

## Family linkages and social inclusion. Predictors of prosocial behavior in childhood

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**Título:** Vínculos familiares e inclusión social. Variables predictoras de la conducta prosocial en la infancia.

**Resumen:** Los objetivos de esta investigación son analizar las relaciones de la conducta prosocial con variables del entorno familiar (apego y abandono del padre y de la madre), variables personales (inestabilidad emocional, agresividad y afrontamiento ante situaciones estresantes) y variables del entorno social próximo (aceptación y rechazo por los pares); además, estudiar las variables predictoras de la conducta prosocial. La conducta prosocial constituye un factor de protección personal que fomenta relaciones positivas entre los pares y promueve comportamientos de adaptación personal y social (Mikolajewski, Chavarria, Moltisanti, Hart & Taylor, 2014). Han participado 1447 niños/as (50.4% varones y 49.6% mujeres). Tienen entre 7 y 12 años ( $M = 9.27$ ;  $DT = 1.36$ ). Los resultados comprueban las relaciones positivas de la conducta prosocial con apego (padre y madre), afrontamiento funcional y aceptación por los pares. Asimismo, muestran las relaciones negativas de la conducta prosocial con abandono (padre y madre), inestabilidad emocional, agresividad, afrontamiento disfuncional y rechazo por los pares. Las variables predictoras de la conducta prosocial son, en positivo, apego de la madre, afrontamiento funcional y expectativas de aceptación por los pares; y, en negativo, son inestabilidad emocional, agresividad física y verbal, y expectativas de rechazo por los pares. Se discuten las implicaciones educativas.

**Palabras clave:** conducta prosocial; vínculos paternos; afrontamiento; agresividad; inestabilidad emocional; relaciones con los pares.

**Abstract:** The purpose of this study was to investigate the relationship between prosocial behavior and family environment variables (attachment to the mother and father and abandonment by the mother and father), personal variables (emotional instability, aggression, and coping strategies), and variables that relate to the immediate social environment (peer acceptance and rejection). This study also examined the predictors of prosocial behavior. Prosocial behavior is a personal protective factor that encourages positive relationships between peers and promotes personal and social adjustment behaviors (Mikolajewski, Chavarria, Moltisanti, Hart & Taylor, 2014). A study with a sample of 1,447 children (50.4% male and 49.6% female) aged between 7 and 12 years ( $M = 9.27$ ;  $SD = 1.36$ ) was conducted. The results confirmed the positive relationships between prosocial behavior and parental attachment, functional coping, and peer acceptance. The results also confirmed the negative relationships between prosocial behavior and abandonment by the parents, emotional instability, aggression, dysfunctional coping, and peer rejection. The positive predictor variables for prosocial behavior were attachment to the mother, functional coping, and expectations of peer acceptance. The negative predictor variables for prosocial behavior were emotional instability, physical and verbal aggression, and expectations of peer rejection. The findings have educational implications, which are discussed herein.

**Keywords:** Prosocial behavior; Attachment; Coping; Aggression; Emotional instability; Peer relationships.

### Introduction

Prosocial behavior refers to voluntary behavior that aims to help others, regardless of whether it will yield benefits for the person performing that behavior. Prosocial behaviors are a key factor for personal development (Eisenberg, Fabes, & Spinrad, 2006; Lerner, von Eye, Lerner, & Lewin-Bizan, 2009) because they encourage personal and social adjustment behaviors (Carlo et al., 2014; Mikolajewski et al., 2014). Prosocial children are more accepted by their peers and have better interpersonal relations throughout their development (Asher & McDonald, 2009).

Prosocial children are more concerned with the needs of others and are more accepted by others. Furthermore, a prosocial disposition can be considered a protective factor against aggression and emotional instability (Caprara, Alessandri, & Eisenberg, 2012; Carlo, Hausmann, Christiansen & Randall, 2003; Mestre, Tur, Samper, & Latorre, 2010), fostering a positive atmosphere of coexistence. Thus, in the school environment, a prosocial disposition is particularly important. It is highly relevant to social relations because it forms the basis of positive interactions with others (Mikolajewski et al., 2014).

But what are the mechanisms that encourage prosocial behaviors? Parenting and the way in which family relations

are understood can lead to prosocial behaviors. For example, a family environment that is based on parental support and communication is positively related to prosocial behaviors (Ferreira et al., 2016). Furthermore, prosocial children build positive relationships with their immediate surroundings and achieve greater acceptance by their peers (Mikolajewski et al., 2014). Therefore, exploring the mechanisms that encourage prosocial behaviors in middle and late childhood may be crucial in the design of intervention programs. Accordingly, this study examined the personal, family, and social environment factors that relate to prosocial behavior and that may inhibit or facilitate prosocial behavior in middle and late childhood.

### Parenting and attachment

Attachment develops in most children after they establish initial contact with their primary caregivers—their parents—to meet basic needs through the children's interactions with the environment. These interactions send children messages of affect, protection, and stimulation, thereby creating affective linkages (Sroufe, 2005). Relationships of attachment refer to the long-term emotional linkages that children form with a particular attachment figure, generally the mother (Ainsworth, 1989), who provides a secure base and a haven of safety (Seibert & Kerns, 2015).

From an emotional perspective, certainty in the unconditional nature of the attachment figure to help provides feelings of security, stability, and self-esteem, thereby encourag-

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ing affection, love, and emotional communication (Bowlby, 1980). A warm, affectionate family environment provides security to children and helps them develop prosocial behaviors (Ferreira et al., 2016). According to previous studies, a warm environment seems to be most encouraged by mothers (Laible & Carlo, 2004; Tur-Porcar, Mestre, Samper, & Malonda, 2012). Children with secure attachment are more likely to develop positive expectations toward social interactions, thereby building their confidence to approach others and enhancing their social competence (Ferreira et al., 2016; Van Rosmalen, Van Ijzendoorn, & Bakermans-Kranenburg, 2014) by developing social interaction models (Bretherton & Munholland, 2008). These children also tend to be more accepted by peers, forge friendship linkages that are based on reciprocity, and become more socially competent (Schneider, Atkinson, & Tardif, 2001).

In contrast, experiences of environmental chaos early in life (an insecure family environment or discontinuity in caregivers) heighten the state of vulnerability (Cova Solar & Maganto Mateo, 2005). Such experiences are related to dysfunctional stress reactivity processes in young children, while also affecting neural circuitry, physiological regulation, and metabolic, cardiovascular, and immunological systems (Coley, Lynch, & Kull, 2015). These consequences in turn affect short- and long-term health and development (Blair et al., 2011; Meaney, 2010; Carlo et al., 2012). In addition, insensitive, unresponsive, and inconsistent parents encourage insecure attachment (Kerns, Schlegelmilch, Morgan, & Abraham, 2005).

Accordingly, authoritative and aggressive parenting is related to lower levels of prosocial behavior, especially in children with high levels of negative emotionality. High levels of impulsivity and a lack of control are predictors of low levels of prosociality. They are also related to externalizing problems, particularly when parents have poor responsive capabilities (Slagt, Semon Dubas, & van Aken, 2015).

### Coping strategies, aggression, and peer relations

Coping refers to the active efforts that people make to cope with external stressors (of social relations) and internal (emotional) stressors (Lazarus & Folkman, 1984). Strategies for coping with stressful situations are therefore essential components of social behavior. Children who fail to effectively regulate their emotions can experience anxiety or exhibit disruptive behaviors, which can interfere with social functioning. These children may be perceived as having poor social competence (Lopes, Salovey, Cote, & Beers, 2005).

Psychologists have shown that the development of emotional competence starts at an early age in the context of parent-child relations and takes shape during middle childhood as the relational scope broadens to include peers (Waters & Thompson, 2016). Thus, children who show secure attachment are more capable of self-regulating their emotions in early childhood (Thompson & Waters, 2010) and in middle childhood (Brumariu, 2015). In short, secure attachment is

related to more adaptive coping strategies in stressful situations (Abraham & Kerns, 2013; Groh et al., 2014). Nevertheless, relationships among peers provide a social context in which the emotional self-regulation abilities that the child learns with the family are generalized (Brumariu, 2015), although with peers the demands are broader, are not structured in the same hierarchical manner as they are in the family, and are more heterogeneous. Thus, coexisting with peers provides unique opportunities for emotion regulation and connection (Thompson & Waters, 2010). Emotion regulation and coping are closely linked (Brumariu, 2015; Zimmer-Gembeck et al., 2017).

Aggressive and prosocial behaviors also play an important role in coping with stressful situations. Prosocial behavior encourages positive relations with peers while inhibiting behaviors that relate to peer exclusion, victimization, or relational aggression (Seibert & Kerns, 2015).

Aggression creates a tense, unsettling atmosphere among those who engage in such behaviors. Aggression is generally defined as an action that aims to cause harm or pain to another individual or the physical environment (Anderson & Bushman, 2002). Aggression is a multidimensional construct that manifests itself in different forms and with different goals. Accordingly, aggression can be physical or verbal and can be reactive or proactive. Aggression can manifest itself directly, in physical or verbal form, or indirectly, in verbal or relational form. The reactive form of aggression is impulsive and seeks to harm others, whereas proactive aggression is instrumental and premeditated and seeks to harm others in a calculated and planned way (Andreu Rodríguez, Peña Fernández, & Penado Abilleira, 2012).

During this stage of development, it is important to consider aggressive behaviors, in any form, and prosocial behaviors. Toward the end of childhood and the onset of adolescence, a change occurs in the way people defend their viewpoints. During this change, the use of aggression tends to increase (Englert, Bertrams, & Dickhauser, 2011).

It may therefore be crucial for educators to be aware of the development of coping strategies to stimulate a good relational atmosphere and foster peaceful environments that encourage non-aggressive, prosocial interactions among peers to build calming environments where learning can flourish (Zsolnai, Kasik, & Braunitzer, 2015). In addition, proactive conflict resolution strategies also encourage learning about social responsibility (DeRosier & Marcus, 2005; Leadbeater, Thompson, & Sukhawathanakul, 2016).

Drawing on the previously discussed theory, this study addressed two goals. First, the study examined the relationships between prosocial behavior and personal variables (emotional instability, aggression, and strategies for coping with stressful situations), family variables (children's secure attachment and feelings of abandonment), and variables that pertain to the immediate social/peer environment (acceptance, rejection, expectation of acceptance, and expectation of rejection). Second, this study examined the predictor variables for prosocial behavior considering the same per-

sonal, family, and social/peer environment variables. The target variable was prosocial behavior. We tested the following hypotheses:

Hypothesis 1: Prosocial behavior is positively related to feelings of attachment to the mother and father and is negatively related to feelings of abandonment by the mother and father.

Hypothesis 2: Prosocial behavior is positively related to peer acceptance and functional coping strategies. It is also negatively related to peer rejection, dysfunctional coping strategies, emotional instability, and different forms of aggression (physical and verbal; reactive and proactive).

Hypothesis 3: Parent-child attachment is positively related to peer acceptance and functional coping and is negatively related to aggression, peer rejection, and dysfunctional coping.

Hypothesis 4: We expect to identify the predictor variables for prosocial behavior. These variables relate to the family context (attachment), the immediate social context (peer acceptance and rejection), externalizing and internalizing personal variables (aggression and emotional instability), and strategies for coping with stressful situations.

## Method

### Participants

The sample consisted of 1,447 children (50.4% boys and 49.6% girls) aged between 7 and 12 years ( $M = 9.27$  and  $SD = 1.36$ ). These children were enrolled in compulsory primary education. They were selected according to the classification of schools by the Government of Valencia under the Legal Order of July 4, 2001, which governs the remedial education program in the Region of Valencia. Participating schools expressed their availability and provided consent to participate in this study.

Most students were Spanish (79.5%), Latin American (12.1%), or Eastern European (4.1%). The remaining 4.3% of students were from Sub-Saharan Africa, Southeast Asia, North Africa, and other Western European countries such as France.

The distribution of the parents' education level was as follows: among fathers, 26.2% had university studies, 24.1% had secondary studies or equivalent, 37.7% had primary studies, and 12.0% had not completed their primary education; among mothers, 13.5% had university studies, 17.5% had secondary studies or equivalent, 34.1% had primary studies, and 34.9% had not completed their primary education.

### Evaluation instruments

The following evaluation instruments were employed to define the variables that were used in this study:

The *prosocial behavior scale (CP)*, originally devised by Caprara and Pastorelli (1993) and adapted to Spanish by Tur

(2003), had 10 items. The students responded by choosing one of three alternatives (*often*, *sometimes*, or *never*). The instrument evaluated the behavior of children in displaying altruism, trust, and conformity. Cronbach's alpha was .72. An example item was "I try to comfort whoever is sad."

The *physical and verbal aggression scale (AFV)*, originally devised by Caprara and Pastorelli (1993) and adapted to Spanish by Del Barrio, Moreno, and López (2001), had 15 items. The students responded by choosing one of three alternatives (*often*, *sometimes*, or *never*). The instrument evaluated the child's behavior that aims to harm others physically or verbally. The scale had two versions: one for students and another for teachers. Example items were "I fight" in the student version and "He or she fights" in the teacher version. The internal consistency, measured using Cronbach's alpha, was .89 (student version) and .95 (teacher version).

The *emotional instability scale (EI)*, originally devised by Caprara and Pastorelli (1993) and adapted to Spanish by Del Barrio et al. (2001), had 14 items. Students responded by choosing one of three alternatives (*often*, *sometimes*, or *never*). The instrument evaluated behavior that relates to a lack of control, a low capability to contain impulsivity, and emotionality in associated social situations. The scale had two versions: one for students and another for teachers. Example items were "I interrupt others when they are speaking" in the student version and "She or he interrupts others when they are speaking" in the teacher version. Cronbach's alpha was .81 for the student version and .93 for the teacher version.

Kerns's *questionnaire of perceived parental attachment to the mother and father* (Kerns, Klepac, & Cole, 1996; Richaud, Sacchi, & Moreno, 2001) evaluated the child's perception of attachment to a parent. The child responded separately to each item corresponding to the mother and/or father. The child selected the alternative that best described his or her feelings of attachment: secure, insecure, or abandonment. The questionnaire had 18 items. Each item had three response alternatives for each parent (*never*, *sometimes*, or *always*). An example item was "I feel that I can rely on my mom/on my dad when I need her/him." Three factors were obtained: feelings of security (attachment), feelings of insecurity, and feelings of abandonment. In this study, we considered only the scales that referred to feelings of attachment to the mother and father and abandonment by the mother and father. For feelings of security (attachment), Cronbach's alpha was .85 for the mother and .76 for the father. For feelings of abandonment, Cronbach's alpha was .64 for the mother and .64 for the father.

The Spanish adaptation of the *coping assessment questionnaire for children* (Richaud, 2006) evaluated the way in which children cope with situations and problems. The questionnaire had 27 items, each of which had three response alternatives (*always*, *sometimes*, or *never*). The factor analysis yielded two factors: one related to functional strategies and one related to dysfunctional strategies. The internal consistency, measured using Cronbach's alpha, was .71 for functional strategies and .74 for dysfunctional strategies.

The *Test Bull-S* for sociometric evaluation (Cerezo, 2012) assessed the internal structure of the classroom using the technique of *peer nomination*, which was defined based on the criterion of peer acceptance or rejection. We focused on the social position of each member of the group and the socio-affective structure of the group as a whole. The instrument had four items: accepted, rejected, expectation of being accepted, and expectation of being rejected. From these items, it was possible to derive the level of acceptance or rejection as well as the expectation of acceptance and the expectation of rejection. The child made up to three choices for each item. The items were as follows: "Who would you choose as a classmate?" "Who would you not choose as a classmate?" "Who do you think chose you as a classmate?" "Who do you think did not choose you as a classmate?" Cronbach's alpha was .62.

### Procedure

The method that was used to select the participants was random cluster sampling to ensure that different geographic regions in the provinces of Castellón and Valencia (Spain) were represented. The procedure for the evaluation process was approved by the Government of Valencia and the schools. Thus, from the chosen regions, the schools that provided their consent participated in the study. Similarly, we respected the international ethical guidelines that apply to this kind of study regarding the consent of parents or legal guardians, the voluntary nature of participation, and data confidentiality (Declaration of Helsinki). Accordingly, the final sample consisted of participants whose parents or legal guardians gave consent. We also disregarded data from children who failed to understand the items because of cognitive or language difficulties. The evaluation was conducted in groups during school hours in sessions that lasted between 30 and 40 minutes with interspersed breaks. The students received oral instructions for the completion of the questionnaires. Before the students recorded their responses, each item was read aloud. Throughout the entire process, the students were accompanied by two professionals as well as the teachers. The questionnaires were checked following data collection to ensure no items were left unanswered.

### Statistical analysis

SPSS 22.0 was used to calculate the descriptive statistics and perform the Pearson correlation analysis of the variables based on data from the standardized questionnaires. Next, hierarchical regression analysis was conducted to identify the predictor variables for prosocial behavior. Prosocial behavior was the target variable that we sought to explain using the explanatory variables of feelings of attachment to the mother and father and abandonment by the father and mother, functional and dysfunctional coping strategies, aggression, emotional instability, and peer acceptance or rejection. For the hierarchical regression analysis, the family variables were in-

cluded first. Next, the personal variables were included. Finally, the variables that related to the social/peer environment were included. First, we considered feelings of parental attachment or abandonment. Second, we considered emotional instability. Third, we considered aggression. Fourth, we considered functional and dysfunctional coping strategies. Finally, we considered acceptance, rejection, expectations of acceptance, and expectations of rejection by peers. Finally, we considered acceptance, rejection, expectations of acceptance, and expectations of rejection, based on the criterion of the development of coexistence. We also performed tests of multicollinearity using the variance inflation factor (VIF), observing acceptable values of less than 10 (Kleinbaum, Kupper, & Muller, 1988).

## Results

### Correlation analysis

We now describe the results of the analysis of the Pearson correlation between prosocial behavior, attachment to the mother and father, abandonment by the father and mother, emotional instability (as reported by students and teachers), physical and verbal aggression (as reported by students and teachers), proactive and reactive aggression, functional and dysfunctional coping, peer acceptance and rejection, and expectations of peer acceptance and rejection. All data were reported by students, except emotional instability and physical and verbal aggression, for which teachers also provided data (Table 1).

Prosocial behavior was positively related to functional coping and attachment to the mother and father. The strongest negative relationships were between prosocial behavior and physical and verbal aggression; between prosocial behavior and emotional instability (as reported by students and teachers, although with a stronger relationship in the case of data from students); and between prosocial behavior and proactive and reactive aggression. Prosocial behavior also had a weaker, but nonetheless significant, negative relationship with dysfunctional coping and abandonment by the mother and father. Finally, prosocial behavior had a weakly significant positive relationship with peer acceptance and expectations of peer acceptance and a weakly significant negative relationship with peer rejection and expectations of peer rejection.

All forms of aggression (physical and verbal; reactive and proactive) had strong positive relationships with emotional instability (although this relationship was stronger for the data reported by students). The different forms of aggression also had negative relationships with attachment to the mother and father and positive relationships with abandonment by the mother and father and dysfunctional coping. With functional coping, however, the relationships were weak and only appeared for physical and verbal aggression (based on data from students) and for proactive aggression.

Finally, functional coping strategies were positively related to attachment to the mother and, to a lesser degree, to attachment to the father and were negatively related to abandon-

ment by the mother. In contrast, dysfunctional coping had a weak positive relationship only with abandonment by the father and mother.

**Table 1.** Analysis of Pearson correlations between variables.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Prosocial behavior (S)	-																
2. Attachment (mother)	.291**	-															
3. Abandonment (mother)	-.113**	-.281**	-														
4. Attachment (father)	.248**	.562**	-.159**	-													
5. Abandonment (father)	-.083**	-.158**	.706**	-.289**	-												
6. Emotional instability (S)	-.345**	-.105**	.170**	-.115**	.188**	-											
7. Emotional instability (T)	-.279**	-.093*	.145**	-.105*	.137**	.738**	-										
8. Physical and verbal aggression (S)	-.416**	-.184**	.186**	-.135**	.164**	.721**	.547**	-									
9. Physical and verbal aggression (T)	-.224**	-.156**	.191**	-.139**	.162**	.413**	.537**	.407**	-								
10. Reactive aggression	-.289**	-.116**	.165**	-.101**	.111**	.584**	.293**	.629**	.281**	-							
11. Proactive aggression	-.314**	-.185**	.228**	-.105**	.140**	.493**	.271**	.586**	.294**	.626**	-						
12. Functional coping	.349**	.292**	-.073**	.237**	-.036	-.127**	-.130**	-.122**	-.045	-.046	-.131**	-					
13. Dysfunctional coping	-.116**	.017	.141**	-.001	.092**	.302**	.257**	.312**	.134**	.310**	.289**	.131**	-				
14. Peer acceptance	.076**	.079**	-.114**	.073**	-.103**	-.065*	-.132**	-.096**	-.170**	-.028	-.092**	.059*	-.011	-			
15. Peer rejection	-.166**	-.082**	.122**	-.080**	.089**	.164**	.182**	.173**	.239**	.160**	.232**	-.041	.077**	-.257**	-		
16. Expectations of peer acceptance	.087**	.074**	-.091**	.045	-.073**	-.081**	-.145**	-.076**	-.148**	.003	-.029	.068*	-.018	.672**	-.154**	1-	
17. Expectations of peer rejection	-.095**	-.036	.039	-.034	.031	.107**	.104**	.115**	.112**	.129**	.116**	-.005	.023	-.044	.649**	-.021	-
Mean	2.50	2.77	1.59	2.64	1.63	1.61	1.52	1.35	1.27	1.64	1.20	2.28	1.85	5.45	4.75	2.54	2.28
Standard deviation	0.31	0.30	0.44	0.43	0.44	0.36	0.43	0.33	0.39	0.35	0.28	0.40	0.36	4.23	4.92	0.97	1.15

\*\* $p < .01$ ; \*  $p < .05$  (S): student (T): teacher

The other relationships between variables were weak, albeit significant. Peer acceptance was positively related to attachment to the mother, whereas peer rejection was negatively related to attachment (with the mother and father) and was positively related to abandonment (by the mother and father). However, expectations of peer acceptance and expectations of peer rejection scarcely had relationships with the parental variables. Only expectations of peer acceptance had a significant negative relationship with abandonment (by the father and mother) and a significant positive relationship with attachment to the mother. Expectations of peer rejection were not significantly related to the parental variables. Similarly, peer acceptance and expectations of peer acceptance had negative relationships with emotional instability and aggression (physical and verbal; proactive), whereas peer rejection and expectations of peer rejection had positive relationships with all forms of aggression and with emotional instability (Table 1).

### Hierarchical regression to identify predictors of prosocial behavior

The goal of the hierarchical regression was to identify the predictor variables for children's prosocial behavior. Prosocial behavior was the criterion variable. The first block comprised feelings of attachment to the mother and father and abandonment by the mother and father. The second block

comprised emotional instability (as reported by students and teachers). The third block comprised physical and verbal aggression (as reported by students and teachers) and reactive and proactive aggression. The fourth block comprised functional and dysfunctional coping strategies. Finally, the fifth block comprised the environmental variables: peer acceptance and rejection and expectations of peer acceptance and rejection (Table 2).

The multicollinearity tests yielded satisfactory results. In all cases, the values for the VIF were between 1.396 and 2.926 (i.e., less than 3.0). VIF values that are less than 10 are acceptable (Kleinbaum et al., 1988).

The results confirmed that 46.6% of the variance of prosocial behavior in middle and late childhood was explained by the variables of attachment to the mother and abandonment by the mother, as well as emotional instability (as reported by students), physical and verbal aggression (as reported by students and teachers), functional coping, and expectations of popularity and peer rejection. Attachment to the father had a residual significance of less than 0.1. Attachment to the mother, functional coping, and expectations of peer acceptance were positively related to prosocial behavior, whereas abandonment by the mother, emotional instability, aggression, and expectations of peer rejection were negatively related to prosocial behavior. The analysis of each block of variables confirmed the influence of the family variables, which accounted for 23% of the variance.

**Table 2.** Hierarchical regression analysis of the role of perception of parenting attachment, emotional instability, aggression, coping strategies, and peer acceptance and rejection in prosocial behavior during middle and late childhood.

	Predictors	B	Standard error	$\beta$	t	p	$\Delta R^2$
Block 1: Feelings of attachment or abandonment	Attachment (mother)	.311	.069	.345	4.476	.000	.237
	Abandonment (mother)	-.114	.056	-.165	-2.018	.045	
	Attachment (father)	.092	.051	.141	1.804	.072	
	Abandonment (father)	.042	.044	.058	.948	.344	
Block 2: Emotional instability (IE)	Student	-.246	.051	-.296	-4.820	.000	.313
	Teacher	-.021	.043	-.029	-.475	.635	
Block 3: Aggression	Physical and verbal (S)	-.169	.075	-.192	-2.235	.026	.366
	Physical and verbal (I)	-.203	.068	-.250	-2.997	.003	
	Proactive	.104	.063	.114	1.650	.100	
	Reactive	-.020	.074	-.018	-.269	.788	
Block 4: Coping strategies	Functional	.209	.042	.265	4.953	.000	.424
	Dysfunctional	-.025	.048	-.028	-.509	.611	
Block 5: Interpersonal variables of the school environment	Popularity	-.006	.005	-.081	-1.251	.212	.466
	Rejection	-.001	.003	-.028	-.401	.689	
	Expectations of popularity	.009	.005	.108	1.749	.042	
	Expectations of rejection	-.014	.004	-.202	-3.278	.001	

Durbin/Watson = 1.972

 $F_{(14,1312)} = 13.37; p < .000; R^2 = .466$ 

Note: (S): student; (I): teacher.

## Discussion and conclusions

This study examined the relationships between prosocial behavior, aggression, family linkages, coping with stressful situations, and peer acceptance and rejection. This study's goal was also to identify the predictor variables for prosocial behavior. The results reflect the relationships between prosocial behavior and the aforementioned variables.

The first observation is that relationships between prosocial behavior and feelings of attachment to the mother and father were positive, albeit weak. Prosocial behavior also had a weak negative relationship with feelings of abandonment by the mother and father (Hypothesis 1). These associations, despite being weak, are consistent with those found in prior research, such as the study by Ferreira et al. (2016), showing that children with more secure attachment are better equipped to engage in prosocial behaviors and establish positive interactions with peers.

Second, prosocial behavior was positively linked to functional coping strategies in stressful situations, which are problem focused and require a certain degree of self-control. This result is consistent with Carlo et al.'s (2012) findings. Likewise, Brumariu (2015) found that fluid relations with peers tend to be more prosocial and provide a setting in which children can practice their skills of self-regulation and self-control.

Third, prosocial behavior had strong negative relationships with different forms of aggression (physical and verbal; reactive and proactive) and with emotional instability. Prosocial behavior also had a weak negative relationship with dysfunctional coping strategies and with feelings of peer rejection and expectations of peer rejection (Hypothesis 2). Seibert and Kerns (2015) found that prosocial behaviors help support positive relations with peers and inhibit behaviors related to peer exclusion.

Fourth, the analysis showed the positive relationship between feelings of attachment to the mother and father and functional coping strategies, which are problem focused. In addition, we observed negative relationships between feelings of attachment to the mother and father and all forms of aggression (Hypothesis 3) and between feelings of attachment to the mother and father and emotional instability. Likewise, we observed positive relationships between feelings of parental attachment and feelings of peer acceptance, and we observed negative relationships between feelings of parental attachment and peer rejection and between feelings of parental attachment and dysfunctional coping (Hypothesis 3).

Finally, the analysis confirmed that the positive predictor variables for prosocial behavior are attachment to the mother, functional coping strategies, and expectations of peer acceptance. Conversely, the factors that could inhibit the development of prosociality in children were observed to be feelings of abandonment by the mother, emotional instability, physical and verbal aggression, and expectations of peer rejection. These negative predictors could exacerbate children's vulnerability and obstruct fluid, positive relationships with the environment (Van Rosmalen et al., 2014). Furthermore, they could have major implications in terms of health and social adjustment (Carlo et al., 2012).

In terms of the importance of the mother in the development of prosocial behavior, the results seem to confirm the findings of other studies that have shown the differences between the mother and father in terms of parenting and in terms of children's perceptions of the involvement of both parents. Boys perceive greater involvement of mothers in parenting (Laible & Carlo, 2004; Tur-Porcar et al., 2012).

In general, the findings are consistent with attachment theory by indicating that the most sensitive and responsive (available) mothers provide security and contribute to their

children's well-being. The development of attachment is nonetheless complex, and it depends on other factors such as peer relations (Sroufe, 2005).

In summary, our findings are consistent with those of prior research on the role of attachment in the balanced development of children. This attachment strengthens the individual, providing security and emotional adjustment (Abraham & Kerns, 2013; Groh et al., 2014). Parental linkages that are based on secure attachment strengthen social competence (Ferreira et al., 2016) and offer models of social interaction that are gradually internalized (Bretherton & Munholland, 2008). Similarly, children's perceptions of attachment exert positive effects on the use of functional coping strategies, which are problem focused. The family can nonetheless contribute to the development of prosocial behaviors and functional coping strategies.

In contrast, a history of strict, non-responsive, and inconsistent care can increase children's feelings of abandonment, negatively affecting development and thereby fomenting externalizing problems and difficulties in the process of peer acceptance (Kerns et al., 1996). Furthermore, feelings of abandonment by parents are positively related to the use of dysfunctional coping strategies, which are emotion focused (Kerns et al., 1996).

### Limitations

This study has certain limitations. First, this was a cross-sectional study. The study's findings might have been more substantial if we had adopted a longitudinal approach. Such an approach would have allowed us to analyze variables over time, thereby yielding information regarding their evolution throughout adolescence. The second limitation refers to the

data source. We advocate broadening the scope of the evaluations to consider families so that we can compare and contrast our findings. For example, we could analyze data from students, teachers, and families. It has nonetheless been shown that data from students are generally reliable. They may actually be more reliable and have greater predictive validity than data from families (Gaylord, Kitzmann, & Coleman, 2003) because they are less subject to social desirability problems (Roa & Del Barrio, 2001).

### Future research implications

This study's findings may have major educational implications. In view of these findings, it would be advisable to enhance intervention programs in relation to prosocial behavior and functional coping strategies while educating families in strategies that help develop fluid and secure parent-child linkages. Prosocial behavior encourages positive child development (Lerner et al., 2009). This finding reflects DeRosier and Marcus's (2005) proposal of programs that aim to stimulate communication, cooperation, commitment, and coping strategies through role-play and modeling. Children who participated in this program showed improvements in social, emotional, and behavioral areas while suggesting ways to help establish good interactions with the environment. It is also advisable to adopt strategies for the resolution of social problems to ensure the success of programs that aim to encourage social skills (Abraham & Kerns, 2013).

**Acknowledgments:** R&D project PROMETEO (GVPRM-TEO / 2015/003); Networks of Excellence ISIC (CIU / 2013/001), Generalitat Valenciana; R&D project of the Ministry of Economics and Competitiveness (PSI2016-78242-R).

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(Article received: 27-10-2017; revised: 04-12-2016; accepted: 20-12-2017)