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Helicopter parenting, autonomy support, and young adults' psychological adjustment in Turkey: the mediating role of psychological control

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Abstract
This study examined the relations from helicopter parenting and autonomy-supportive parenting to Turkish emerging adults' psychological adjustment (depression, anxiety, and stress levels), using parental psychological control as a mediating mechanism. The participants included 457 emerging adults aged between 17 and 27 ($M = 20.47$, $SD = 1.90$) who filled out a self-report questionnaire on their parents' helicopter parenting, autonomy-supportive parenting, psychological control, and their depression, anxiety, and stress levels. Path analyses were performed to test the hypotheses. The findings displayed that there were indirect links from helicopter parenting and autonomy-supportive parenting to emerging adults' psychological adjustment through parental psychological control in a relatively collectivistic Turkish cultural context. Results indicated that parents who engage in developmentally inappropriate over-involvement in their children's lives may also use psychological control to maintain or strengthen their control over their children. Furthermore, parents' autonomy support may be related to a decrease in their tendency to use psychological control, which in turn results in better psychological adjustment.

Keywords Helicopter parenting · Autonomy-supportive parenting · Psychological control · Psychological adjustment · Emerging adults

Helicopter parenting and autonomy-supportive parenting have received increased attention in the past several years in the parenting literature and popular media. Helicopter parenting is one kind of parenting approach that includes providing emerging adult children with developmentally inappropriate support and being behaviorally intrusive and overinvolved. Helicopter parenting is characterized by high levels of warmth and low levels of autonomy granting (Padilla-Walker & Nelson, 2012; Segrin et al., 2013; Schiffrin et al., 2014), which may lead to the inhibition of autonomy and self-control in emerging adults (Hong & Cui, 2020; Padilla-Walker & Nelson, 2012). Another parental construct, autonomy-supportive parenting, involves supporting the child's age-appropriate independence, problem-solving skills, and decision-making capacity (Hwang et al., 2023; Kouros et al., 2017; Soenens et al., 2007). Autonomy-supportive parenting is conceptualized as a dimension of positive parenting and related to social and psychological adjustment in children, including lower levels of anxiety and depression (Reed et al., 2016), and higher levels of life satisfaction, well-being, and self-efficacy (Hwang et al., 2023; Jung et al., 2019).

Helicopter parenting has been frequently related to negative outcomes in both Western (including mostly "White Caucasian" samples) and Eastern cultures (see Cui et al., 2022; Vigdal & Bronnick, 2022), including higher depressive symptoms and anxiety, increased prescribed medication and consumption of pain pills, and less life satisfaction and well-being (Hong & Cui, 2020; LeMoyne & Buchanan, 2011; Schiffrin et al., 2014; Segrin et al., 2013). Yet, the social and cultural contexts might be important in interpreting the outcomes of helicopter parenting. For example, in their studies with American and Chinese college students,

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Hwang and colleagues (2023) found that higher levels of helicopter parenting were related to a higher level of depression among only American college students. Helicopter parenting has been associated with violations of adult children's basic psychological needs (Schiffrin et al., 2014) and self-control (Şimşir Gökalp, 2023), all of which are related to depression, anxiety, and stress in emerging adults (Blasé et al., 2021; Chen et al., 2015). Becoming autonomous and functioning independently are central themes in the period of emerging adulthood (Arnett, 2004); therefore, restriction of autonomy and over-involvement may constitute obstacles to self-development and may limit emerging adults' opportunities for gaining age-appropriate skills, competence (Schiffrin et al., 2014, 2019), and healthy regulatory strategies (Perry et al., 2018). Depression is likely to arise when individuals have lower levels of self-worth and self-efficacy (Oliver & Paull, 1995), which may be developed through parenting with constant hovering around and making decisions for the children (Reed et al., 2016; Şimşir Gökalp, 2023). Furthermore, helicopter parents may reinforce their own perfectionism and fear of failure by shielding their children from failure and creating a constant sense of pressure to meet their personal standards (Segrin et al., 2020). Thereby, perfectionist tendencies and not being equipped to handle failures might be the factors that contribute to anxiety and stress in emerging adults (Flett et al., 1994).

Studies of helicopter parenting and autonomy-supportive parenting have focused on the association between these parenting practices and emerging adult children's outcomes through child-related factors such as self-control and self-efficacy (see Jung et al., 2019; Love et al., 2020; Şimşir Gökalp, 2023) and parent-related factors such as parental perfectionism, criticism (Segrin et al., 2015, 2020), and psychological control (Rousseau & Scharf, 2015; Winner & Nicholson, 2018). When parents hover around their children, refrain from obstacles in their lives, and interfere with their actions and decisions, such efforts may play a part in promoting parental psychological control (Winner & Nicholson, 2018). On the other hand, when parents provide choices and allow their children to make decisions, encourage initiation, and minimize external pressure, such efforts could impede parental psychological control (Soenens et al., 2009). Therefore, considering that parental psychological control may be one strategy employed by helicopter parents and not by autonomy-supportive parents, it is critical to examine the relationships between parental psychological control and helicopter and autonomy-supportive parenting styles to explain the psychological health of emerging adults.

One specific determinant of parental control, psychological control, is defined as parenting practices involving psychological and emotional intrusion into children, such as guilt induction and love withdrawal, as forms of control (Barber, 1996). Psychological control is consistently linked with the development of various problem behaviors (for a review, see Barber & Harmon, 2002) and negative affect, including shame and guilt, in children (Assor et al., 2004; Aunola et al., 2013). Helicopter parenting and psychological control are separate constructs (Zhang et al., 2020). For example, Zong and Hawk (2022) found that both parent- and adolescent-reported helicopter parenting are not related to maternal psychological control. Although these two parenting constructs include control attempts, they have distinctions both empirically and conceptually (Padilla-Walker & Nelson, 2012). Restriction of autonomy is more related to helicopter parenting and intrusion into emotional functioning is more distinctive for psychological control (Padilla-Walker & Nelson, 2012).

Given that the same parenting style might have varied effects on children of different races and ethnicities (Deater-Deckard & Dodge, 1997), culture may also have an impact on the association between parental control and children's psychological adjustment (Dwairy & Achoui, 2010). In general, although Western cultures may value independence and autonomy over relatedness, Eastern cultures may de-emphasize autonomy-granting and favor relatedness (Chao & Tseng, 2002; Triandis, 1995). These findings are in line with the concept of culture specificity hypothesis, which implies that parenting practices and their relations to child outcomes may be context-dependent and vary from one culture to another (Bornstein & Cheah, 2006). Relatedly, parental over-involvement may be perceived as intrusiveness in Western cultures, whereas it may be interpreted as emotional support in Eastern cultures (Sümer & Kağıtçıbaşı, 2010). Turkey, located at the intersection of Asia and Europe, is often perceived as a "bridge" between Western and Eastern cultures, which is reflected in parenting values and practices as well. Among Turkish families, the need and practice of independence are more common in urban settings, whereas the value of material and emotional interdependence is observed more in rural settings (Kağıtçıbaşı, 2007). Furthermore, when authoritarian parenting is coupled with warmth or parental acceptance, it may not be perceived as a rejection sign by parents in the Turkish cultural context and may help to mitigate the adverse effects of harsh discipline (Erkman & Rohner, 2006). Considering the mixed findings in the literature that show the relations of parenting practices (helicopter parenting and autonomy-supportive parenting) to college students' psychological adjustment, examining these relations in a relatively collectivistic culture is important for identifying cultural nuances in psychological control.

Considering Turkey's distinct cultural characteristics, psychological control may represent one particular

mechanism that explains the relationship between helicopter parenting and autonomy-supportive parenting and psychological adjustment in emerging adults. We argue that parents may use psychological control in the context of over-involvement in their children's lives. Parents who engage in helicopter parenting may use psychological control as a way to further control their children. Supporting this argument, previous studies have found that helicopter parenting is positively linked to a critical family environment and parental perfectionism (Segrin et al., 2015, 2020). Moreover, this relationship may be a mechanism that explains adverse psychological outcomes in emerging adults. Psychological control might make children feel guilty and ashamed of themselves when they fail, and they also foster resentment toward the parent (Deci & Ryan, 2012). Furthermore, Winner and Nicholson (2018) found that parental psychological control mediated the relationship between helicopter parenting (overparenting) and both grandiose and vulnerable narcissistic phenotypes. In light of theoretical conceptualizations and previous studies, we sought to test the relations between specific forms of maternal (and paternal) control (helicopter parenting and psychological control), and autonomy-supportive parenting and psychological adjustment, such as the levels of depression, anxiety, and stress in emerging adults.

Taken together, this study aimed to examine how maternal and paternal helicopter parenting and autonomy-supportive parenting could be related to the psychological adjustment problems of emerging adults. Specifically, the current study considered maternal and paternal psychological control as potential mediators in the association between parenting (helicopter parenting and autonomy-supportive parenting) and psychological adjustment problems (depression, anxiety, and stress). In light of previous studies and research, we hypothesized that maternal (and paternal) psychological control would mediate the relationship between maternal (and paternal) helicopter parenting and psychological adjustment problems (depression, anxiety, and stress) among emerging adults. We also hypothesized that maternal (and paternal) psychological control would mediate the relationship between maternal (and paternal) autonomy-supportive parenting and psychological adjustment problems (depression, anxiety, and stress) among emerging adults.

Table 1 Descriptive characteristics of the sample

Variables	*N*	%
Gender		
Female	230	50.3
Male	225	49.2
Other	2	0.4
SES		
Low	51	11.2
Middle	307	67.2
High	97	21.2
Unity of Family		
Parents together	423	92.6
Parents separated/divorced	33	7.3
Living arrangements		
Parents' home	136	29.8
Own place	41	9.0
Dormitory	256	56.0
Other	16	3.5
College year		
Prep	18	3.9
Freshman	183	40.0
Sophomore	112	24.5
Junior	84	18.4
Senior	55	12.0

SES Socioeconomic Status

Method

Participants

The final study sample consisted of participants in their emerging adulthood ($N = 457$, age range = 17–27, $M = 20.47$, $SD = 1.90$, 50.3% female, 49.2% male). The data of twenty participants who had lost their mother and/or father was not included in the data analysis to avoid potential confounding effects. Data were screened for outliers according to the z distribution ($|z| \geq 3.29$) of each of the study variables until a normal distribution was obtained (Tabachnick & Fidell, 2001), and twenty-two participants were also excluded from the study. After outliers were excluded, statistical analyses were run for the final sample. Three of the participants did not report their age and two of the participants did not report their gender. The descriptive characteristics of the sample are demonstrated in Table 1.

Procedure

The ethics approval was obtained from the Ankara University Ethics Committee, and informed consent, including information about the purpose, procedure, confidentiality, and anonymity of the study was obtained from all participants. A set of self-report questionnaires in paper-and-pencil format were administered to participants, and it took approximately 20 min to complete. The participants received course credit for their participation in the study.

Measures

Sociodemographic information form This form was prepared by the authors to obtain information about the sociodemographic characteristics (e.g., age, gender, education,

living arrangement, number of college years, and perceived socioeconomic status) of participants.

Helicopter Parenting Behaviors Questionnaire (HPBQ) This scale consisting of two subscales were developed by Schiffrin et al. (2014) to measure the helicopter parenting behaviors (HPB, 9 items) and autonomy-supportive behaviors (ASB, 6 items) of the mothers of college students via their self-report. The 15-item questionnaire was rated on a scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*). The original form of the scale showed satisfactory internal consistency coefficients, which were 0.77 for HPB and 0.71 for ASB (Schiffrin et al., 2014). A Turkish adaptation study was conducted by Kömürcü Akik and Alsancak-Akbulut (2023) and revealed a Cronbach's alpha coefficient scores in the mother form were 0.78 for HPB, and 0.80 for ASB, and in the father form 0.80 for HPB and 0.84 for ASB, as well as Coefficient omega scores were 0.78 for HPB, 0.80 for ASB in the mother form, and 0.81 for HPB and 0.84 for ASB in the father form. In the current study, Cronbach's alpha coefficient scores in the mother form were 0.78 for HPB, and 0.78 for ASB, and in the father form 0.81 for HPB and 0.84 for ASB.

Psychological Control Scale-Youth Self Report (PCS-YSR) Maternal and paternal psychological control were assessed with the Psychological Control Scale (Barber et al., 2007). This scale includes 16 items. Response options ranged from 1 (*strongly disagree*) to 4 (*strongly agree*). Higher scores indicate a greater degree of maternal and paternal psychological control. Cronbach alpha consistency coefficient values were found to be between 0.83 and 0.88 for the maternal and between 0.83 and 0.90 for the paternal forms. The Turkish adaptation study demonstrated satisfactory Cronbach Alpha coefficients in the mother form.77 for the PC dimension; in the father form, 0.79, respectively (Sayil & Kindap, 2010). In this study, Cronbach Alpha coefficients for the PC dimension, in the mother form was 0.88, and in the father form was 0.90, respectively.

Depression Anxiety Stress Scale (DASS) This scale was developed by Lovibond and Lovibond (1995) to evaluate the depression, anxiety, and stress levels of individuals. DASS has 42 items, which are rated on a 4-point Likert scale (0 = *did not apply to me at all*, 3 = *applied to me very much or most of the time*). The scale has three subscales and each subscale has 14 items. The Cronbach's alpha scores of depression, anxiety, and stress subscales were respectively 0.96, 0.89, and 0.93 in the original study. The Turkish adaptation study of DASS revealed good Cronbach's alpha scores, which were 0.89 for the total scale, 0.90, 0.92, and 0.92 for depression, anxiety, and stress subscales, respectively (Akın & Çetin, 2007). In the current study, Cronbach's alpha scores were 0.92, 0.88, and 0.91 for depression, anxiety, and stress subscales, respectively.

Data analysis

Pearson's correlation analysis was carried out to investigate relationships between the study variables. Path analysis was used to test the hypothesized mediation model for the sample. Criteria for acceptable model fit in this study were the Comparative Fit Index (CFI) and the Goodness of Fit Index (GFI) greater than or equal to 0.90; and Chi-square ($\chi 2$)/degrees of freedom (df) lower than 3 and Root Mean Square Error of Approximation (RMSEA) of 0.05 or less (Byrne, 2016; Hu & Bentler, 1999; Kline, 2015). Using multiple fit statistics to evaluate model fit is recommended (Kline, 2015). The mediation effects were analyzed for the study sample, using a Bootstrapping method (2000 resamples) with 95% bias-corrected confidence intervals (BC CI) (Shrout & Bolger, 2002). The Bootstrapping method considered that if zero is not included in the confidence intervals (CIs) for the estimate of the indirect effect. This effect is statistically significant at $p < .05$ level (Shrout & Bolger, 2002). All data analyses were performed using IBM SPSS Statistics 23 and AMOS 22 software.

Results

Descriptive statistics and correlation analysis

Means, standard deviations, skewness, kurtosis values, and scores of the study variables are presented in Table 2. Variables were normally distributed between ±2.0 skewness and kurtosis values (George & Mallery, 2010). Pearson's correlation coefficients between variables are presented in Table 3. Helicopter parenting did not correlate with depression, anxiety, and stress, other than paternal helicopter parenting with depression.

Path analysis for the sample of emerging adults

A single-group path model was tested for the sample. The fit indices before and after the error associations are presented in Table 4. The model of the study sample had excellent goodness of fit values after the error associations of both maternal and paternal psychological control constructs as well as depression, anxiety, and stress (see Fig. 1).

The results showed that the model had excellent fit indices [($\chi 2$/df = 2.00, N = 457) = 31.965, CFI = 0.99, GFI = 0.99, AGFI = 0.96, RMSEA = 0.05)]. Figure 1 displayed the path

Table 2 Means, standard deviations, skewness kurtosis, and scores of the study variables

	M	SD	Skewness, kurtosis	Actual range of scores	Possible range of scores
HPB-MF	26.00	8.62	0.391, −0.225	9–54	9–54
ASB-MF	24.02	6.66	−0.361, −0.449	6–36	6–36
HPB-FF	23.03	8.83	0.497, −0.273	9–50	9–54
ASB-FF	21.31	7.68	−0.092, −0.704	6–36	6–36
PC-MF	28.04	8.42	1.030, 0.914	16–57	16–64
PC-FF	27.15	9.17	1.150, 0.883	16–60	16–64
DEP	13.11	9.79	0.636, −0.460	0–40	0–42
ANX	13.11	8.47	0.519, −0.356	0–41	0–42
STR	17.84	9.78	0.088, −0.806	0–42	0–42

M Mean; *SD* Standard Deviation; *ns* no significance; *HPB-MF* Helicopter Parenting Behaviors Subscale of HPBQ - Mother Form; *ASB-MF* Autonomy Supportive Behaviors Subscale of HPBQ - Mother Form; *HPB-FF* Helicopter Parenting Behaviors Subscale of HPBQ - Father Form; *ASB-FF* Autonomy Supportive Behaviors Subscale of HPBQ - Father Form; *PC-MF* Psychological Control Scale - Mother Form; *PC-FF* Psychological Control Scale - Father Form; *DEP* Depression Subscale of DASS; *ANX* Anxiety Subscale of DASS; *STR* Stress Subscale of DASS

coefficients for the model. Maternal helicopter parenting behaviors and maternal autonomy-supportive behaviors are significantly associated with maternal psychological control, respectively ($\beta = 0.25$, $p < .001$; $\beta = -0.24$, $p < .001$). Paternal helicopter parenting behaviors and paternal autonomy-supportive behaviors are also significantly associated with paternal psychological control, respectively ($\beta = 0.29$, $p < .001$; $\beta = -0.22$, $p < .001$). Maternal psychological control is significantly associated with depression ($\beta = 0.30$, $p < .001$), anxiety ($\beta = 0.24$, $p < .001$), and stress ($\beta = 0.23$, $p < .001$). Lastly, paternal psychological control is significantly associated with depression ($\beta = 0.15$, $p < .01$), anxiety ($\beta = 0.14$, $p < .01$), and stress ($\beta = 0.15$, $p < .01$).

Mediation analyses

To test the mediating effects in the pathway from maternal and paternal parenting behaviors to depression, anxiety, and stress, 95% bias-corrected confidence intervals (BC CI) were calculated, using a bootstrapping method with 2000 re-samples (Shrout & Bolger, 2002). Estimates, standard errors, and CIs of mediation models are presented in Table 5.

Maternal psychological control is significantly mediated the relationship between maternal helicopter parenting behaviors and depression (B = 0.07, CI: 0.05, 0.12, $p < .001$), anxiety (B = 0.06, CI: 0.03, 0.09, $p < .01$), and stress (B = 0.06, CI: 0.03, 0.09, $p < .01$). Similarly, the relationship between maternal autonomy-supportive behaviors and depression (B = −0.07, CI: −0.11, −0.04, $p < .01$), anxiety (B = −0.06, CI: −0.09, −0.03, $p < .01$), and stress

Table 3 Correlation coefficients of the study variables

	1	2	3	4	5	6	7	8	9	10
1.Gender	-	−0.09*	−0.19**	0.08	−0.00	0.04	0.15**	0.01	−0.06	−0.01
2. HPB-MF		-	0.48***	0.67***	0.32***	0.14**	0.08	0.03	0.09	−0.00
3. ASB-MF			-	0.30***	0.58***	−0.10*	−0.07	−0.08	0.00	−0.03
4. HPB-FF				-	0.56***	0.07	0.15**	0.01	0.07	0.02
5. ASB-FF					-	−0.08	−0.06	−0.17***	−0.08	−0.08
6. PC-MF						-	0.57***	0.34***	0.32***	0.28***
7. PC-FF							-	0.29***	0.29***	0.26***
8. DEP								-	0.75***	0.75***
9. ANX									-	0.78***
10. STR										-

HPB-MF Helicopter Parenting Behaviors Subscale of HPBQ - Mother Form; *ASB-MF* Autonomy Supportive Behaviors Subscale of HPBQ - Mother Form; *HPB-FF* Helicopter Parenting Behaviors Subscale of HPBQ - Father Form; *ASB-FF* Autonomy Supportive Behaviors Subscale of HPBQ - Father Form; *PC-MF* Psychological Control Scale - Mother Form; *PC-FF* Psychological Control Scale - Father Form; *DEP* Depression Subscale of DASS; *ANX* Anxiety Subscale of DASS; *STR* Stress Subscale of DASS

*$p < .05$, **$p < .01$, ***$p < .001$

Table 4 Fit indices for the models

		χ^2	df	χ^2/df	CFI	GFI	AGFI	RMSEA
Model predicting depression, stress, and anxiety	Model 1	998.702	20	49.94	0.50	0.69	0.31	0.33
	Model 2	607.110	19	31.95	0.70	0.82	0.58	0.26
	Model 3	431.978	18	24.00	0.79	0.87	0.68	0.22
	Model 4	359.806	17	21.16	0.83	0.88	0.70	0.21
	Model 5	31.965	16	2.00	0.99	0.99	0.96	0.05

CFI Comparative Fit Index; *GFI* Goodness of Fit Index; *AGFI* Adjusted Goodness of Fit Index; *RMSEA* Root Mean Square Error of Approximation

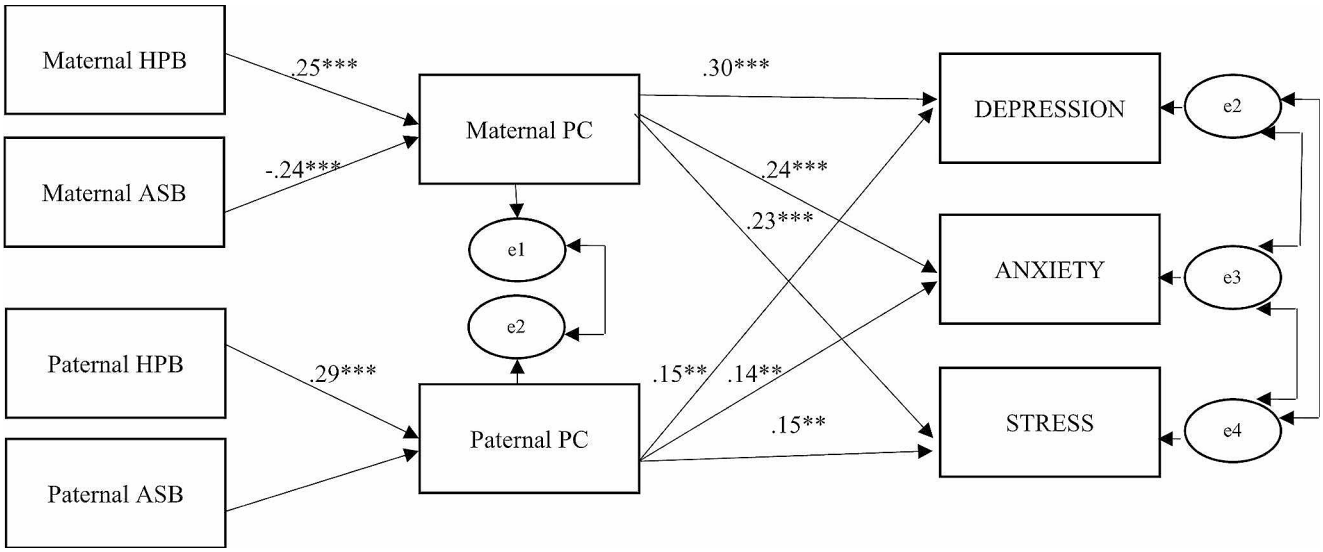

Fig. 1 Path Model predicting depression, stress, and anxiety for the group of university students ($n=457$). Standardized path coefficients among variables are presented. All path coefficients are statistically significant. Covariances among independent variables are not presented to enhance clarity. ASB: autonomy-supportive parenting, HPB: helicopter parenting behaviors, PC: psychological control. ** $p < .01$, *** $p < .001$

Table 5 Estimates of indirect effects

Model predicting depression, stress, and anxiety	B (SE)	%95 BC CI	
		Lower	Upper
Maternal HPB➔Maternal PC➔Depression	0.07*** (0.02)	0.05	0.12
Maternal HPB➔Maternal PC➔Anxiety	0.06** (0.02)	0.03	0.09
Maternal HPB➔Maternal PC➔Stress	0.06** (0.02)	0.03	0.09
Maternal ASB➔Maternal PC➔Depression	−0.07**(0.02)	−0.11	−0.04
Maternal ASB➔Maternal PC➔Anxiety	−0.06** (0.02)	−0.09	−0.03
Maternal ASB➔Maternal PC➔Stress	−0.06**(0.02)	−0.09	−0.03
Paternal HPB➔Paternal PC➔Depression	0.04* (0.02)	0.01	0.08
Paternal HPB➔Paternal PC➔Anxiety	0.04** (0.02)	0.02	0.07
Paternal HPB➔Paternal PC➔Stress	0.04** (0.02)	0.01	0.08
Paternal ASB➔Paternal PC➔Depression	−0.03* (0.02)	−0.07	−0.01
Paternal ASB➔Paternal PC➔Anxiety	−0.03** (0.02)	−0.06	−0.01
Paternal ASB➔Paternal PC➔Stress	−0.03** (0.02)	−0.06	−0.01

HPB Helicopter Parenting Behaviors Subscale of HPBQ, *ASB* Autonomy Supportive Behaviors Subscale of HPBQ, *PC* Psychological Control Scale

*$p < .05$, **$p < .01$, ***$p < .001$

(B = −0.06, CI: −0.09, −0.03, $p < .01$) significantly mediated by maternal psychological control.

Paternal psychological control is significantly mediated the relationship between paternal helicopter parenting behaviors and depression (B = 0.04, CI: 0.01, 0.08, $p < .05$), anxiety (B = 0.04, CI: 0.02, 0.07, $p < .01$), and stress (B = 0.04, CI: 0.01, 0.08, $p < .01$). In addition, the associations between paternal autonomy-supportive behaviors and depression (B = −0.03, CI: −0.07, −0.01, $p < .05$), anxiety (B = −0.03, CI: −0.06, −0.01, $p < .01$), and stress (B = −0.03, CI: −0.06, −0.01, $p < .01$) significantly mediated by paternal psychological control.

Discussion

The aim of this study was to expand the existing literature that has shown the link between helicopter parenting and autonomy-supportive parenting and psychological adjustment (depression, anxiety, and stress) in emerging adults (e.g., Schiffrin et al., 2014, 2019). Extending the previous studies, in addition to depression and anxiety, this study included stress as an indicator of psychological adjustment. Furthermore, parental psychological control, as a mediator, might explain the underlying mechanism between helicopter parenting and autonomy-supportive parenting and psychological adjustment problems in emerging adults living in a relatively collectivistic Turkish culture.

Results, indicating a negative correlation between parental psychological control and psychological adjustment, are consistent with previous research (e.g., Cui et al., 2014; Rogers et al., 2020). The results of this study also revealed that helicopter parenting and autonomy-supportive parenting are not significantly related to psychological adjustment in emerging adults, except for the negative association between paternal autonomy-supportive parenting and depression. Although helicopter parenting has been conceptualized as a less malevolent construct than psychological control (Padilla-Walker & Nelson, 2012), these findings are not completely consistent with the studies relating helicopter parenting to negative psychological outcomes (e.g., Schiffrin et al., 2014; Segrin et al., 2013). Considering that a moderate level of parental control is normative and prevalent in the relatively collectivistic Turkish cultural context, the developmental outcomes of helicopter parenting might also not be detrimental to Turkish emerging adults. Furthermore, supporting the cultural specificity hypothesis, emerging adults in the relatively collectivistic Turkish cultural context may interpret helicopter parents' over-involvement as supportive and caring, which may buffer the possible negative effects of overparenting. A previous study conducted in China found that the mental health outcomes of emerging adults did not differ in terms of the severity of helicopter parenting. However, helicopter parenting and mental health had an inverse relationship among American emerging adults (Hwang et al., 2023). Furthermore, Kwon et al. (2016) did not find a link between helicopter parenting and Korean college students' emotional well-being. Similarly, Wang et al. (2007) showed that although parental control has a negative effect on young adolescents' functioning in both China and the United States, these negative relations were weaker in China as compared to the United States. However, the results of the current study should be interpreted with caution since this study is not a cross-cultural comparison or person-centered approach that identifies different parenting profiles.

Results revealed that parental psychological control may explain the underlying mechanism in the relationship between helicopter parenting and emerging adults' levels of depression, anxiety, and stress. These results supported the previous findings that there are indirect relationships between helicopter parenting and psychological adjustment in emerging adults (e.g., Reed et al., 2016). Parents who engage in developmentally inappropriate over-involvement in their children's lives may also use psychological control, such as emotional manipulation and guilt induction, to maintain or strengthen their control over their children. For example, helicopter parents who use psychological control may discourage their children from making decisions on their own by withdrawing their love as a control tactic, which in turn may be related to lower levels of psychological adjustment (higher depression, anxiety, and stress) in their emerging adult children. Moreover, parental psychological control involves the application of perfectionistic expectations toward children (Smith et al., 2017), which were also found to be related to helicopter parenting (Segrin et al., 2020). These perfectionistic expectations might be related to either emerging adult children's resentment toward their parents (Deci & Ryan, 2012) or their use of avoidance strategies (e.g., fooling around instead of being prepared for an important day) (Shih, 2013). Furthermore, previous studies found that parents with higher levels of need frustration tend to use more psychological control (Costa et al., 2019; Matosic et al., 2016). Helicopter parents may become frustrated when their attempts to behaviorally control their children do not succeed, and they may use psychological control to impose their authority on their children.

Results also showed that higher levels of maternal (and paternal) autonomy-supportive parenting are related to lower maternal (and paternal) psychological control, which in turn is associated with lower depression, anxiety, and stress. Results indicated that autonomy-supportive parents may be more eager to encourage their children's volitional functioning and confidence (Soenens et al., 2009; Vansteenkiste et al., 2010) and engage in less psychologically controlling behaviors, which in turn may lead to better psychological adjustment among emerging adults. In line with this view, self-determination theory posits that autonomy-supportive parenting reflects behaviors that support children's basic psychological needs (relatedness, competence, and autonomy) (Vansteenkiste & Ryan, 2013), which may result in better psychological outcomes in children and adolescents (e.g., Legate et al., 2019; Neubauer et al., 2021). Furthermore, children of autonomy-supportive parents are less likely to find ways to protect themselves from negative judgments (Shih, 2013), which might play a protective role in their psychological adjustment (Zuckerman et al., 1998).

This study includes some limitations that should be considered while interpreting the results. Cross-sectional design precludes interpretations including cause-effect relationships and time-ordering of variables. The direction of effects between the variables may mutually influence one another, which should be explored further in future research. Also, another limitation could be related to the measure helicopter parenting. In this study, more behavioral (e.g., do your parents do …) items were used to measure of helicopter parenting instead of items that have an emphasis on perception (i.e., do you think your parents are too involved). So, it might be better to take into account the level of perceived helicopter parenting as invasive in future research. Furthermore, although depression, anxiety, and stress were conceptualized as outcomes of parenting practices in this study,

there is a possibility that parents may be more likely to control their children's behaviors when they perceive their children as depressed, anxious, or stressed. Future studies are recommended to use longitudinal designs to identify bidirectional or causal relations between the study variables. Another limitation of this study was the single source report bias. All measures in this study were completed by emerging adults. Although Barry et al. (2008) reported that children accurately report parenting practices, their perspective may also reflect their experiences and personalities. Therefore, future studies should include additional parental reports to reduce bias. In addition, this study did not include a cross-cultural comparison; therefore, the interpretation of findings with cultural explanations should be viewed with caution. Last but not least, based on the knowledge that reporting of psychological problems differs according to gender, participant gender should be examined as a potential moderator of outcomes or covary in future studies.

This study has several implications for mental health workers. Considering that culture is influential in the meaning attached to parental controlling behaviors and their consequences for children (Ispa et al., 2004), parenting interventions to promote effective parenting should be sensitive to cultural norms and values. Interveners or clinicians in relatively collectivistic cultures (e.g., Turkey) might explain to the parents that a moderate level of parental control (e.g., helicopter parenting) may be adaptive; however, higher levels of parental control may impede the need for autonomy in children, which is related to depression. Furthermore, considering that there is a positive correlation between helicopter parenting and psychological control in this study, these two controlling parental behaviors can play mutually reinforcing roles, which might be related to lower levels of psychological adjustment among emerging adults. Interveners and clinicians should inform parents about this possibility and develop methods to promote autonomy-supporting parenting practices. In terms of emerging adult children's psychological adjustment, clinicians may focus on expressing the idea that external factors, such as the cultural context and behaviors of parents might be more critical to their psychological well-being than their core selves.

In summary, this study suggests that the relationship between helicopter parenting and autonomy-supportive parenting and the psychological adjustment of emerging adults may be mediated by parental psychological control. Further research is needed to better understand the direction of the effects and the role of cultural context. By understanding the role of parental psychological control in the relationship between parenting and psychological adjustment in emerging adults, parents, and professionals can work to reduce the negative effects of parental control on psychological well-being.

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Data availability The data that support the findings of this study are available from the corresponding author, upon reasonable request.

Declarations

Research involving human participants and/or animals All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee (Ankara University Ethics Committee) and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed consent Informed consent was obtained from all individual participants included in the study.

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