



Do fathers' and mothers' parenting styles influence students' emotional engagement in the same way?

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Título: ¿Influye el estilo parental de los padres y las madres en el compromiso emocional del alumnado de la misma manera?

Resumen: El compromiso emocional en el aula es un constructo adaptativo y deseable, ya que implica que el estudiante valora positivamente el trabajo escolar. Esta forma de implicación se ha relacionado con un mejor rendimiento académico, bienestar psicológico y motivación a largo plazo. Por tanto, comprender los factores que contribuyen al compromiso emocional del alumnado es crucial para fomentar entornos educativos efectivos. El objetivo de esta investigación es analizar el efecto del estilo parental de padres y madres sobre el compromiso emocional del alumnado, mediado por la satisfacción o frustración de las necesidades psicológicas básicas y la motivación intrínseca. Participaron 412 estudiantes universitarios (304 mujeres, edad entre 18 y 23 años). Se pusieron a prueba cuatro modelos de ecuaciones estructurales, uno para cada estilo parental y progenitor. Los resultados mostraron patrones similares para padres y madres; el apoyo a la autonomía parental se relacionó positivamente con la satisfacción de las necesidades psicológicas del alumnado, mientras que el control parental se relacionó negativamente; la satisfacción de las necesidades psicológicas se asoció positivamente con la motivación para estudiar, mientras que su frustración se relacionó negativamente; y la motivación para estudiar predijo positivamente el compromiso emocional. Los resultados se alinean con la teoría de la autodeterminación, destacando el papel de los estilos parentales en la configuración del compromiso emocional del alumnado.

Palabras clave: Estilo parental. Necesidades psicológicas básicas. Motivación intrínseca. Compromiso emocional. Teoría de la autodeterminación.

Abstract: Emotional engagement in the classroom is an adaptive and desirable construct as it implies that schoolwork is valued positively by the student. This form of engagement has been linked to better academic performance, psychological well-being, and long-term motivation. Understanding the factors that contribute to students' emotional engagement is therefore crucial for fostering effective educational environments. The aim of this research is to examine how the parenting styles of fathers and mothers relate to students' emotional engagement via satisfaction or thwarting of basic psychological needs and intrinsic motivation. The participants consisted of 412 undergraduate students (304 females, aged 18-23 years). Four structural equation models were tested, one for each parenting style (i.e., perceived control and autonomy support) and parent. Results showed broadly similar patterns for fathers and mothers across the tested models; parental autonomy support was positively related to the satisfaction of students' psychological needs, while parental control was negatively related; the satisfaction of psychological needs related positively with intrinsic motivation, whereas the thwarting of these related negatively; and the intrinsic motivation positively predicted emotional engagement. The results align with self-determination theory, emphasizing the role of parenting styles in shaping students' emotional engagement. These findings highlight the importance of fostering autonomy-supportive parenting practices to promote students' motivation and emotional investment in their academic journey.

Keywords: Parenting style. Basic psychological need. Intrinsic motivation. Emotional engagement. Self-determination theory.

Introduction

Engagement is one of the most relevant constructs in the academic context due to its relationship with students' optimal functioning and achievement of success (Reeve et al., 2020; Tao et al., 2022). When engaged, students actively participate in learning activities in multiple ways (Christenson et al., 2012). Consequently, engagement is considered a multidimensional construct comprising four components: behavioral, emotional, cognitive, and agentic (Reeve & Tseng, 2011). Among these, emotional engagement, defined as the presence of positive emotions and the absence of negative emotions during learning tasks (Skinner et al., 2009), enables students to focus on their learning process (Kuo & Chuang, 2016) and develop a positive perception of their academic work (Tvedt et al., 2021). In university students, emotional engagement has also been negatively associated with intentions to drop out (Tvedt et al., 2021).

Given that engagement is a modifiable element influenced by social factors (e.g., parents; Núñez & León, 2018), understanding these influences is crucial for designing effective interventions. Despite existing evidence, research on the specific social factors that contribute to students' emotional engagement remains limited. Therefore, this study examines the relationship between parenting styles (considering fathers and mothers separately), the satisfaction and thwarting of basic psychological needs, intrinsic motivation, and emotional engagement in undergraduate students. To the best of our knowledge, no previous research has analysed these relationships while accounting for the differential influence of parenting styles. This distinction is relevant because the literature suggests that maternal and paternal parenting may show partially overlapping, but not necessarily identical, associations with developmental and academic outcomes (Yaffe, 2020).

Parenting Styles

As the family environment is one of the earliest and most influential micro-contexts for development, parents may continue to shape students' emotional and motivational

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functioning even in emerging adulthood. Although parenting has been studied more extensively in childhood and adolescence, parental interpersonal styles may remain relevant during university years, as students continue to interpret and be affected by parental ways of supporting or constraining their autonomy. The self-determination theory (SDT; Ryan & Deci, 2000) identifies autonomy support and control as two key interpersonal styles through which parents may influence students' motivational functioning. Parents who adopt an autonomy-supportive style acknowledge their children's perspective, encourage initiative, explain the rationale behind rules, provide constructive feedback, create opportunities for decision-making, and use flexible language when communicating with their children (Deci & Ryan, 2012). This parenting approach fosters a secure, stable, and positive sense of self (Ryan & Deci, 2017). Thus, parental autonomy-support contributes to positive and adaptive child development by enhancing psychosocial functioning and increasing engagement (Chirkov & Ryan, 2001). It also promotes autonomous motivation, psychological well-being, perceived competence, positive attitudes toward school (Vasquez et al., 2016), and overall quality of life (Bülow et al., 2022). In contrast, controlling parents dictate how their children should think, feel, and act, limiting their participation in decision-making and dialogue (Vasquez et al., 2016). Consequently, it is often associated with maladjustment and ill-being (Soenens & Vansteenkiste, 2010), negatively affecting psychological development (Zhai et al., 2023).

Research suggests that basic psychological needs play a mediating role in these relations (Vansteenkiste et al., 2020). Thus, rather than influencing students' emotional engagement only directly, parental interpersonal styles may shape it indirectly through motivational processes that are rooted in the satisfaction or frustration of their basic psychological needs (Vasquez et al., 2016). Although these parenting dimensions are theoretically relevant for both parents, some studies suggest that maternal and paternal parenting may differ in how these styles are enacted and perceived (Manuele et al., 2023; Mastrotheodoros et al., 2019). However, the available evidence remains mixed, which justifies examining father and mother models separately in the present study (Yaffe, 2020).

Psychological Needs and Intrinsic Motivation

According to the principles of SDT, all individuals have three fundamental psychological needs: autonomy, competence and relatedness. Autonomy refers to a sense of psychological self-direction and freedom (Teuber et al., 2022), allowing individuals to act with authenticity and volition (Rodríguez et al., 2020). It is often described as a voluntary action driven by the desire to maintain an integrated sense of the self. Competence relates to one's ability to effectively interact with the environment, while relatedness encompasses the sense of belonging and meaningful connection with others (Wei et al., 2022). As previously noted, satisfying these

needs is essential for individuals' optimal functioning and development (Deci & Ryan, 2000). Conversely, the frustration of autonomy, relatedness, and competence negatively impacts students' emotional, social, and psychological well-being, leading to a loss of self-determined motivation, disengagement, and distress (Slobodin et al., 2020; Turgeon et al., 2022). Hence, parenting practices should actively support these needs (Deci & Ryan, 2000; Vansteenkiste et al., 2020), as SDT posits that the quality of the parent-child relationship is shaped by parental need-supporting behaviors (Ratelle et al., 2018). In this context, an autonomy-supportive parenting style fosters children's sense of autonomy and contributes to the satisfaction of these needs. In contrast, a controlling parental style undermines children's internal volition, leading to frustration of these needs (Barbierik et al., 2022; Teuber et al., 2022). Notably, parental control has been shown to hinder adolescents' career development by undermining their autonomy and competence in career decision-making (Ahn et al., 2023).

It is important to clarify that low control does not equate to autonomy support. In other words, the frustration of psychological needs is not merely a lack of need satisfaction. While insufficient satisfaction of these needs may hinder growth and flourishing, need frustration can be particularly harmful and even pathogenic (Ryan & Deci, 2017). According to Vansteenkiste et al. (2020), need frustration arises when basic psychological needs are actively thwarted within social contexts. In summary, research grounded in SDT consistently demonstrates that thwarting basic psychological needs is strongly associated with negative outcomes (Slobodin et al., 2020), whereas supporting these needs enhances intrinsic motivation and facilitates internalization (Ryan & Deci, 2020).

Intrinsic motivation represents the highest level of self-determination, driving individuals to engage in activities voluntarily, without external pressure and for the inherent pleasure, interest, or enjoyment those activities provide. In educational settings, intrinsic motivation is especially relevant because it reflects students' genuine involvement in learning and their tendency to approach academic tasks out of curiosity and personal interest rather than obligation. Prior research has linked intrinsic motivation to a range of desirable and adaptive outcomes, and it has been identified as a strong positive predictor of students' academic achievement, engagement, positive affect, goal pursuit, and self-esteem (Bureau et al., 2022). From a SDT perspective, intrinsic motivation is more likely to develop when social contexts support students' basic psychological needs for autonomy, competence, and relatedness. In this sense, intrinsic motivation is particularly relevant in the present study because it may operate as a key motivational mechanism linking students' psychological need experiences with their emotional engagement in academic contexts. In line with this view, prior research in educational contexts has shown that intrinsic

motivation is associated with higher levels of emotional engagement (Ganotice et al., 2022; Ito & Umemoto, 2022).

The present study

Despite the existing evidence on the relationship between parenting styles and basic psychological needs (Macakova & Wood, 2020), fathers' and mothers' parenting have not been sufficiently examined within an integrated framework that includes need satisfaction and frustration, intrinsic motivation, and emotional engagement. Although some studies suggest that mothers and fathers may differ in certain parenting practices, the available evidence remains mixed and does not support a uniform pattern of parent-specific effects across outcomes. Examining fathers and mothers separately may therefore help clarify whether similar or distinct patterns emerge in the associations among parenting styles, psychological needs, intrinsic motivation, and emotional engagement.

The present study makes a threefold contribution. First, it integrates parenting styles, basic psychological need satisfaction and frustration, intrinsic motivation, and emotional engagement within a single SDT-based model. Second, it extends previous research by focusing on undergraduate students, a population that has received comparatively less attention in studies on parenting and academic engagement. Third, it examines fathers' and mothers' parenting separately, allowing us to explore whether comparable or distinct patterns emerge across parent models.

In light of these considerations, the present study aimed to examine how parenting styles relate to students' emotional engagement through the mediating role of the satisfaction and frustration of basic psychological needs and intrinsic motivation. Guided by SDT, we propose the following hypotheses: (H1): Parental autonomy support will be positively associated with the satisfaction of students' basic psychological needs, whereas parental control will be positively associated with the frustration of these needs; (H2): The satisfaction of basic psychological needs will be positively related to intrinsic motivation, whereas the frustration of these needs will be negatively related to intrinsic motivation; (H3): Intrinsic motivation will positively predict emotional engagement; (H4): Given the mixed evidence in the literature, father and mother models were examined separately to explore whether the pattern of associations among parenting styles, psychological needs, intrinsic motivation, and emotional engagement was similar or different across parents.

Method

Participants

A total of 412 university students participated in the study (304 females, 108 males; $M = 19.84$; $SD = 2.83$, age

range 18-23). Participants were recruited at the Faculty of Educational Sciences at the University of Las Palmas de Gran Canaria. Data on parents' level of education indicated that 27.9 % of mothers had at least a university degree, 37.9 % high school studies or professional training, 30.1 % basic education and 4.1 % were uneducated. Regarding fathers, 19.2 % of them had a university degree, 34.2 % high school studies or professional training, 41% basic education and 5.6 % were uneducated. Participants were recruited through convenience sampling from undergraduate students enrolled in the Faculty of Educational Sciences at University of Las Palmas de Gran Canaria. Inclusion criteria required participants to be currently enrolled university students aged between 18 and 23 years. No additional exclusion criteria were applied, except for incomplete or invalid responses, which were handled through the missing data procedure described in the data analysis section.

Procedure

All students participated on a voluntary and confidential basis. Measures were collected from March to May of the academic year 2021/2022. A researcher administered all questionnaires to participants in the classroom and provided them with instructions and clarifications if needed before completing them. Participants gave their informed consent prior to the administration of questionnaires. Data were collected using an online questionnaire students could access through a link to Google Forms. The study was conducted in accordance with the ethical guidelines of the Declaration of Helsinki and was approved by the University Human Research Ethics Committee.

Instruments

Parenting style

To assess parental autonomy support, the Spanish version of the Perceived Parental Autonomy Support Scale (P-PASS; Álvarez et al., 2019) was used. P-PASS includes 24 items divided into two subscales of 12 items each: parental autonomy support (e.g., "My parents gave me many opportunities to make my own decisions about what I was doing") and parental psychological control (e.g., "In order for my parents to be proud of me, I had to be the best"). Items were preceded with the sentence: "When I was growing up..." and were rated on a 7-point Likert scale ranging from 1 (do not agree at all) to 7 (very strongly agree). Reliability of the scale has been provided by previous studies ($\alpha = .67-.86$; Álvarez et al. 2019) and in the present study McDonald's Omega for each subscale ranged between .87 and .96.

Basic psychological need satisfaction and frustration

To assess basic psychological need satisfaction and frustration the Spanish version of the Basic Psychological Need

Satisfaction and Frustration Scale (BPNSF; Cardella et al., 2020) was used. BPNSF includes 24 items organized into 6 subscales, of 4 items each, that measure satisfaction and frustration of each of the basic psychological needs: needs for autonomy (e.g., “I feel a sense of choice and freedom in the things I undertake”), competence (e.g., “I have serious doubts about whether I can get things right”) and relatedness (e.g., “I feel connected with people who care for me, and for whom I care”). Items were rated on a 5-point Likert scale ranging from 1 (completely untrue) to 5 (completely true). The reliability of the scale has been confirmed in previous studies ($\omega = .85-.81$; Cardella et al., 2020) and in the present study McDonald’s Omega for each subscale ranged between .80 and .81.

Intrinsic motivation

To assess students’ intrinsic motivation the Spanish version of the Échelle de Motivation en Éducation was used (Núñez et al., 2005). Specifically, we relied on the corresponding subscale which includes 4 items (e.g., “Because I experience pleasure and satisfaction while learning new things”) preceded with the sentence: “Why do you go to University...”. Items were rated on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). The reliability of the scale has been proven in previous studies (Cronbach’s alpha = .88; Núñez et al. 2005) and in the present study McDonald’s Omega for the scale was .95.

Emotional engagement

To assess emotional engagement, the Spanish version of the emotional engagement subscale was used (Núñez & León, 2019). The subscale includes 3 items (e.g., “When I am in this class, I feel good”). Items were rated on a 7-point Likert

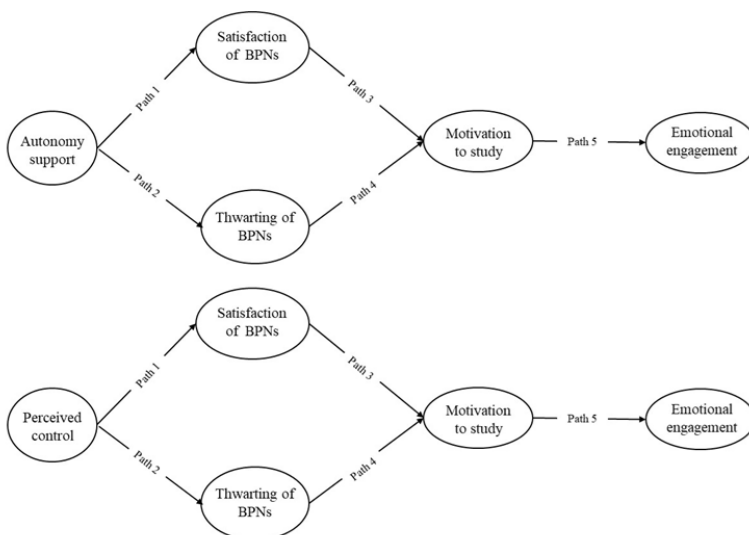
scale ranging from 1 (strongly disagree) to 7 (strongly agree). The reliability of the scale has been proven in previous studies ($\omega = .84$; Núñez & León, 2019) and in the present study McDonald’s Omega for the scale was .86.

Covariates. Background covariates were accounted for in the modelling strategy for all models. This included age, sex, and parents’ educational level.

Data Analytic Plan

To test the direct and indirect relations hypothesized among variables, four structural equation models were estimated (SEM), one for each parenting style (i.e., perceived control and autonomy support) and parent (i.e., fathers and mothers). Figure 1 shows the direct paths hypothesized for each parent. The paths for the indirect effects tested are displayed in Table 4. This procedure allows us to examine the total effect that a parenting style has on a student, contrary to freely estimating all plausible correlations among constructs (Arens & Morin, 2016). Following Keith (2019), the magnitude of standardized beta coefficients with values $> .05$ are considered small, $> .10$ moderate, and $> .25$ as large. The indices used to estimate the fit of models were the following: the root mean square error of approximation (RMSEA), standardized root mean square residual (SRMR), comparative fit index (CFI), and the Tucker-Lewis index (TLI). Indices with the following values represent a good model fit: RMSEA $< .08$, SRMR $< .06$ and CFI/TLI $> .95$ (Hu & Bentler, 1999). Nevertheless, some flexibility in their interpretation must be assumed when dealing with naturalistic data (Heene et al., 2011). 95% confidence intervals (CIs) were estimated around the beta coefficient. These are statistically significant at $p < .05$ when the upper and lower confidence intervals do not contain zero.

Figure 1
Hypothesized models for each parent



The sample size was considered adequate for the statistical analyses conducted in this study. Specifically, structural equation modeling (SEM) typically requires a minimum sample size of at least 200 participants to ensure stable parameter estimation and sufficient statistical power (Kline, 2016). Therefore, the final sample of 412 participants exceeds these recommendations, supporting the robustness of the analyses performed. Although no a priori power analysis was conducted, the sample size is consistent with previous SEM studies in educational research and ensures adequate statistical power for detecting medium to large effects. Students were nested within their respective classes using the TYPE = COMPLEX command in Mplus. As the variables were categorical in nature, we relied on the weighted least

square mean adjusted estimator (WLSM). This estimation method has shown a higher accuracy over the maximum likelihood method when relying on categorical variables that are not normally distributed (Schmitt, 2011). All data analysis was performed with Mplus 8.7. Missing data were handled with the full information maximum likelihood approach.

Results

Preliminary Analyses

Mean, standard deviations, McDonald's omega and Pearson's correlations of variables are shown in Table 1.

Table 1

Means, standard deviations, McDonald's Omega and, correlations among variables

	Mean	SD	ω	1	2	3	4	5	6	7
1. Perceived control from mothers	1.83	.78	.88	--						
2. Perceived autonomy support from mothers	4.02	.83	.96	-.65*	--					
3. Perceived control from fathers	1.80	.74	.87	.62*	-.33*	--				
4. Perceived autonomy support from fathers	3.79	.92	.96	-.26*	.46*	-.49*	--			
5. Fullfilment of BPNs	4.25	.64	.80	-.39*	.53*	-.31*	.38*	--		
6. Thwarting of BPNs	2.31	.76	.81	.37*	-.39*	.35*	-.32*	-.56*	--	
7. Intrinsic motivation to study	5.14	1.48	.95	-.15*	.20*	-.16*	.13*	.33*	-.30*	--
8. Emotional engagement	5.21	1.29	.86	-.23*	.20*	-.22*	.13*	.34*	-.33*	.61*

Note. * $p < .05$

Structural Equation Models

Model fit indices for the models tested are displayed in Table 2. All models displayed a good fit.

Table 2

Model fit indices for the SEM models

	Model	χ^2	RMSEA	CFI	TLI	SRMR
Mothers	Autonomy support	1693.705 (1018, 248)	.04	.97	.97	.09
	Perceived control	1684.084 (1065, 250)	.04	.97	.96	.10
Fathers	Autonomy support	1915.016 (1018, 248)	.05	.95	.95	.10
	Perceived control	1725.321 (1018, 248)	.04	.96	.96	.09

Note. * $p < .05$; $N = 412$; ω = McDonald's omega.

Table 3 shows the results for the SEMs conducted. All paths resulted statistically significant. Following (Keith, 2019), all beta coefficients displayed large magnitudes except for the path 3 for the mothers' autonomy support model, and path 4 for both parental control models, which showed moderate magnitudes. Overall, perceived autonomy support from both parents had a positive predictive value on students' satisfaction of basic psychological needs, whereas parental control had a negative predictive value. On path 2, the opposite trend was observed. Regarding paths 3 and 4, for

all models, the satisfaction of basic psychological needs positively predicted intrinsic motivation, whereas for the thwarting of these, the predictive value was negative. Finally, again for all models, intrinsic motivation positively predicted emotional engagement. When comparing results for both parents, a similar pattern was observed in the magnitude of the coefficients, with no marked differences between father and mother models, except for Path 1, in which the association between mothers' parenting style and basic psychological need satisfaction was stronger.

Table 3
Standardized effects from the SEMs

Model		Path 1			Path 2			Path 3			Path 4			Path 5		
		β	<i>SE</i>	95% CIs	β	<i>SE</i>	95% CIs	β	<i>SE</i>	95% CIs	β	<i>SE</i>	95% CIs	β	<i>SE</i>	95% CIs
Mothers	Autonomy support	.88	.01	.78, .83	-.73	.02	-.61, -.52	.20	.01	.20, .25	-.29	.02	-.43, -.39	.81	.03	.61, .67
	Perceived control	-.87	.02	-1.74, -1.50	.84	.01	1.24, 1.46	.21	.01	.23, .29	-.27	.02	-.44, -.37	.83	.02	.61, .66
Fathers	Autonomy support	.77	.01	.72, .78	-.74	.03	-.75, -.65	.24	.01	.21, .30	-.27	.02	-.29, -.23	.78	.03	.72, .82
	Perceived control	-.82	.03	-.87, -.78	.79	.02	.76, .82	.24	.01	.22, .26	-.25	.01	-.28, -.23	.80	.02	.78, .84
		Covariates														
		Parents' educational level					Gender					Age				
Mothers	Autonomy support	.09	.02	.05, .12	.03	.03	-.02, .07	.09	.02	.06, .13						
	Perceived control	-.05	.02	-.09, -.01	-.06	.02	-.09, -.02	-.11	.02	-.13, -.08						
Fathers	Autonomy support	.11	.02	.07, .15	.02	.02	-.01, .06	.07	.02	.03, .11						
	Perceived control	-.01	.02	-.04, .02	-.05	.02	-.10, -.02	-.09	.02	-.13, -.06						

Note. All models resulted statistically significant at $p < .05$; CIs = Confidence intervals; *SE* = Standard error.

Table 4 displays the results from the indirect paths. All indirect paths resulted statistically significant $p < .05$ with magnitudes of relations generally moderate, except for the total indirect and the path from thwarted basic psychological needs and emotional engagement, which were large. In this way, results show that the perceived control of both parents

has a negative indirect effect on students' emotional engagement whereas autonomy support had a positive effect. Similarly, the satisfaction of basic psychological needs has a positive indirect effect on emotional engagement through intrinsic motivation and the thwarting of these a negative indirect effect.

Table 4
Standardized indirect effects from the SEMs

Model		Total indirect			Path 1 ^a			Path 2 ^b			Path 3 ^c			Path 4 ^d		
		β	<i>SE</i>	95% CIs	β	<i>SE</i>	95% CIs	β	<i>SE</i>	95% CIs	β	<i>SE</i>	95% CIs	β	<i>SE</i>	95% CIs
Mothers	Autonomy support	.30	.02	.28, .33	.14	.01	.12, .16	.17	.01	.16, .19	.16	.02	.13, .18	-.23	.01	-.25, -.22
	Perceived control	-.34	.01	-.36, -.32	-.15	.01	-.17, -.13	-.20	.01	-.21, -.17	.17	.02	.15, .20	-.23	.01	-.25, -.21
Fathers	Autonomy support	.30	.02	.28, .33	.15	.01	.13, .17	.15	.01	.14, .17	.19	.02	.17, .22	-.21	.01	-.23, -.19
	Perceived control	-.32	.01	-.35, -.23	-.16	.01	-.18, -.14	-.16	.01	-.17, -.15	.19	.01	.17, .22	-.20	.01	-.22, -.19

Note. All models resulted statistically significant at $p < .05$; CIs = Confidence intervals; *SE* = Standard error.

^aPath 1 → Perceived control/Autonomy support → Satisfaction of BPNs → Intrinsic motivation → Emotional engagement

^bPath 2 → Perceived control/Autonomy support → Thwarting of BPNs → Intrinsic motivation → Emotional engagement

^cPath 3 → Satisfaction of BPNs → Intrinsic motivation → Emotional engagement

^dPath 4 → Frustration of BPNs → Intrinsic motivation → Emotional engagement

Discussion

Emotional engagement is a crucial factor in enhancing students' learning processes. Hence, it is a desirable outcome influenced by various social factors, including parental involvement. This study aimed to examine the impact of parenting styles on undergraduate students' emotional engagement through the mediating role of basic psychological need satisfaction (or frustration) and intrinsic motivation. The present research contributes to the existing literature in several ways. First, it explores the influence of parenting styles while distinguishing between fathers and mothers. Second, by focusing on emotional engagement as a modifiable variable, it examines the role of key antecedents in shaping students' academic experiences. Overall, the findings highlight the significance of parenting style as a social determinant of emotional engagement in undergraduate students, emphasizing the mediating role of psychological need satisfaction (or frustration) and intrinsic motivation.

The present findings provide a more nuanced understanding of the mechanisms through which parenting styles influence students' emotional engagement. Specifically, the

results support a mediational pathway in which parental autonomy support enhances the satisfaction of basic psychological needs, which in turn promotes intrinsic motivation and, ultimately, emotional engagement. Conversely, controlling parenting undermines these needs, leading to lower levels of motivation and engagement. These findings are consistent with previous empirical research grounded in SDT, which highlights the central role of need-supportive environments in fostering adaptive educational outcomes (Ryan & Deci, 2020; Vansteenkiste et al., 2020). In line with prior studies (e.g., Froiland & Worrell, 2017; Bureau et al., 2022), the present results reinforce the idea that psychological need satisfaction operates as a key explanatory mechanism linking contextual factors, such as parenting, to students' motivation and engagement. Importantly, the inclusion of both need satisfaction and need frustration in the model provides a more comprehensive perspective, as these constructs are not merely opposite ends of a continuum but distinct processes with differential effects on students' functioning.

Furthermore, the strength of the relationship between intrinsic motivation and emotional engagement observed in

this study is consistent with previous findings suggesting that intrinsically motivated students are more likely to experience positive emotions, interest, and enjoyment in academic contexts (Ganotice et al., 2022; Ito & Umemoto, 2022). This reinforces the importance of fostering high-quality, intrinsically grounded motivation in educational settings. The results obtained confirm the first hypothesis. Specifically, findings indicate that an autonomy-supportive parenting style from both parents was positively associated with students' basic psychological need satisfaction, whereas a controlling parenting style related negatively. These results reflect the quality of the parent-child relationship (Ratelle et al., 2018) and align with the postulates of SDT as well as previous findings by Barbierik et al. (2022) and Teuber et al. (2022). This suggests that when students perceive that their parents support their initiatives, communicate in an open and non-controlling manner, demonstrate empathy, and allow them to make independent decisions, their basic psychological needs are more likely to be satisfied. Conversely, when parents exert pressure or manipulate their children into behaving in specific ways, psychological needs are more likely to be frustrated. In this regard, parental influence plays a crucial role in fostering voluntary, authentic, and pressure-free behaviors, as well as in promoting feelings of efficacy and connectedness with others.

Furthermore, our results provide additional support for hypothesis 2. Specifically, across all tested models, the satisfaction of basic psychological needs was positively associated with students' intrinsic motivation, while its frustration had a negative impact. As Froiland and Worrell (2017) suggest, when students perceive that their competence, autonomy, and relatedness needs are met, they are more likely to experience heightened intrinsic motivation. Consistent with the core principles of SDT, need-supportive environments foster intrinsic motivation through the satisfaction of basic psychological needs, whereas need-frustrating environments diminish intrinsic motivation (Vansteenkiste et al., 2020). Jaramillo (2021) emphasizes that environments promoting autonomy in university students primarily influence emotional and motivational aspects of learning, as well as the learning process itself. In this context, the satisfaction of basic psychological needs is an essential antecedent to greater internalization and autonomy in behavior (Vansteenkiste et al., 2020) and is critical for the development and maintenance of intrinsically motivated behaviors.

Regarding hypothesis 3, the results also confirmed our hypothesis. Specifically, the findings indicated that intrinsic motivation was positively and significantly associated with students' emotional engagement, with beta values of .77 or higher in all hypothesized models. This outcome aligns with previous studies in the educational context, which found that intrinsic motivation serves as a strong predictor of emotional engagement (Ganotice et al., 2022; Ito & Umemoto, 2022). This finding reinforces the significance of the emotional di-

mension in the process of internalizing the learning experience. University students are more likely to experience positive emotions (e.g., enthusiasm, interest) rather than negative ones (e.g., anxiety) when engaging with their homework voluntarily and with intrinsic interest, free from external pressures, that is, when their motivation is intrinsically driven.

Finally, the findings provided only limited support for hypothesis 4. The father and mother models showed broadly similar patterns in the associations between parenting styles and the satisfaction or frustration of basic psychological needs. Although some coefficients were slightly higher for mothers, no formal between-parent parameter comparisons were conducted; therefore, these differences should be interpreted descriptively rather than as evidence of statistically significant differences or equivalence between parents. Recent studies suggest that parenting styles differ depending on the gender of the parents (Mastrotheodoros et al., 2019; Pakaluk & Price, 2020; Pratt et al., 2019), which might lead one to expect disparities between fathers and mothers in the relationship between parenting style and psychological needs. Similar findings were reported by Pinquart (2016), who explored the moderating role of parental gender in predicting achievement outcomes. In short, as noted by Yaffe (2020), there is no definitive answer to this question, indicating that further scientific investigation and new approaches are necessary.

The present study makes several key contributions to the existing literature. First, it integrates parenting styles, basic psychological need satisfaction and frustration, intrinsic motivation, and emotional engagement within a single structural model, providing a more comprehensive understanding of the mechanisms underlying students' academic experiences. Second, it distinguishes between fathers' and mothers' parenting styles, addressing an ongoing debate in the literature regarding potential differences in their influence. Although patterns were similar, this finding may help inform the ongoing debate within previous research and suggests that parenting processes may operate similarly across parental roles in this context. Third, by simultaneously examining both need satisfaction and need frustration, this study advances prior research that has often focused exclusively on need satisfaction, highlighting the importance of considering these constructs as distinct processes with differential effects. Finally, the findings extend the application of SDT to the context of higher education, emphasizing the role of family factors in shaping university students' emotional engagement, an area that has received comparatively less attention in previous research.

Practical Implications

To promote the emotional engagement of university students, several practical implications can be proposed. Parents are a crucial contextual factor in fostering adaptive and desirable outcomes in students. As such, they should be mindful of the interpersonal style they adopt in their relationship with their children, as this can lead to significantly different outcomes. Our findings suggest that parents should prioritize promoting autonomy (Barberis et al., 2022; Wei et al., 2022; Macakova & Wood, 2020) by adopting an autonomy-supportive parenting style, while avoiding controlling behaviors that can have negative consequences (Zhai et al., 2023). This can be achieved by acknowledging children's perspectives, encouraging their initiatives, offering constructive feedback and opportunities for decision-making, and using flexible and open communication (Deci & Ryan, 2012). Such actions will satisfy the psychological needs for autonomy, competence, and relatedness, fostering quality motivation and positive emotions during learning tasks. This study provides valuable insights that highlight the importance of parental training in promoting students' emotional engagement. Specifically, the present findings suggest that parent-targeted educational programs should focus on fostering autonomy-supportive parenting practices. These programs could include structured training aimed at helping parents to: (a) provide meaningful choices and encourage independent decision-making; (b) use non-controlling language and avoid excessive pressure; (c) acknowledge and validate students' emotional experiences; and (d) promote open communication and active listening. In addition, such interventions could incorporate applied components such as role-playing, guided reflection, and feedback sessions to help parents better understand how their behaviors influence their children's psychological need satisfaction and intrinsic motivation. Given the mediating mechanisms identified in this study, programs should explicitly address how autonomy support contributes to need satisfaction and, consequently, to higher levels of emotional engagement. These initiatives could be implemented through workshops, online training modules, or family–university collaboration programs, particularly during key academic transition periods such as entry into higher education. Universities could consider implementing online or face-to-face training programs to equip parents with the tools to support their children's autonomy, which plays a critical role in both their well-being and academic success. These findings should also inform policy decisions that emphasize the importance of parental education, given its significant impact on the development and academic motivation of young individuals.

Finally, the implications of these findings can be understood at multiple levels. At the family level, the results emphasize the importance of fostering autonomy-supportive parenting practices that enhance students' psychological need satisfaction and intrinsic motivation. At the teacher level, educators can contribute to students' emotional engage-

ment by adopting autonomy-supportive teaching strategies, such as providing meaningful choices, encouraging active participation, and creating a supportive and responsive classroom climate. At the institutional level, universities could promote family–university partnerships and develop support programs that address students' psychological well-being and engagement, particularly during key transition periods. Finally, at the societal level, these findings highlight the need for educational policies that recognize the role of family environments in students' academic development and well-being, encouraging a more integrated and systemic approach to education.

Limitations and Implications for Future Lines of Research

Although this research offers valuable insights to the field, it is important to acknowledge several limitations. First, the study sample consisted of undergraduate students from a single faculty, with a disproportionate number of female participants due to the higher female enrolment in education sciences. This gender imbalance limits the generalizability of the findings to other academic disciplines, educational levels, and more gender-balanced populations. Future research would benefit from a gender-balanced sample, an expanded sample size, and replication of these results with students from different educational levels. Additionally, given the non-experimental nature of the study, the results cannot be interpreted as causal. Given the cross-sectional design and non-experimental nature of the study, the identified pathways should be interpreted as theoretically grounded associations rather than causal processes. Longitudinal or experimental designs would help clarify the directionality and development of these relationships over time. Third, the retrospective assessment of parenting style (“When I was growing up...”) may be affected by recall bias, as participants' current experiences and perceptions could influence their responses. Fourth, the exclusive use of self-report measures raises the possibility of common method variance and may have inflated some of the observed associations. Moreover, incorporating multi-informant approaches, rather than solely relying on students' perceptions, could enhance the robustness of the results. As Ratelle et al. (2018) suggest, it would be valuable to simultaneously examine the relative contributions of the three psychological needs, which might reveal different patterns of relationships between mothers and fathers. Fifth, although the father and mother models showed broadly similar patterns, the present design does not allow conclusions about statistical equivalence between parents, as no formal multigroup parameter comparisons were conducted. Finally, the relatively short length of some scales, such as those assessing emotional engagement and intrinsic motivation, may have constrained the breadth of the constructs captured. Future research could address these limitations by using more comprehensive instruments and combining quantitative and qualitative approaches, such as interviews or

focus groups, to gain a deeper understanding of students' experiences. In addition, examining the relative contribution of each basic psychological need and exploring potential moderating variables, such as gender, socioeconomic status, or cultural context, would further strengthen this line of research.

Conclusions

The present study provides evidence that parenting styles appear to be associated with university students' emotional engagement through the mediating mechanisms of basic psychological needs and intrinsic motivation. These findings reinforce the explanatory value of SDT in understanding how social contexts influence students' academic experiences. Beyond confirming established theoretical relationships, this study highlights the importance of considering both need satisfaction and need frustration as distinct processes, as well as examining the role of both fathers and mothers

within the same analytical framework. Although the father and mother models showed broadly similar patterns, this finding opens new avenues for research into the conditions under which such differences may emerge. Overall, the study contributes to a more comprehensive understanding of the psychological processes underlying students' engagement and underscores the importance of fostering autonomy-supportive environments, both in family and educational contexts, to promote adaptive academic outcomes.

Complementary Information

Conflict of Interest: The authors declare that they have no conflicts of interest.

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