







Perceived maternal behaviour and children's goal orientation

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Abstract

Introduction: Students' goal orientation may be influenced by the behaviours that make up

parents' educational styles, among other factors. According to previous research, the dimen-

sions of maternal behaviour have more influence on adolescents than paternal dimensions.

Consequently, the aims of this study were: 1) to categorise maternal behaviours as perceived

by students in compulsory secondary education (ESO); and 2) to explore the impact of mater-

nal behaviours on their children's orientation towards academic goals.

Method: The participants in this study comprised 255 students in the 4th year of compulsory

secondary education (ESO), aged between 14 and 18 years old, from A Coruña, Spain. The

Spanish version of the Children's Report of Parental Behaviour Inventory (CRPBI) was used

to study perceived maternal behaviours, and the Academic Goals Questionnaire was used to

establish the participants' orientation towards academic goals.

Results: Factorial analysis of the responses to the CRPBI differentiated 7 dimensions of ma-

ternal behaviour. Maternal behaviours categorised as approval and support, and overprotec-

tiveness were positively related to children's orientation towards learning goals. The dimen-

sion of approval and support also contributed to the explanation of performance-approach

goals while the use of punishment contributed to the adoption of performance-avoidance

goals. Maternal behaviours identified as control/possessiveness and neglect/permissiveness

were positively related to performance goal orientation.

Discussion or Conclusion: The results of this study highlight the importance of perceived

maternal behaviours in the choice of learning-oriented and performance-approach goals. Be-

haviours such as approval and support should be promoted to encourage secondary education

students' orientation towards these types of academic goals.

Keywords: Parental style; perceived maternal behaviour; goal orientation; motivation.

Resumen

Introducción. La orientación a metas de los estudiantes puede estar influenciada, entre otros factores, por los comportamientos que componen los estilos educativos de los padres y las madres. De acuerdo con investigaciones previas, las dimensiones del comportamiento materno tendrían una influencia mayor en los adolescentes que las dimensiones de los padres. En consecuencia, los objetivos de este estudio fueron: 1) categorizar los comportamientos maternos percibidos por los/as estudiantes de Educación Secundaria Obligatoria (ESO); y 2) explorar la incidencia de los comportamientos maternos percibidos en la orientación a metas académicas de sus hijos/as.

Método. En esta investigación participaron 255 estudiantes de 4º de ESO con edades comprendidas entre los 14 y 18 años de la provincia de A Coruña, España. Se empleó la versión en castellano del *Children's Report of Parental Behavior Inventory* (CRPBI) para estudiar los comportamientos maternos percibidos y el *Cuestionario de Metas Académicas* para establecer la orientación a metas académicas de los participantes.

Resultados: El análisis factorial de las respuestas al CRPBI ha diferenciado 7 dimesiones del comportamiento maternal. Los comportamientos maternos categorizados como sobreprotección y evaluación positiva y apoyo se relacionarían positivamente con la orientación a metas de aprendizaje de los/as hijos/as. La dimensión de evaluación positiva y apoyo también contribuiría a la explicación de las metas de aproximación al rendimiento mientras que el empleo de castigos contribuiría a la adopción de metas de evitación del rendimiento. Los comportamientos maternos categorizados como control/posesividad y negligencia/permisividad se relacionarían positivamente con la orientación a metas de aproximación al rendimiento.

Discusión y conclusiones. Los resultados de este estudio ponen en evidencia la importancia de los comportamientos maternos percibidos en la elección de metas de orientación al aprendizaje y de aproximación al rendimiento. Deberían promoverse comportamientos como la evaluación positiva y el apoyo para favorecer que los estudiantes de ESO se orienten hacia este tipo de metas académicas.

Palabras Clave: Estilo parental; comportamiento materno percibido; orientación a metas; motivación.

Introduction

The current situation of high levels of drop-out in education is a concern, the origins of which continue to be studied. At the European level, Spain is among the three countries with the highest proportions of school drop-out (Ministerio de Educación y Formación Profesional, 2018). Although there have been significant improvements, Spanish students, with a 2018 drop-out rate of 17.9%, are still a long way from the European average of 10.6% (European Commission, 2019).

In response to the questions raised by these figures, one of the aspects that recent research has focused on is the relationship between students' motivation and performance (e.g. Meece, Anderman & Anderman, 2006; Usán & Salavera, 2018; Valle et al., 2009). In education, the concept of motivation has been widely studied (e.g. Alemany, Campoy, Ortiz & Benzaquén, 2015; Daumiller, Stupnisky & Janke, 2020; Núñez, Martín-Albo, Navarro & Suárez, 2010). There has been particular interest in students' goal orientation, as that is one of the determinants of school success, and therefore a potential protector against school dropout (Haugan, Frostad & Mjaavatn, 2019). Given how important it is for students to adopt learning and performance goals, it is useful to study which variables encourage that. The family context may play a key role in this regard, as children's perceptions of their parents' behaviours may contribute to the type of orientations they adopt in the school environment (Duchesne & Ratelle, 2010), and mothers' tend to have particular influence over their children's behaviour (de Bruyn, Deković & Meijnen, 2003).

We proposed a study aimed at determining the maternal behaviours perceived by secondary school students which influence the adoption of various types of goal orientation.

Goal orientation

Motivation is a fundamental concept, as it is involved in the realization of tasks, projects, and activities. Defined as the instigation and direction of behaviour (Elliot & Covington, 2001), motivation refers to the energy, direction, persistence, purpose, and intention of behaviour (Ryan & Deci, 2000). Various studies have indicated the existence of different types of motivation, noting that the type of motivation is more important than the level of motivation when predicting results such as academic performance or psychological wellbeing, and that motivation varies over time (Deci & Ryan, 2008).

An important current line of research in academic motivation begins from the theory of goal orientation (Navas, Soriano, Holgado & Jover, 2016; Sansone & Thoman, 2006). Goal orientation refers to students' intentions or reasons guiding their behaviour in academic situations (Pintrich & Schunk, 2006). There are many approaches to classifying academic goals (Elliot & McGregor, 2001; Miller & Speirs Neumeister, 2017), however, one common point they share is that they all differentiate between learning or mastery goals and performance goals. Mastery goals refer to goals aimed at the student performing a task for the satisfaction of mastering it, because they are interested, to apply their knowledge, or to improve their skills. Performance goals encourage students to commit to a task for the results, to demonstrate their own capabilities (Elliot, 1999).

There are two types or modes of regulation related to these two goals, called approach and avoidance (Elliot, 1999). Students oriented towards performance-approach goals are driven by demonstrating better results than their classmates, whereas those with performance-avoidance goals are motivated by avoiding failure (Linnenbrink & Pintrich, 2002). The 2x2 model of achievement goals (Elliot & McGregor, 2001) adds the avoidance aspect to mastery goals, which are adopted in order to avoid demonstrating incompetence in a task.

Although mastery goal orientation has been associated with highly adaptive academic behaviours —better persistence and commitment in challenging tasks, better use of deep cognitive strategies, greater academic self-efficacy, and the attribution of academic success to effort rather than ability (Pintrich, 2000; Urdan, 1997)—, research has been less consistent in associating academic beliefs and behaviours with performance goal orientation. This may be due, in part, to researchers not always making clear distinctions between approach and avoidance in performance goals.

In general, performance-approach goal orientation is suggested to be more adaptive than performance-avoidance orientation, particularly with respect to achievement. However, adopting performance-approach goal orientations has also been linked to poorly adaptive behavioural patterns, for example in terms of avoiding academic challenges, self-handicapping, and more negative emotions in the face of failure or difficulty (Harackiewicz, Barron, Pintrich, Elliot & Thrash, 2002; Midgley, Kaplan & Middleton, 2001).

Maternal behaviour

Given the importance of academic motivation, and in particular, students' goal orientations, it is interesting to examine the variables that may determine these orientations (Xu, Dai, Liu & Deng, 2018). Achievement goal theory itself, as a sociocognitive theory, maintains that both the school and family contexts contribute to the goal orientations that students adopt (Maehr, 2001). With regard to the influence of the family context, research has addressed how, for example, parental styles are related to children's learning, their expectations of success, and their academic results (González, Holbein & Quilter, 2002; Grolnick, Ryan & Deci, 1991). However, research has not yet looked deeply into the contribution of parents' attitudes and behaviours to children's goal orientations in the classroom (Chan & Chan, 2007; Kim, Schallert & Kim, 2010).

The family is recognised as the main agent of socialization, key to cognitive and emotional development, and parents continue to be very influential figures even during adolescence (Collins, Maccoby, Steinberg, Hetherington & Bornstein, 2000). Some studies have reported that parents' goal orientations can be good predictors of their children's goal orientations in secondary school (Friedel, Cortina, Turner & Midgley, 2007). In addition, results of other studies suggest that perceived educational styles can be a source of influence in performance goals Chan & Chan, 2007).

Educational styles have been described as the set of attitudes towards children that determine the emotional environment in which parental behaviour takes place (Darling & Steinberg, 1993). They can influence children's goal orientation because they are individual variables, and as such they develop under the influence of family factors (Chan & Chan, 2007). Parental educational styles can be approached from various perspectives (Steinberg & Silk, 2002). One is a typological perspective, in which classifications of styles have been proposed based on the combination and interrelationships of dimensions: permissive, negligent, democratic, and authoritarian (e.g., Baumrind, 1971; Maccoby & Martin, 1983; Cantero-García & Alonso-Tapia, 2017; Kosterelioglu, 2018). Another is the dimensional perspective where the relationship between each parental dimension —control, communication, and affect, among others— is studied in relation to adolescent adjustment (Steinberg & Silk, 2002).

The results of previous research suggest that children raised by authoritarian parents are less likely to engage in exploratory and challenging behaviour, whereas those with per-

missive parents are generally less persistent in learning tasks. In contrast, children raised by democratic parents are more exploratory, self-sufficient, and achievement-driven (Ginsburg & Bronstein, 1993; Grolnick & Ryan, 1989; Grolnick et al., 1991). Secondary-school students' achievement orientation is positively related to perceptions of authoritarian styles in both parents, whereas the perception of democratic parental styles is positively linked to the adoption of mastery goals (González et al., 2002). In this regard, external control (pressure, coercion, shaming) and punishment contingency have been linked to extrinsic motivation (Bronstein, Ginsburn & Herrera, 2005).

In relation to achievement goal theory, parents' adoption of performance goals, along with parental control, is linked to children's performance-approach and performance-avoidance goal orientation, as well as low adoption of mastery goals (Friedel et al., 2007; González & Wolters, 2006). Similarly, Duchesne and Ratelle (2010) indicated that parental control was principally linked to children's performance goal orientation. In contrast, parental support of autonomy is positively related to children's mastery goal orientation, performance goal orientation, and mastery-avoidance goal orientation (Xiang, Liu & Bai, 2017).

As Steinberg and Silk (2002) highlighted, it is essential to distinguish between *parental styles* and *parental practices*. The latter are behaviours aimed at a specific objective that can be employed in different emotional climates and via different styles. In this regard, parental practices, as specific behaviours, are related to the manner of interaction between parent and child (Morris, Silk, Steinberg, Myers & Robinson 2007).

Although relationships with both their mothers and fathers are extremely important in children's emotions and behaviours (Bosco, Renk, Dinger, Epstein & Phares, 2003; Updegraff, Delgado & Wheeler, 2008), differences have been described between mothers' and fathers' interactions with their children, for example, in variables such as communication and involvement (Bosco et al., 2003). On similar lines, there have also been reports of differences in the quality of interactions between children and their mothers and fathers (Kwon, Jeon, Lewsader & Elicker, 2012).

One of the instruments that addresses the relationships between children and parents by components that differentiate between mothers and fathers (Schaefer, 1965) is the Spanish adaptation of the *Children's Report of Parental Behaviour Inventory (CRPBI)*. It suggests a

series of factors that are more clearly defined and have greater explanatory power for mothers than for fathers (see Samper, Cortés, Mestre Escrivá, Nácher & Tur, 2006). Although the factor analyses on this questionnaire so far have shown inconsistencies in terms of the number of factors that make it up, the labels for the dimensions, and the reliability of some items (Valiente, Magaz, Chorot & Sandín. 2016), it seems that, except for *hostility*, the interaction of mothers and their children may be more explanatory than the interaction of fathers and their children (Rodríguez, Del Barrio & Carrasco, 2009). This agrees with results that demonstrate the differential influence of maternal compared to paternal dimensions (Jiménez-Iglesias & Moreno, 2015). Because of this, in our study, we will perform a factor analysis of the CRPBI in order to confirm its factor structure and clearly define the dimensions in relation to mothers.

It is important to bear in mind that parental practices are determined by cultural influences (Bornstein, 2013) and gender roles, among other variables (Rodriguez et al., 2009; Kwon et al., 2012). There are studies indicating greater presence of mothers in children's upbringing (Rodriguez et al., 2009), as well as a tendency for maternal influence to be greater in adolescents (Hair, Moore, Garrett, Ling & Cleveland, 2008). Because mothers tend to do more of the household tasks (Rodrigo, García, Márquez & Triana, 2005), they spend more time with their children and interact with them more. This would explain why mothers, for example, report more conflicts with their adolescent children than fathers (Bosco et al., 2003).

In addition, many studies have reported that adolescents perceive their mothers to be more accepting (Dwairy, 2010), closer, more affectionate, and more communicative, but also more controlling and more permissive (Rodriguez et al., 2009). A positive correlation has been found between maternal behaviour seen as permissive and performance goal orientation (González et al., 2002), with psychological control being another related factor (Xiang et al., 2017).

Mothers tend to know more about their adolescent children's day to day activities, which can have an impact on school performance (Updegraff et al., 2008). In addition, maternal expectations are particularly important for children's long-term educational plans (Lazarides, Viljaranta, Aunola, Pesu & Nurmi, 2016). Mothers' involvement in school activities and activities that promote learning at home are positively related with children's feelings of competence (Jacobs & Bleeker, 2004).

Objectives and hypotheses

The aim of this study was to see how mothers' attitudes and behaviours may be linked to their children's academic goal orientation. In order to be able to examine this relationship, given the inconsistencies found in the literature review, firstly we categorized the maternal behaviours perceived by secondary-school students. This allowed us to measure the effects of the different maternal behaviours on the academic goal orientation of students in the final year of compulsory secondary education. In this regard, given previous research, we explored the hypothesis that adolescents who felt approved of, supported, and stimulated to take decisions would adopt both mastery-approach and performance-approach goals (see e.g., Ginsburg & Bronstein, 1993; González et al., 2002; Grolnick & Ryan, 1989 o Grolnick et al., 1991). We also expected that mothers perceived as more hostile or inflexible, and those who used punishment or exercised greater control over their children, as well as more permissive mothers, would contribute to the adoption of more performance related goals (see e.g., Bronstein et al., 2005; González et al., 2002; Xiang et al., 2017).

The results of this study may have significant implications in the educational field. Establishing the effect in categorical terms of specific maternal behaviours will allow action and intervention plans to be established with mothers to encourage educational styles and interaction dynamics that benefit their children's development and learning.

Method

Participants

A total of 255 students participated in this study (120 girls and 135 boys), all of whom were in the 4^{th} year of compulsory secondary education [Educación Secundaria Obligatoria: ESO in Spanish] in four state schools in urban and suburban areas of the province of A Coruña, Spain. The students were from families with average socioeconomic levels, and were aged between 14 and 18 years old ($M_{age} = 15.63$; SD = .77), making up a probabilistic sample clustered by convenience.

Instruments

Perceived maternal behaviour. In this study, we used the Spanish adaptation of the Children's Report of Parental Behaviour Inventory-CRPBI by Schaefer (1965), originally

produced by Samper et al. (2006) and revised in more recent studies (Valiente et al., 2016). The instrument was designed with the aim of evaluating children's perceptions of the parenting styles and relationships with mothers and fathers. It was based on a three-dimension model of three pairs of orthogonal factors—Acceptance v Rejection, Psychological autonomy v Psychological control, and Strict control v Lax control—the original instrument from Schaefer (1965) consisted of 52 items evaluating children's perceptions of their relationships with and behaviour of their parents.

The items pose various situations of family life and education to which the subjects respond on a Likert-type scale with 5 response options, from 1 (never) to 5 (always). In line with previous analyses which produced six factors for 29 items with 45.53% of variance explained (Valiente et al., 2016) and eight factors for 20 items with 42% of the variance explained (Samper et al., 2006), our exploratory factor analysis demonstrated a structure with seven factors for 28 items from the original scale (see Table 1). It explained 63.8% of the overall variance related to mothers, and the results of Bartlett's test for sphericity (χ 2 = 2217.84; df = 368; p < .000) and the measure of sampling adequacy (KMO: .849) confirmed the suitability of the proposed factor structure.

As Table 1 shows, this factor analysis with the sample gave a first factor (α = .87; 8 items) we labelled F1_Approval and support. This factor includes items that Samper et al., (2006) considered approval and items considered to be support and stimulation in decision-making (Samper, et al., 2006). We also defined a second factor labelled F2_Overprotectiveness (α = .81; 5 items) which includes various items that have been characterized in other studies as overprotection (e.g., Samper et al., 2006; Valiente et al., 2016).

The third factor, made up of four items, labelled F3_Neglect/Permissiveness (α = .86; 4 items) contains two items previously characterized as measures of permissiveness and two characterized as measures of neglect (e.g., Valiente et al., 2016). The fourth factor, as Table 1 shows, includes items that are related to attempts to control the child [F4_Control/ Possessiveness (α = .62; 3 items)].

The fifth factor, F5_Stimulation of decision-making ($\alpha = .79$; 4 items) brings together four items that Samper et al., (2006) considered to be within the broader factor of support and stimulation of decision-making. The final two factors differentiate between items related to

hostility-inflexibility (see Samper et al., 2006), one referring to the use of punishment [F6_ Punishment ($\alpha = .74$; 2 items)], and the other to inflexibility in complying with rules [F7_Inflexibility ($\alpha = .64$; 2 items)] (see Table 1).

Table 1. Descriptive statistics and factorial loading of items related to perceived maternal behaviours

Factors	Order of appearance. Item	Factor load- ing	M	SD	Asim.	kurtos.
F1_Approval and support	50. She enjoys working with me at home or in the garden	.797	3.07	1.27	0.02	-0.96
	3. She praises me	.754	3.11	1.28	-0.05	-0.96
	41. She tells me how well I do things	.728	3.16	1.29	-0.17	-0.97
	51. She likes how I behave at home	.668	3.16	1.16	-0.10	-0.64
	45. She likes to talk to me about news	.637	2.96	1.33	0.08	-1.05
	20.She shares activities with me	.596	3.13	1.28	0.02	-1.00
	48. She likes to talk to me	.561	3.70	1.24	-0.55	-0.67
	14. She likes to be at home with me more than going out with friends	.501	3.30	1.27	-0.18	-0.95
F2_Overprotectiveness	19. She is concerned about my health	.691	4.44	0.99	-1.75	2.30
	17. She smiles at me	.690	3.96	1.24	-0.99	-0.07
	8. She is concerned about me when I leave the house	.679	4.21	1.08	-1.18	0.50
	10. She talks to me	.675	4.11	1.15	-1.05	0.02
	26. She lets me choose my own friends	.579	4.31	1.11	-1.49	1.17
F3_Neglect/permissiveness	47. She excuses my bad behaviour	.777	1.74	1.14	1.48	1.21
	46. She forgets to give me things I need	.765	1.66	1.01	1.57	1.95
	42. She lets me avoid doing work I have to do	.686	1.79	1.09	1.26	0.71
	44. She acts as though I am a nuisance	.609	1.56	1.01	1.85	2.67
F4_Control/ Possessiveness	33. She worries that I spend most of my time out of the house	.747	2.88	1.36	0.14	-1.18
	36. She would like me to spend most of my free time with her	.709	2.83	1.16	0.17	-0.60
	29. She asks me about what happens when I am out of the house	.518	3.56	1.17	-0.38	-0.69

Table 1 (continued). Descriptive statistics and factorial loading of items related to perceived maternal behaviours

Factors	Order of appearance. Item	Factor load- ing	M	SD	Asim.	kurtos.
F5_Stimulation of decision-making	39. She lets me tell her if I think my ideas are better than hers	.665	3.47	1.34	-0.30	-1.13
	43. She lets me help decide how to do things when we are working	.592	3.19	1.17	-0.07	-0.70
	37. She lets me choose whenever possible	.585	3.74	1.20	-0.60	-0.57
	34. She asks me what I think about how we should do things	.582	3.02	1.38	-0.06	-1.17
F6_Punishment	5. She punishes me in some way when I am bad	.896	2.72	1.45	0.27	-1.25
	16. If I don't behave well at school, she punishes me when I get home	.816	2.47	1.42	0.52	-1.05
F7_Inflexibility	31. She is annoyed when I don't follow her advice	.736	3.04	1.20	-0.08	-0.71
	38. She lets me know when I break a rule	.665	3.70	1.24	-0.53	-0.74

Goal orientation. To evaluate goal orientations, we used the Academic Goal Questionnaire (Skaalvik, 1997). Exploratory factor analysis (Principal components method with Varimax rotation) replicated the original four-factor structure, explaining 61.5% of the total variance. The results of Bartlett's test for sphericity ($\chi 2 = 2286.795$; df = 210; p < 0.00) and the measure of sampling adequacy (KMO: .734) confirmed the suitability of the analysis. This instrument evaluates four types of goal: learning (or task approach; $\alpha = 0.61$; 6 items), performance-approach (or improvement of oneself; $\alpha = 0.86$; 5 items), performance-avoidance (or defence of oneself; $\alpha = 0.90$; 6 items), and academic task avoidance ($\alpha = 0.74$; 4 items). The instrument consists of Likert-type items, with five response options ranging from 1 (never) to 5 (always).

Procedure

We first contacted various schools in order to find participants who met our inclusion criteria (students in the 4th year of ESO). Once that was done, we had meetings with the school authorities to request their participation in the study, during which we informed them of the anonymity of the participants and the data protection and confidentiality measures to be

taken. Once they had agreed to take part, we agreed times which would cause least disruption in class to carry out the data collection. In accordance with current data protection laws (Art. 7.1 of Organic Law 3/2018, 5th December) it was not necessary to get authorization from legal guardians as the consent of children over 14 years of age was sufficient.

Members of the research group were tasked with data collection, which took place during class time. Before presenting the questionnaires, the students were reminded that their participation was voluntary and the data was confidential, and of the importance of answering the questions honestly. In addition, the lead researcher read out the instructions that were printed on the first page of the questionnaires. The average time for the application of the questionnaire was 30 minutes per group.

The data on the variables in this study were collected in accordance with the ethical standards established by the Committee of Ethics in Research and Teaching of the University of A Coruña and by the Declaration of Helsinki. Students were assured of the complete confidentiality of the data, and their participation was entirely voluntary, they were able to leave the study at any time.

Data analysis

This research was a transversal study via questionnaire, using a selective or correlational design.

We used SPSS version 24.0 to perform the data analysis. Once we confirmed that the variables met the required criteria for normality using the corresponding descriptive statistics, we carried out a study of correlation between the variables. In addition, we performed four multiple stepwise regression analyses to assess the effects of maternal educational style on children's goal orientation. To categorize the perceived maternal behaviours, we performed an exploratory factor analysis using the method of principal components with varimax rotation. In addition, to determine the relationship and incidence of different maternal behaviours on secondary-school students' goal orientations, we performed a correlation analysis between the variables and the four regression analyses noted above.

Results

The factor analysis for the sample on the 52 items originally proposed by Shaefer (1965) suggested reducing it to 28 items and a seven-factor structure with 63.8% of the variance explained, rather than the six-factor, 29-item structure proposed by Valiente et al., (2016) or the eight-factor, 20-item structure from Samper et al., (2006) which both gave lower percentages of explained variance. The structure we found allowed the differentiation of a factor labelled *approval and support* which combined items related to approval and items related to support and stimulation of decision-making decisions (see, Samper et al., 2006), consistent with the communicative style defined in the study by Valiente et al. (2016) (see Table 1).

The analysis also identified a measure of *overprotectveness* similar to that proposed in previous studies and it suggested combining the items characterized previously as *permissiveness* and *neglect* into a single dimension (see Samper et al., 2006; Valiente et al., 2016). It also indicated the differentiation of the hostility-inflexibility measure from Samper et al., (2006) into *punishment* and *inflexibility* as well as the creation of a measure combining items related to *control* and *possessiveness* of children, which were considered control measures also linked to overprotective styles (see Table 1).

Our examination of correlations (see Table 2) showed that *mastery goal* orientation continued to demonstrate positive correlations with *approval and support*, as well as *overprotectiveness* (r = .25 and r = .28, respectively), and negative correlations with maternal *neglect/permissiveness* (r = -.20). *Performance-approach goals* also demonstrated positive correlations with *approval and support* from the child's mother (r = .26), as well as with maternal *neglect/permissiveness* and maternal *control* (r = .21 and r = .25, respectively). *Approval and support* may also limit *task-avoidance* in the academic environment (r = -.15).

Table 2. Matrix of correlations between perceived maternal behaviour factor and goal orientations

	1	2	3	4	5	6	7	8	9	10	11
1. Approval and support	1										
2. Overprotectiveness	.61**	1									
3 Neglect/Permissiveness	09	37**	1								
4. Control/Possessiveness	.32**	.23**	.14*	1							
5. Stimulation of decision-making	.67**	.50**	07	.30**	1						
6. Punishment	.00	05	.15*	.22**	.02	1					
7. Inflexibility	.21**	.27**	.02	.40**	.04*	.28**	1				
8. P_Av_G	.05	.10	02	.00	10	.32**	.01	1			
9. M_G	.25**	.28**	20**	.02	.02	02	.13	.26**	1		
10. P_App_G	.26**	10	.21**	.25**	02	.10	04	.38**	.21**	1	
11. T_A_G	15*	.20**	.13	.07	.02	.01	.10	01	00	.00	1

Note: P_Av_G : performance-avoidance goals, M_G : mastery/learning goals, P_App_G : performance-approach goals, T_AG : task-avoidance goals.

Although the mothers' use of *punishment* can be associated with the adoption of *performance-avoidance goals* (r = .32), maternal *overprotectiveness* may be linked to *task-avoidance* in the classroom (r = .20).

In order to look more deeply into these relationships, we performed four regression analyses using *mastery goals*, *performance-approach goals*, *performance-avoidance goals*, and *task avoidance* as dependent variables, and the seven variables identified characterizing maternal behaviour as predictor variables in each of the equations. In addition to assessing the strength of the association between the variables, this also produced information about which of the predictor variables were significantly related to the goals, the total variance explained by the variables in the model, and the level of variance of the motivational variables explained by each of the maternal behaviours in the equation.

Perceived maternal behaviour and children's mastery goal orientation

The predictor variables in the explanation of *mastery goal* orientation in the regression analysis were perceived maternal *overprotectiveness*, *approval and support*, *neglect/permissiveness*, and *inflexibility* which together explained a notable proportion of the variance (see Table 3).

Mothers' overprotectiveness and approval and support were the best predictors of mastery goals in their children, followed by neglect/permissiveness and inflexibility (see Table 3).

Table 3. Multiple correlation coefficients and variances for the explanatory model of mastery goal orientation

MODEL	R	R^2	$Adjusted R^2$	Change in R^2
M_G .				
Model 1	.28	.08	.07	.08
Model 2	.38	.14	.13	.06
Model 3	.43	.19	.17	.04
Model 4	.45	.21	.19	.02

Model 2: Overprotectiveness; Approval and support

Model 3: Overprotectiveness; Approval and support; Neglect/permissiveness

Model 4: Overprotectiveness; Approval and support; Neglect/permissiveness; Inflexibility

Note: M_G: Mastery or learning goals

In the last of the models specified, perceived maternal *overprotectiveness* and *approval and support* from the mother would positively contribute to the adoption of *mastery goals* ($\beta = .285$; t = 4.180; p < .001 and $\beta = .259$; t = 3.804 p < .001), whereas *negligence/permissiveness* would negatively contribute $\beta = -.212$; t = -3.118, p < .01). Although less important, the perception of maternal *inflexibility* would also contribute to the adoption of *mastery goals* ($\beta = .135$; t = 1.985 p < .05).

Perceived maternal behaviour and children's performance goal orientation

The model from the final step in exploring the impact of mothers' relationships on their children's' *performance-approach goal* orientation indicated that maternal *approval and support*, *control/possessiveness*, and *neglect/permissiveness* contributed to the explanation, albeit in different proportions (see Table 4).

Table 4. Multiple correlation coefficients and variance for explanatory models of performance-approach and -avoidance goals.

MODEL		R	R^2	$AdjustedR^2$	Change in R ²
P_App_G .					
	Model 1	.26	.07	.06	.07
	Model 2	.37	.13	.12	.06
	Model 3	.42	.17	.16	.04
	Model 1: Approval and sup Model 2: Approval and sup Model 3: Approval and sup	port; Control/			/permissiveness
P_Av_G					
		Mode	el 1		
		.32	.10	.10	.10
	Model 1: Punishment				

Note: P_App_G : performance-approach goals, P_Av_G : performance-avoidance goals

Both maternal *control/possessiveness* and *neglect/permissiveness* demonstrated a positive impact on the adoption of performance-approach goals (β = .253; t = 3.644, p < .001 and β = .200; t = 2.883; p < .01, respectively) as did maternal *approval and support* (β = .263; t = 3.796, p < .001).

The use of *punishment* by mothers was the only predictor included in the regression for the adoption of *performance-avoidance goals* (see Table 4). Maternal use of *punishment* positively predicted the adoption of *performance-avoidance goals* (β = .320; t = 4.462, p < .001).

Perceived maternal behaviour and children's task avoidance

The model corresponding to the final step of the analysis indicated that the tendency towards *task avoidance* would be positively explained by maternal *Overprotectiveness* (β = .204; t = 2.770, p < .01) and negatively explained by *approval and support* (β = -.146; t = -1.989, p < .05) to differing degrees (see Table 5).

Table 5. Multiple correlation coefficients and variance for explanatory model of avoidance of work goal orientation

MODEL		R	R^2	$Adjusted R^2$	Change in R^2
T_A_G .					
	Model 1	.20	.04	.04	.04
	Model 2	.25	.06	.05	.02
	Model 1: C Model 2: C				ıl and support

Note: T_A_G: task avoidance goals

The contribution of both variables to the explanation of the criterion was around 5% (see Table 5).

Discussion and Conclusions

With this study, we aimed to explore how mothers' attitudes and behaviours were linked to their children's goal orientation. Exploratory factor analysis of the *CPRBI* confirmed an appropriate factorial structure for 28 items with greater explained variance than that reported by previous studies (see Samper et al., 2006; Valiente et al., 2016).

As previous research had led us to expect (Ginsburg & Bronstein, 1993; González et al., 2002; Grolnick & Ryan, 1989; Grolnick et al., 1991), recognition of children's worth and support for them, reinforcing their own abilities, and giving them criteria to self-evaluate their performance can contribute to the adoption of mastery goals along with performance-approach goals. Democratic households encourage exploratory behaviours, trust in oneself, and academic motivation (González et al., 2002; González & Wolters, 2006). In this context, maternal behaviours which are neglectful or permissive —excusing bad behaviour, allowing obligations to be avoided, and forgetting to provide necessities— seem to contribute to the adoption of performance-approach goals and limit the adoption of mastery or learning goals. This differentiation reinforces the idea that insufficient parental guidance limits children's academic learning (Xiang et al., 2017).

We also expected that mothers perceived as more hostile, less flexible, who used punishment, or who exercised greater control over their children, as well as mothers who were permissive would contribute to the adoption of performance related goals (Bronstein et al., 2005; González et al., 2002; Xiang et al., 2017). In this regard, our study showed that maternal control is linked to children adopting performance-approach goals (Duchesne & Ratelle 2010; Friedel et al., 2007; González & Wolters 2006). It is possible that in more controlling households, where there is significant concern and interest about what happens outside the home, children are driven towards seeking recognition and approval outside the home. A punitive climate and greater control may push students towards depending on the approval of authority figures when doing their academic work (González et al., 2002).

The use of punishment by mothers seems to specifically predict the adoption of performance-avoidance goals. The probability of disapproval and punishment, by decreasing enthusiasm and increasing anxiety (Bronstein et al., 2005), may contribute to commitment to academic activities out of fear of failure. Our results reinforce the link between more authoritarian educational styles and limiting the search for challenge.

Finally, considering our results, it is worth raising the possibility that maternal overprotectiveness, as reported by children, contributes to avoidance of work when the perceptions of maternal assessments of worth and support are low. Although it may contribute to the adoption of mastery goals when children feel valued and supported by their mothers. In fact, in the explanation of mastery goal orientation, positive predictors with notable variance explained include overprotectiveness, approval and support, and even inflexibility, whereas neglect and permissiveness limit the adoption of these types of achievement goals. These results are in line with the positive link between maternal authority and mastery orientations (González et al., 2002). When, instead of strict obedience being the focus, rules are explained in a caring context, and autonomy and decision-making are encouraged to some extent, this can strengthen children's commitment to improving their skills and academic mastery. Taken together, these findings can be related to findings from other studies, in which democratic (authoritative) educational styles are predictors of mastery or learning goal orientation (Chan & Chan, 2007).

Our study contributes to research into the effects of maternal behaviours on academic goal orientation. In addition, it offers a review of the factors proposed by the Spanish adaptations of the *Children's Report of Parental Behaviour Inventory-CRPBI*. However, it does have some limitations that may be used as future lines of research. One of the main

limitations is that the study was based solely on questionnaires giving quantitative information reported by the participants, giving rise to the subjectivity inherent in self-reporting. In addition, it would be advisable to broaden the study to other years in compulsory secondary education and to other parts of the country, including longitudinal studies that could examine how the relationships between perceived maternal behaviours and students' goal orientation changes over time. Another aspect affecting this study are the variables that were not considered, such as academic performance, gender, and nationality, which might provide important information. In terms of the factor analysis we performed, it should be remembered that the sample in this study was significantly smaller than in other studies. Another future line of research might focus on the study of fathers' perceived behaviours, and the relationship to children's goal orientation, which would also make it possible to compare between mothers and fathers.

Finally, the results of our study may have implications for the education field. Understanding maternal behaviours and their effects on goal orientation in the academic arena would allow more effective, specific interventions, encouraging mothers' behaviours that promote their children's adoption of mastery goals.

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