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The reference IBM Corp, 2013 has been added to the Data analysis subsection.
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Perceived parental involvement and student engagement with homework in secondary school: The mediating role of self-handicapping

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Abstract

Research in the field of homework has confirmed the significant association between students' perceptions of their parents' involvement and their motivation and engagement with these tasks. In this study we analyzed the possible mediating role of self-handicapping strategies in the relationship between perceptions of parental support (content-oriented and autonomy-oriented support) when doing homework and the students' behavioral engagement (time spent, effort made, amount of homework done, level of procrastination). The participants were 643 students in compulsory secondary education (between 7th and 10th grade). The results showed that the lower the perceptions of support from parents when doing homework, the greater the students' use of self-handicapping strategies and the worse their behavioral engagement (less effort, less amount of homework done, more procrastination) and vice versa. These findings seem to indicate that self-handicapping is a motivational strategy that would partially explain students' poor behavioral engagement with homework in the absence of parental support.

Keywords

Homework

Perceived parental support

Self-handicapping

Personal worth

Student behavioral engagement

Introduction

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Homework is an important academic tool for encouraging students' self-regulatory competencies in the learning process (Bembenutty, 2011; Ramdass & Zimmerman, 2011). Despite this tacit aim of encouraging students to work autonomously, in recent years, various studies have indicated the important role played by parents when it comes to homework, such that parental involvement significantly influences students' motivational and behavioral engagement with homework (Froiland, 2020; Moé et al., 2018).

Although parental involvement is generally lower in secondary school than in primary (Froiland & Davison, 2014; Núñez et al., 2015), parents' roles in students' academic engagement continues to be key (Hill & Tyson, 2009). However, when it comes to examine the suitability of parental participation in their children's homework, some authors have suggested focusing not so much on the amount of involvement, but rather on how it is done (Dumont et al., 2012).

In this regard, research has usually differentiated between parental involvement in the form of support and involvement in the form of control (Núñez et al., 2015; Ryan & Deci, 2017). Support involvement can be defined as the parents' intention to help their children, giving them emotional support and encouraging their autonomy, their perceptions of competence and their own volition, although they may also provide instrumental help with homework if needed. Control involvement is characterized by exerting pressure and monitoring children to ensure that they complete their homework. Parents engaged in this kind of involvement have little tolerance, and are punitive if their children have problems doing their homework or give up too easily (Froiland, 2014).

There is evidence that when parental involvement is based on control and demand rather than on support, it has negative effects on intrinsic motivation and student self-confidence when doing homework, making it more likely that they will experience anxiety and depressive symptoms (Kenney-Benson & Pomerantz, 2005) and as a consequence they may exhibit academic procrastination behaviors (Pychyl et al., 2002) as well as reduced performance (Prakhov et al., 2020). This negative relationship between parental control and their children's motivational and behavioral engagement with homework would be particularly marked in adolescence, a stage characterized by children's strong desire for independence and the development of their own identity (Froiland, 2020). In contrast, parental involvement in homework that is based on support, especially when the student is aware of that support (Thomas et al., 2020), is related to better student attitudinal

and behavioral engagement, greater intrinsic motivation, and more positive emotions towards academic work, as well as better performance (Dumont et al., 2012; Froiland, 2018; Gonida & Cortina, 2014; Jungert et al., 2020; Thomas et al., 2020).

Hence, in secondary education, parents continue to play an important role in their children's motivational and behavioral engagement with homework. Given that, it is possible that the perception of parental involvement, whether support or control, would influence students' motivations towards homework which would in turn influence their behavioral engagement. In other words, the relationship between perceived parental involvement and student behavior towards homework would be mediated, at least partially, by the students' own motivations towards academic tasks, as some previous studies have suggested (Xu, 2010).

From the perspective of achievement motivation theories (Wigfield & Cambria, 2010), some students face academic tasks with a clear orientation towards success (Pintrich & Schunk, 2006), exhibiting high enthusiasm, engagement, effort, and persistence in the face of difficulties. Other students, in contrast, doubt their own abilities and experience high levels of fear of failure, with the consideration that this failure would be palpable evidence of low self-worth (self-worth theory; Covington, 1992). Both theories (achievement motivation and self-worth) therefore provide a rational explanatory framework regarding why some students prioritize protecting feelings of competence above engagement with academic tasks, and thus adopt complex strategies such as self-handicapping (De Castella et al., 2013). Self-handicapping is a strategy by which the student sabotages their own chances of success by creating some kind of obstacle —e.g., doing many activities simultaneously, reducing effort, spending little time on tasks (Arkin & Baumgardner, 1985)— that hinders achievement (Jones & Berglas, 1978). This apparently paradoxical behavior allows students to keep their self-worth intact, because in the eyes of others, the cause of the poor performance would be the handicap.

The achievement motivation theories (e.g., achievement goal theory; Elliot, 1999) hold that people differ in the reasons why they engage in achievement contexts (e.g., academic). These differences are largely determined by one's implicit theory of intelligence (Haimovitz & Dweck, 2017), in such a way that intelligence can be understood as an innate and unchangeable attribute (fixed implicit theory) or as a malleable and improvable characteristic (incremental implicit theory). Those students who doubt their own intelligence and consider that it cannot be improved,

would find in self-handicapping a tempting way to protect their competence image and self-worth (Yu & McLellan, 2020). In a complementary way, the self-worth theory (Covington, 1992) states that all human beings need to feel valuable and accepted, and feelings of self-worth are fundamentally based on perceived competence and perceived achievement. For Covington (1992), in a highly demanding context such as academia, effort becomes a double-edged sword since, on the one hand, it is highly valued by teachers. However, it is also a potential threat, as a combination of high effort and failure can be judged by others as evidence of lack of personal competence (Marsh et al., 2016). Under these circumstances, self-handicapping would become an excellent alternative to protect the student's feelings of self-worth.

Self-handicapping can be effective in the short term, as it allows the student to preserve their self-worth in their own eyes and in their social setting (Török et al., 2018). However, using it repeatedly usually leads to notable academic harm—e.g., poor performance, dropping out— (Akar et al., 2018; Clarke & MacCann, 2016; Schwinger et al., 2014), which ends up undermining the students' feelings of self-worth (Zuckerman & Tsai, 2005).

Parental Involvement and Self-Handicapping

Parental influence on academic motivational orientation in adolescents has been widely studied (e.g., Ricard & Pelletier, 2016; Song et al., 2015). In this regard, the quality of the interactions between parents and children seems to significantly influence adolescents' emotional and behavioral functioning (Lyddon et al., 1993), as Steinberg (2001) put it, “it doesn't only matter what the parents do, but the emotional context in which they do it” (p. 10).

Although to date we lack studies which have specifically analyzed the relationship between parental involvement with homework and self-handicapping, there is evidence that students develop better intrinsic motivation towards homework when they feel that their parents' love does not depend on their academic achievement (Kowalski & Froiland, 2020). In contrast, parental involvement styles based on rigid control, which are predominantly critical and where emotional support is absent or inconsistent, are related to lower levels of self-confidence and self-worth in the children (Olivari et al., 2018; Pinquart & Gerke, 2019; Pychyl et al., 2002), and are consequently one of the factors that explain the beginning and maintenance of failure-avoidance behaviors, such as self-handicapping (Jensen & Deemer, 2020; Thompson, 2004; Want & Kleitman, 2006). In this regard, pioneering authors in the field such as Jones and Berglas (1978) suggested that children's lack of certainty

about unconditional love from their parents is part of the aetiology of self-handicapping, as children would grow up with uncertainty about whether their parents would continue to love and accept them if they failed.

The few studies with secondary-school students seem to support this relationship, as greater use of self-handicapping has been found in students whose parents give them little emotional support (Boon, 2007; Greaven et al., 2000). In addition, Reis and Peixoto (2013) observed a greater tendency towards academic self-handicapping in adolescents whose parents' communicative styles were characterized as based on demands and criticism. In contrast, more democratic styles, in which parents set limits and consistent guidelines for their children, together with affective support and encouragement of independence, would be a protective factor against self-handicapping (Boon, 2007).

Self-Handicapping and Student Behavioral Engagement

In the same way as with parental involvement in homework, as far as we are aware, there are no studies which have specifically analyzed the relationship between the use of self-handicapping and student behavioral engagement with homework. However, in accordance with recent lines of study (e.g., Regueiro et al., 2017) confirming the mediating role that affective-motivational variables play in student homework engagement, it seems plausible to expect self-handicapping to be related to lower levels of student behavioral engagement with homework. In fact, the use of self-handicapping strategies is related to the adoption of bad academic habits (Zuckerman et al., 1998), specifically in less time spent on study (Murray & Warden, 1992), a greater tendency to procrastinate (Barutçu Yıldırım & Demir, 2020; Török et al., 2018), poor use of cognitive and metacognitive resource management strategies (i.e., effort, choosing a suitable place to study), and in short, poor self-regulation of the learning process (Cano et al., 2018; Jiang & Kleitmen, 2015).

The Present Study

Much of the extant literature on homework has focused on homework behaviors such as homework time, homework effort, and homework completion (e.g., Fan et al., 2017; Núñez et al., 2015; Trautwein et al., 2006; Xu, 2011) and its relationship with different forms of parental involvement (e.g., Dumont et al., 2012; Froiland, 2018; Gonida & Cortina, 2014; Núñez et al., 2015; Ryan & Deci, 2017; Xu et al. 2018). Likewise, previous research has shown that children's feelings of self-worth and failure-avoidance behaviors are related to different types of parental

involvement (e.g., Jensen & Deemer, 2020; Kowalski & Froiland, 2020; Olivari et al., 2018; Piquart & Gerke, 2019; Pychyl et al., 2002). Therefore, it would be important to analyze how the use of self-handicapping strategies can significantly influence the relationship between parental involvement and students' homework behaviors. Specifically, the present study aims to analyze the extent to which the use of self-handicapping strategies (partially or fully) mediates the relationship between the perception of parental involvement in homework and the students' behavioral engagement with these tasks. The reviewed research only offers indirect evidence of the role of self-handicapping as a mediator in this relationship. Based on the results of those studies, we have established the following hypotheses:

1. The perception of parental involvement in homework based on support (content-oriented support and autonomy-oriented support) will be directly and positively related to greater student behavioral engagement with homework (more time spent, more effort, less procrastination, and more homework done).
2. Perceived parental homework support will be directly and negatively related to the use of academic self-handicapping strategies.
3. The use of academic self-handicapping strategies will be positively related to: (a) more time spent on homework, (b) lower levels of effort in doing homework, (c) more procrastination when doing homework, and (d) less homework done (in terms of what the teachers set).
4. The use of self-handicapping strategies will partially mediate the relationship between perceived parental involvement with homework and the students' behavioral engagement with it. The greater the perceptions of parental homework support, the less likely the students will be to use self-handicapping strategies and the greater their behavioral engagement with homework. In contrast, the lower the perceptions of parental homework support, the greater the levels of self-handicapping and the lower the behavioral engagement with homework.

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Method

Participants

The participants in the study were 643 students from the four years of compulsory secondary education in Oviedo, a municipality of Asturias, Spain. The Principality

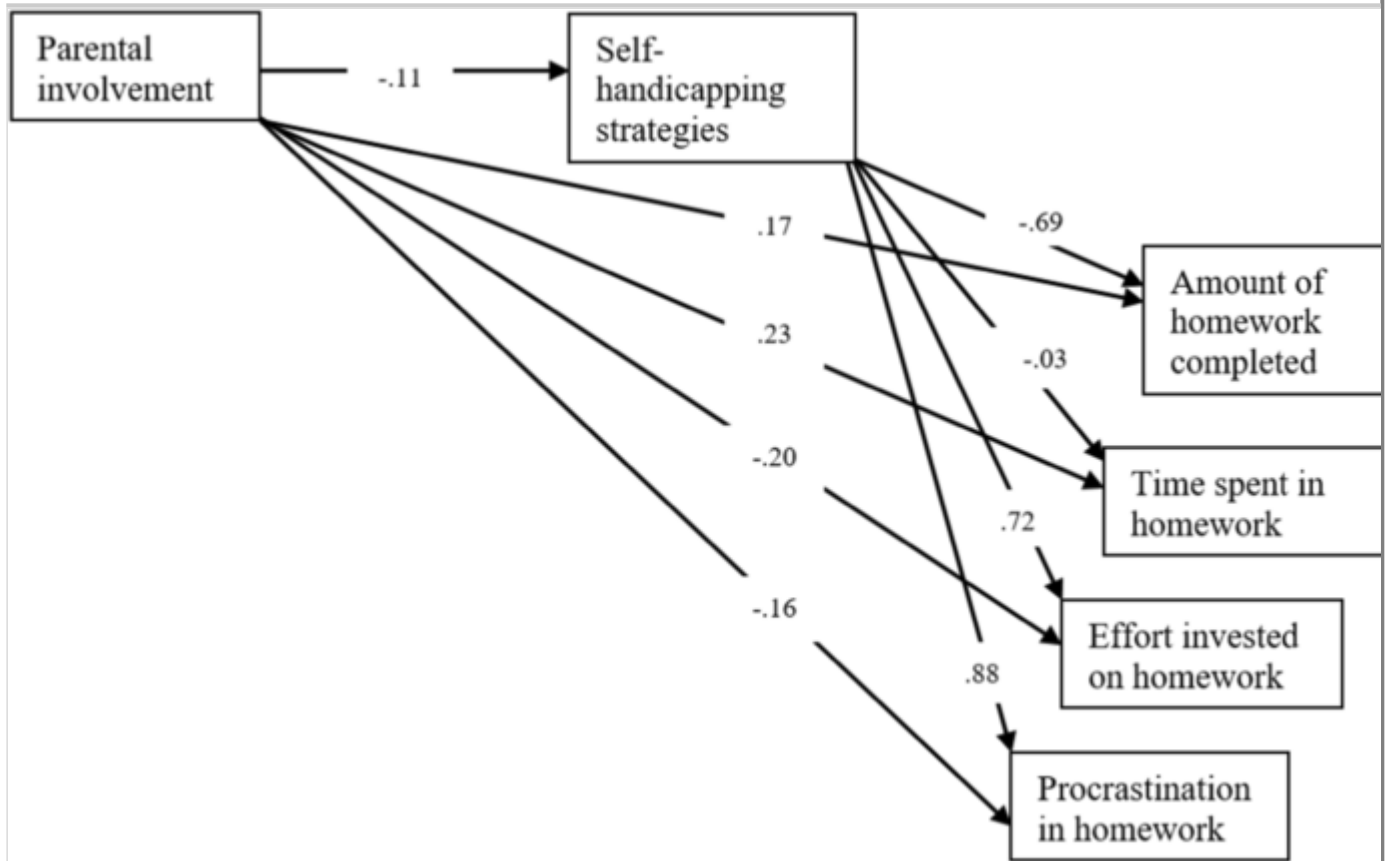
of Asturias (1,028,244 inhabitants) is a region of Spain with 907 non-university educational centers, of which 132 belong to the municipality of Oviedo (220,020 inhabitants). Of the 132 educational centers, 35 offer secondary education (from 7th to 10th). Ten centers were randomly selected to participate in the study, although three of them declined our invitation. As a result, seven schools participated in the study (six schools with four classrooms -one for each of the four school years- and one school with three classrooms). The sample size was relatively balanced by school year (7th = 21.2%; 8th = 24.7%; 9th = 27.2%; 10th = 26.9%), and by gender (51.8% girls). The subjects were aged between 12 and 16 years old ($M = 14.01$; $SD = 1.24$). Almost two-thirds of the subjects (64.3%) spent an hour or less on homework each day, just over a quarter (27.4%) spent between one and two hours, and the remaining 8.3% spent more than two hours a day on homework. None of the students who participated in the study had been diagnosed as having special educational needs. The socioeconomic level of the students' families was moderate, and the family homes were in an urban area. The schools the students attended were public, and funded mainly by the state.

Measuring Instruments

To examine the hypotheses, we measured the three types of variables in the model described in Fig. 1: perceived parental involvement, use of self-handicapping strategies, and student behavioral engagement with homework (amount, time, effort, procrastination).

Fig. 1

Results of mediation of self-handicapping strategies (direct effects). The association between self-handicapping and time spent in homework was not statistically significant



Perceived Parental Involvement This assessed one of the typical dimensions of family involvement (i.e., support). The eight items (four for content-oriented support and four for autonomy-oriented support) were adapted from previous studies (e.g., Dumont et al., 2012; Trautwein & Lüdtke, 2009; Xu et al., 2017) and have been used in other research in the same context (Núñez et al., 2015; Núñez et al., 2021). Representative items for this variable include: “My parents often ask me if I need help with my homework” or “My parents help me if I have problems with my homework” (content-oriented support) and “My parents encourage me to ask if I have questions about my homework” or “My parents listen to my ideas about homework” (autonomy-oriented support). The students respond using a five-point Likert-type scale (1 = never, ..., 5 = always). The scale demonstrates good reliability ($\alpha = .85$).

Student Behavioral Engagement Student engagement when doing homework was assessed via a behavioral dimension. According to previous research (e.g., Núñez et al., 2015; Regueiro et al., 2017) this is shown through four indicators: a) the amount of homework done each day from what is set by teachers, b) the time spent each day on homework, c) the usual effort put into doing homework, and d) procrastination behavior related to homework.

Amount of Homework Done We used three items to estimate the extent to which the student took completed homework to school, considering three contexts: (a) in a typical week, (b) in a week just before exams, and (c) during the year. An example item is “Some students come to school with all of their homework done, but others often come without having done it. What about you? How often do you come to school with all of your homework done (during the year / in a typical week / in a week just before exams)?” Responses to the items are given on a five-point Likert-type scale (1 = I almost never have my homework done, ..., 5 = I always come with my homework done). Despite the small number of items, the scale demonstrated very good reliability ($\alpha = .85$).

Time Spent The time students spend each day doing homework was estimated from their responses to two items used in previous studies. One item is: “Teachers usually set homework, some more than others. In general (from Monday to Friday), how much time do you usually spend on it?”. The response is on an ordinal scale (less than half an hour, between half an hour and an hour, between an hour and an hour and a half, between an hour and a half and two hours, and more than two hours). The other item is “Usually, doing my homework takes me a long time”, with a response scale of 1 = completely false, ..., 7 = completely true. The reliability of this scale was limited ($\alpha = .61$), possibly because of the small number of items.

Effort Student efforts when doing homework was measured using three items. One example item is “Doing homework is hard work. Not all students make enough effort. What about you?” Students respond on a five-point Likert-type scale, 1 = I make a lot of effort, ... 5 = I make very little effort. Considering the small number of items, the reliability of the scale was adequate ($\alpha = .77$).

Procrastination We wanted to assess the extent to which homework was the object of procrastinating behavior. This was evaluated through three items (e.g., “Often, when students get home, they have to do homework. Some students do their homework as soon as possible and others leave it until the end of the day. What do you do most of the time?” with a five-point response scale: 1 = I start it as soon as possible, ..., 5 = I leave it until the end). Given the small number of items in the scale, it had very good reliability ($\alpha = .85$).

Use of Self-Handicapping Strategies We used the self-handicapping scale created by Midgely and colleagues (Urduan & Midgely, 2001), adapted to the field of homework. We used six of the items from this scale (e.g., “Some students leave their homework until the last minute, and if they don’t do it well, they say that this is why (because they left everything until the last minute and there wasn’t enough

time). Does this happen to you?” or “Some students do many activities outside of school. If they don’t do their homework well, they say it is because they have a lot of activities and that doesn’t leave enough time. Does this happen to you?”). Students respond on a five-point Likert-type scale: 1 = never, ..., 5 = always. Given the number of items, the reliability of the scale was acceptable ($\alpha = .75$).

Procedure

We used a correlational transverse design. The questionnaire was administered once, at different times of the day, by a single person (in order for that not to be an extraneous variable) in the two schools during the month of April 2019. Prior to that, we had sought and obtained the permission of the school authorities, parents, and students (informed consent), in accordance with the Ethical Committee for the Investigation of the Principality of Asturias and with the Declaration of Helsinki. There were no significant occurrences during the application that might act as extraneous variables.

Data Analysis

The study objective and related hypotheses were addressed statistically in various phases. Firstly, we analyzed the reliability of the scales used, performed a descriptive analysis (mean, standard deviation, asymmetry, and kurtosis), and calculated Pearson correlations. Two students (0.31%) were eliminated from the initial sample because they had a large amount of missing data. The missing values were treated through the multiple imputation procedure. Secondly, we performed a mediation analysis using the PROCESS module (Hayes, 2013) within SPSS 22 software (IBM Corp, 2013). The independent variable was parental involvement and the dependent variables were amount of homework done, time spent in homework, effort invested in homework, and procrastination. Self-handicapping strategies functioned as a mediating variable. Gender was included as a covariate (to statistically control its potential effect on the mediating variable and the dependent variables), because boys, compared to girls, tend to be more competitive and more likely to resort to defensive strategies when their ability is questioned (Xu, 2006). Finally, effect sizes were assessed using Cohen’s d ($d < .20$ = non-significant effect; $d \geq .20$ and $d < .50$ = small effect; $d \geq .50$ and $d < .80$ = medium effect; $d \geq .80$ = large effect).

Results

Analysis of Descriptive Statistics

Table 1 shows the descriptive statistics (mean, standard deviation, asymmetry, and kurtosis) and Pearson correlations for the study variables. The data for asymmetry and kurtosis indicate a normal distribution for the variables. The correlations between the variables were all statistically significant ($p < .001$), with the exception of the relationship between gender and the other variables (gender was related with self-handicapping strategies, amount of homework, and effort invested, only at $p < .05$). The correlations suggest that, firstly, when the perceptions of parental involvement are higher, the use of self-handicapping strategies is lower, the amount of homework done (compared to what is set) is greater, more time is spent on homework, there is more effort, and there is less procrastination. Secondly, when the use of self-handicapping strategies is higher, less homework is done, less time is spent on it, less effort is made, and there is more procrastinating behavior. Thirdly, looking at the relationship between student engagement behaviors, when there is more procrastination, less homework is done, less time is spent on it, and less effort is made doing homework. Finally, compared with boys, girls used self-handicapping strategies to a lesser extent, invested more effort in performing homework, and performed a greater amount of homework. No significant differences were observed either in time spent or in procrastination.

Table 1

Descriptive statistics and correlation matrix

	Gender	PI	SHS	AHWC	TSHW	EIHW	PHW
Gender	–						
PPI	-.05	–					
SHS	-.09*	-.15**	–				
AHWC	.08*	.22**	-.46**	–			
TSHW	.05	.15**	-.04	.22**	–		
EIHW	-.08*	-.27**	.53**	-.65**	-.33**	–	
PHW	-.05	-.20**	.49**	-.60**	-.27**	.68**	–

PI (Perceived Parental Involvement); SHS (Self-Handicapping Strategies); AHWC (Amount of Homework Completed); TSHW (Time Spent on Homework); EIHW (Effort Invested in Homework); PHW (Procrastination in Homework). Amplitude of the measuring scale (min-max): Gender (1 = boy, 2 = girl), PPI (1–5), SHS (1–5), AHWC (3–16), TSHW (3–22), EIHW (3–16), PHW (3–17). The variable EIHW has a scale which is the reverse of AHWC, TSHW and PHW (1 = a lot of effort, ..., 5 = very little effort)

* $p < .05$; ** $p < .001$

	Gender	PI	SHS	AHWC	TSHW	EIHW	PHW
<i>M</i>	1.51	3.29	1.78	12.35	11.04	8.19	8.29
<i>SD</i>	.50	1.02	0.07	3.33	4.18	3.07	3.94
<i>Asymmetry</i>	-.047	-0.217	1.411	-0.510	0.500	0.393	0.226
<i>Kurtosis</i>	-2.00	-0.925	2.967	-0.436	-0.813	-0.679	-0.394

PI (Perceived Parental Involvement); SHS (Self-Handicapping Strategies); AHWC (Amount of Homework Completed); TSHW (Time Spent on Homework); EIHW (Effort Invested in Homework); PHW (Procrastination in Homework). Amplitude of the measuring scale (min-max): Gender (1 = boy, 2 = girl), PPI (1–5), SHS (1–5), AHWC (3–16), TSHW (3–22), EIHW (3–16), PHW (3–17). The variable EIHW has a scale which is the reverse of AHWC, TSHW and PHW (1 = a lot of effort, ..., 5 = very little effort)

* $p < .05$; ** $p < .001$

Mediation Analysis

The data from the mediation analysis is given in Table 2. The results are given for each of the four variables of student engagement (i.e., AHWC, TSHW, EIHW and PHW). Figure 1 shows a graphical representation of the mediation models (only direct effects are included).

Table 2

Results of mediation analysis (with gender as a covariate)

	Estimate (LLCI, ULCI)	SE	<i>T</i>	<i>p</i>	<i>Cohen's d</i>
Amount of Homework Completed (AHWC)					
PPI → SHS	-.107 (-.159, -.055)	.027	-4.019	.0001	0.321
SHS → AHWC	-.691 (-.801, -.582)	.056	-12.438	<.0001	1.126
PPI → AHWC (direct effect)	.172 (.097, .246)	.038	4.524	<.0001	0.363
PPI → AHWC (indirect effect)	.074 (.035, .120)	.019	3.813	.0001	0.304
PPI → AHWC (total effect)	.246 (.164, .328)	.042	5.888	<.0001	0.477

PPI (Parental Involvement); SHS (Self-Handicapping Strategies); AHWC (Amount of Homework Completed); TSHW (Time Spent in Homework); EIHW (Effort Invested on Homework); PHW (Procrastination in Homework); LLCI (Lower Limit Confidence Interval); ULCI (Upper Limit Confidence Interval)

	Estimate (LLCI, ULCI)	SE	<i>T</i>	<i>p</i>	<i>Cohen's d</i>
Gender → SHS	-.141 (-.248, -.034)	.055	-2.586	.0099	0.205
Gender → AHWC	.102 (-.049, .253)	.077	1.324	.1860	0.105
Gender → AHWC (total effect)	.199 (.032, .367)	.085	2.337	.0198	0.185
Time Spent on Homework (TSHW)					
PPI → SHS	-.107 (-.159, -.055)	.027	-4.019	.0001	0.321
SHS → TSHW	-.026 (-.190, .139)	.084	-0.304	.7615	0.024
PPI → TSHW (direct effect)	.230 (.118, .343)	.057	4.016	.0001	0.321
PPI → TSHW (indirect effect)	.003 (-.013, .023)	.009	0.294	.7688	0.023
PPI → TSHW (total effect)	.233 (.122, .344)	.057	4.117	<.0001	0.329
Gender → SHS	-.141 (-.248, -.034)	.055	-2.586	.0099	0.205
Gender → TSHW	.174 (-.054, .403)	.116	1.500	.1340	0.119
Gender → TSHW (total effect)	.199 (-.049, .405)	.116	1.540	.1240	0.122
Effort Invested on Homework (EIHW)					
PPI → SHS	-.107 (-.159, -.055)	.027	-4.019	.0001	0.321
SHS → EIHW	.718 (.623, .814)	.049	14.755	<.0001	1.431
PPI → EIHW (direct effect)	-.195 (-.260, -.130)	.033	-5.861	<.0001	0.475
PPI → EIHW (indirect effect)	-.077 (-.122, -.037)	.020	-3.869	.0001	0.309
PPI → EIHW (total effect)	-.272 (-.347, -.197)	.038	-7.155	<.0001	0.588
Gender → SHS	-.141 (-.248, -.034)	.055	-2.586	.0099	0.205
Gender → EIHW	-.096 (-.228, .037)	.067	-1.419	.1565	0.112
Gender → EIHW (total effect)	-.197 (-.349, .044)	.078	-2.536	.0114	0.201
Procrastination in Homework (PHW)					
PPI (Parental Involvement); SHS (Self-Handicapping Strategies); AHWC (Amount of Homework Completed); TSHW (Time Spent in Homework); EIHW (Effort Invested on Homework); PHW (Procrastination in Homework); LLCI (Lower Limit Confidence Interval); ULCI (Upper Limit Confidence Interval)					

	Estimate (LLCI, ULCI)	SE	<i>T</i>	<i>p</i>	<i>Cohen's d</i>
PPI → SHS	-.107 (-.159, -.055)	.027	-4.019	.0001	0.321
SHS → PHW	.884 (.756, .999)	.065	13.572	<.0001	1.267
PPI → PHW (direct effect)	-.162 (-.249, -.075)	.045	-3.642	.0003	0.290
PPI → PHW (indirect effect)	-.095 (-.152, -.047)	.025	-3.845	.0001	0.307
PPI → PHW (total effect)	-.257 (-.355, -.159)	.050	-5.152	<.0001	0.415
Gender → SHS	-.141 (-.248, -.034)	.055	-2.586	.0099	0.205
Gender → PHW	-.048 (-.226, .129)	.090	-0.537	.5912	0.042
Gender → PHW (total effect)	-.197 (-.373, -.027)	.102	-1.699	.0897	0.134

PPI (Parental Involvement); SHS (Self-Handicapping Strategies); AHWC (Amount of Homework Completed); TSHW (Time Spent in Homework); EIHW (Effort Invested on Homework); PHW (Procrastination in Homework); LLCI (Lower Limit Confidence Interval); ULCI (Upper Limit Confidence Interval)

The results from this study confirm the hypothesis of partial mediation of the use of self-handicapping strategies in the relationship between perceived parental involvement and student engagement when doing homework. The mediating role of the use of self-handicapping strategies was confirmed for three of the four student behavioral engagement variables (amount of homework done, effort made, and procrastination) (see Fig. 1). More specifically, we found that when parental support involvement was perceived to be greater, students were less likely to use self-handicapping strategies (although the effect size was small; $d = 0.309$), leading to more homework being done, more effort being made in doing the homework, and less procrastination. The effect size was very large in those three cases ($d = 1.149$; $d = 1.462$; $d = 1.283$, respectively). In contrast, when parental support involvement was perceived as lower, there was greater use of self-handicapping strategies, less homework was done, less effort was made doing it, and there was more procrastination (e.g., students left it until the end of the day). The strength of the moderation of the use of self-handicapping strategies was small in the three cases (AHWC: $d = 0.295$; EIHW: $d = 0.299$; PHW: $d = 0.297$). The mediation is partial, because the direct effect of PI on AHWC, EIHW, and PHW was statistically significant (with a medium or close to medium effect size).

Hence, as the data from Table 2 shows, the perception of parental involvement as support has both direct and indirect (via self-handicapping) effects on children's behavioral engagement with homework, except in the relationship with time spent doing homework, where there is no mediation effect, but there is a direct (positive) effect.

Discussion

Parental support when doing homework, especially when children are aware of it (Thomas et al., 2020), is an important factor in student motivation and behavioral engagement in these kinds of academic tasks during secondary education (Froiland, 2018; Gonida & Cortina, 2014; Jungert et al., 2020). Given that, the main contribution of this study is the analysis of self-handicapping strategies as a possible mediating variable in the relationship between perceptions of parental involvement (content-oriented and/or autonomy-oriented) with homework and students' behavioral engagement with it.

In line with our starting hypothesis, our results indicate that perceived parental involvement as support has not only a significant direct effect on student homework behavior, but also an indirect effect via self-handicapping. On the one hand, we saw that when students perceived that their parents provided more support (autonomy-oriented and content-oriented support), encourage their initiative, competence, and volition when doing homework—e.g., incentivizing them to value homework as a route to improve their academic skills and learn interesting things, reaching agreement, demonstrating patience—(Froiland, 2014; Ryan & Deci, 2017), they made more effort and spent more time on homework, they did more of the homework they are set, and they reported less procrastinating behavior. However, students who did not perceive this kind of involvement from their parents demonstrated more maladaptive behaviors in terms of engagement with homework (lower effort, less time spent, less of the set homework done, more likelihood of procrastination). These findings are consistent with other studies that have directly linked perceptions of parental homework support and adaptive behavioral engagement with these tasks in secondary-school students (Dumont et al., 2012; Núñez et al., 2015).

Our results also show that the effect of parental support involvement on student behavioral engagement with homework is partially mediated by self-handicapping strategies. In accordance with our hypothesis, parental involvement in homework based on support reduced the likelihood that the children would engage in academic

self-handicapping behaviors. This finding reinforces, as other studies have stressed, how important the type and quality of parent-child interactions are for academic motivation during adolescence (Ricard & Pelletier, 2016; Song et al., 2015). More specifically, our results are in line with Boon (2007), as they seem to confirm that parental styles that are based on consistency, setting guidelines, and guiding children, combined with encouraging autonomy and providing affection, are related to lower use of self-handicapping strategies. It seems, therefore, that parental involvement in homework in the form of support may be a protective factor against self-sabotaging strategies.

Likewise, our results also indicate that when there is less parental support involvement (both in terms of autonomy-oriented support and content-oriented support), there is a greater tendency for students to self-handicap. This is consistent with findings from other studies with secondary-school children that have found positive relationships between parental styles characterized by the absence of affective support and self-handicapping (Boon, 2007; Greaven et al., 2000; Reis & Peixoto, 2013).

It is possible that the absence of affective-motivational parental support when doing homework is perceived by the students as indicative of a lack of certainty about their personal worth. Parental educational styles in which absence of emotional support predominate are very often associated with the children developing low feelings of self-worth (Olivari et al., 2018; Pinguart & Gerke, 2019; Pychyl et al., 2002), as they usually interpret that as meaning they will only gain the regard of their parents if they show that they are competent (Jones & Berglas, 1978). In the academic side of things, feelings of low self-worth increase the fear of failure (De Castella et al., 2013), given the relationship that students who doubt their own competence usually establish between failure and low self-worth (Martin, 2010). For these students, self-handicapping would be the lesser of two evils, as a handicap that hinders their performance would allow them to salvage their personal worth in the eyes of their parents, and thus allow them to maintain hope of achieving their parents' esteem (Leondari & Gonida, 2007).

In addition to the relationship between parental involvement and self-handicapping, our results also indicate that this self-protective strategy has a significant direct negative effect on students' behavioral engagement with homework. More specifically, and in accordance with our hypothesis, use of self-handicapping was related with making less effort with homework, completing less of the homework that was set, and a greater level of procrastination. The results support the idea of

the maladaptive nature of self-handicapping from an academic point of view, as it is associated with bad academic habits (Zuckerman et al., 1998) along with poor self-regulation of learning (Cano et al., 2018; Jiang & Kleitman, 2015).

In contrast to our hypothesis, however, we found no significant effect of self-handicapping on the time spent doing homework. It is possible that, in the absence of emotional support, parents adopt some kind of involvement based on, among other things, monitoring the time their children spend on homework (Karchach et al., 2013), which would explain why this variable seems not to be influenced by self-handicapping. Under these conditions of close supervision of time spent on homework, students might opt for other types of more stereotypical self-sabotaging behaviors such as making less effort (Leary & Shepperd, 1986) or procrastination (Török et al., 2018). Future studies should examine this possibility more deeply.

Educational Implications

The contributions made by this study suggest some broad educational implications. Firstly, parental participation in homework in the form of support not only directly encourages students' behavioral engagement with homework, it also indirectly reduces the tendency for students to engage in self-blocking strategies. Given this, parents seem to play an important role in their children's adaptive behavior when it comes to doing homework. However, this role is particularly effective when the involvement takes the form of affective-motivational support, providing guidelines and guidance rather than being overcontrolling, and encouraging students to take responsibility for their own academic work. Our results also suggest that parents' support-based involvement is related to less frequent self-handicapping. Because these self-protective strategies are negative predictors of students behavioral engagement with homework, it is essential to emphasize the importance of parental feedback when students are doing homework. This feedback should be based on the principle of unconditional acceptance and trust towards the children (Rothbaum et al., 2009) so that the students perceive that their personal worth is separate from their academic performance. This would not only make it less likely for them to experience fear of failure and fall back on self-defensive behaviors that would make it very hard for them to engage academically, it would also encourage the students' intrinsic motivation towards homework (Kowalski & Froiland, 2020). In this regard, interventions designed to train parents to provide a climate of emotional support and to satisfy their children's needs of competence, autonomy, and communication when doing homework have been shown to be effective in reducing

stress and encouraging students attitudinal engagement and adaptive behavior (Moé et al., 2018; Moé et al., 2020).

Parents can also play an important role in how children judge their performance on achievement tasks. It seems that under self-handicapping lie maladaptive attributional schemas based on stable and uncontrollable causes —e.g., academic failure due to an immutable lack of intelligence— (Yu & McLellan, 2020). Students who develop this attributional pattern are more likely to engage in a downward spiral of hopelessness, decreased motivation and lack of achievement striving (Perry et al., 2005). Consequently, their motivational and behavioral involvement in homework could be threatened. However, parents can prevent the development of this dysfunctional explanatory thinking by encouraging students to value ability as a modifiable and improvable characteristic through effort and the use of appropriate strategies and procedures (e.g., desirable self-attribution and positive self-talk; Marsh & Craven, 2006). This type of intervention would encourage students to perceive control over their learning process and performance, value failure as an opportunity to learn (and not as a threat to personal worth) and set highly adaptive achievement goals (Graham, 2020; Matteucci, 2017). Thus, this attributional work on the part of parents would result in a greater motivational and behavioral commitment of students towards academic work.

Limitations of the Study and Future Lines of Research

The results of this study should be considered in the light of some limitations. One notable limitation is the use of self-report measures as the single data collection technique, which should be complemented by other procedures (e.g., in-depth interviews with parents and students, diaries, in-situ observation) to increase the validity of the results. A second limitation is the transversal nature of the study design. Future studies should validate the conclusions of our study by using longitudinal or repeated measure designs. Thirdly, the sample we used was only secondary-school students, which makes it difficult to generalize the results to the full school population. It is not for nothing that other studies (e.g., Núñez et al., 2015) have shown that the effect of parental involvement and student engagement with homework may vary according to age or the school year.

In this study, we only evaluated parental involvement in the form of support (autonomy and content). Other studies should investigate how other types of parental involvement (e.g., control) are related to self-handicapping and students' homework behaviors. On similar lines, self-handicapping is not the only type of defensive strategy that students apply in the academic context (Martin, 2010),

which is why future studies should look at how parental involvement is related to strategies such as over-exertion or defensive pessimism. Finally, future studies should analyze more rigorously the role of gender in the relationship between parental involvement, self-handicapping and behavioral involvement in homework. In the present study, gender has been considered as a covariate, and our data seem to indicate that women are less likely to adopt self-handicapping strategies and to show more adaptive behaviors than men in involvement in homework (more effort invested and more amount of homework completed). Although our findings would be consistent with those of other studies (Trautwein et al., 2006; Yu & McLellan, 2019), new studies are needed (e.g., longitudinal designs) that make it possible to specifically analyze to what extent different types of parental involvement in their children's homework constitutes a causal antecedent of gender differences in the use of self-worth protection strategies (e.g., self-handicapping) and student behavioral engagement with homework.

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Data Availability

The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

Declarations

Conflict of Interest The authors have no conflicts of interest to declare that are relevant to the content of this article.

Consent to Participate Written informed consent was obtained from the school authorities, parents, and students.

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