenarios. Thus, Schneider et al. (2000) informed that extremely inhibited or reticent children would generally engage less in social contacts outside of school than other children. Further, some authors reported that parents of shy and anxious children tend to overprotect their sons and daughters more, helping them to avoid novel and/or social activities if they feel they may constitute a source of stress or distress for them (Espinosa-Fernández, 2009; Rubin et al., 2001).

Taking gender into consideration, both fathers and mothers tend to notice more problems and difficulties with their inhibited sons over their daughters. Firstly, these differences may reflect the different criteria or parenting sensitivity of mothers and fathers regarding their children's behavior and manifestations, particularly of fathers towards their boys. One hypothesis is that fathers may tend to tolerate to withdrawn and inhibited behavior from their girls, but believe that boys should be "brave" and "strong" (Engfer, 1993; Stevenson-Hinde, 2000). Thus, if inhibited boys feel forced by their fathers to be less inhibited and reticent in their behavior, they may react in an aggressive and defensive manner due to the frustration felt at not being able to do what a family member expects of them, in this case the father. As far as gender and teachers as informants are concerned, they expressed that BI boys show fewer difficulties compared to girls. Bearing in mind girls tend to be more emotional and prosocial (Etxebarria et al., 2003), the presence of difficulties in these aspects may be more prominent when it appears in girls rather than boys.

One of the significant findings to emerge from this study is the agreement among the three informants for shyness, regardless of the context and measure. This suggest shyness is closely associated to behavioral inhibition. Finally, it is crucial to implement interventions aimed at enhancing adaptability, social and adaptive skills.

Overall, the results obtained demonstrate that children who show greater BI present with lower levels of socioemotional and behavioral adjustment than their uninhibited peers. This occurs across different contexts and different informants. Specifically, the findings reveal that, in those cases where significant differences were detected, it was the inhibited children who scored higher for those variables that can be described as negative, namely shyness, anxiety/depression, somatization/somatic complaints and emotional reactivity. However, for the variables considered positive, such as adaptability, social skills and adaptive behavior (a combination of the previous two), uninhibited children presented higher scores than their inhibited counterparts, this being more evident in the family context.

Limitations of this study include the exclusive participation of female teachers, as no male instructors figured among the teaching staff. Future research would

benefit from implementing a longitudinal perspective, as some studies found that differences between children with and without BI are more robust in assessments in longitudinal studies with three-year follow-ups (Rosenbaum et al., 1993).

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