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ORIGINAL PAPER

Helicopter Parenting and College Students' Psychological Maladjustment: The Role of Self-control and Living Arrangement

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Abstract

Objectives Previous studies suggested that helicopter parenting was associated with college students' psychological maladjustment. The mechanisms and circumstances explaining such an association, however, were less studied. In the present study, we aimed to extend the current research to investigate *how* and under *what condition* helicopter parenting was related to college students' psychological maladjustment by examining a potential mediator—self-control, and a contextual moderator—living arrangement.

Methods This study used a sample of 432 emerging adult college students from two large southern universities in the U.S. Participants reported their parents' helicopter parenting, their own self-control, symptoms of depression and anxiety, life satisfaction, and demographics (e.g., living arrangement).

Results Findings from structural equation modeling suggested that (1) self-control mediated the association between perceived helicopter parenting and college students' psychological maladjustment including symptoms of depression and anxiety and low life satisfaction; and (2) living arrangement moderated this association such that the association between perceived helicopter parenting and college students' psychological maladjustment was stronger among college students who were living with their parents than among those living away from their parents.

Conclusions The findings suggested that helicopter parenting could affect college students' psychological maladjustment through lower levels of self-control. The effect of helicopter parenting on psychological maladjustment could be more salient among students living with their parents as compared to those living away from their parents.

Keywords College students · Emerging adults · Helicopter parenting · Living arrangement · Psychological maladjustment · Self-control

Psychological maladjustment has been a rising problem among college students (James 2017; Rhodan 2016). For example, for the 2016–2017 academic year, 16.7% and 20.6% of college students were diagnosed with depression and anxiety, respectively; and 45.1% reported having suffered greater than average levels of stress (American College Health Association 2017). These psychological maladjustments are often concurrent with other difficulties, such as challenges of academics and finances, intimate relationship problems, career-related concerns, and family issues (American College Health Association 2017). Therefore, it is imperative to identify underlying factors that contribute to college students' psychological maladjustment and the related mechanisms.

Over the past decades, helicopter parenting has emerged as a growing trend in the U.S., drawing increasing attention from mass media and academia. Researchers define helicopter parenting as a pattern of overinvolved parenting of emerging adult children marked by parents' excessive involvement, assistance, and control (Padilla-Walker and Nelson 2012; Segrin et al. 2012). This seemingly affectionate parenting practice was found to be harmful to emerging adults' adjustment and functioning. For example, helicopter parenting was associated with higher levels of anxiety and depressive symptoms and perceived stress (Cui 2017; Segrin et al. 2013), greater use of medication for anxiety and depression (LeMoyne and Buchanan 2011), and lower life satisfaction (Cui et al. 2018; Schiffrin et al. 2014) among college students. A few studies have further explored the mechanisms linking

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helicopter parenting to college students' psychological maladjustment. Several potential mediating factors have been identified (e.g., self-efficacy, Reed et al. 2016). Such research efforts, however, remain scarce. Much less is known about other potential mechanisms.

Self-control is one of these potential links worth exploring. Self-control is defined as the capacity to voluntarily resist immediate rewards (e.g., delay of gratification) or suppress an undesirable impulse that conflicts with one's long-term goals, manifesting itself as a motivational and goal-directed behavior (Mischel et al. 1989). Self-control plays an important role as emerging adults head for a progressively independent life, especially among college students. Making the transition to adulthood, emerging adult college students need to substantially rely on self-control to manage their academic challenges, finances, social commitments, and health issues. Failure to meet these social adaptive goals would entail negative consequences for psychological adjustment (Ferdinand and Verhulst 1995).

Self-determination theory (SDT; Ryan and Deci 2000) could help explain why helicopter parenting could be related to emerging adults' psychological maladjustment and that the association could be mediated through a lower level of self-control. According to SDT, interpersonal contexts that thwart satisfaction of three basic psychological needs—autonomy, competence, and relatedness—will adversely affect individuals' psychological, developmental, and behavioral outcomes (Ryan and Deci 2000). Helicopter parenting promotes an interpersonal context that is in conflict with emerging adults' increasing needs for autonomy and competence. Specifically, characterized by psychological control and limited autonomy-granting, helicopter parenting may hamper autonomous motivation (i.e., make one's decisions reflecting authentic values) and facilitate controlled motivation (i.e., behave in a way demanded by external pressure or demand). As a result, helicopter parenting would directly impair emerging adults' volitional functioning and sense of autonomy. Also, by providing excessive assistance and anticipatory problem solving, helicopter parents implicitly convey negative feedbacks to emerging adult children, suggesting that they are not competent and unable to tackle problems on their own. Consequently, these implicit messages would undermine emerging adult children's sense of competence and control. Indeed, one of SDT's central tenets is that controlling, as opposed to autonomy-supportive, social contexts tend to undermine self-determined motivation and autonomous regulation, which are closely related to self-control (Converse et al. 2018; Moller et al. 2006).

Further, both conceptual and theoretical groundings suggest that lower self-control is related to psychological maladjustment. Conceptually, central to self-control failure is yielding to temptation of immediate gratification, which hinders the attainment of long-term adjustment goals for the more valued emotional, behavioral or cognitive outcomes (Tangney et al. 2004). Theoretically, SDT acknowledges the importance of intrapersonal processes "to the extent that the individual has sufficient inner resources" for determining the autonomous motivation and well-being (Deci and Ryan 2000, p. 229). Self-control is identified as an essential "inner resource" that contributes to psychological adjustment by facilitating goal-conflict management, goal-pursuit success, and optimal fit between self and environment (de Ridder et al. 2012). Conversely, deficiency in self-control is frequently related to maladjustment and mental turmoil (Baumeister et al. 1994).

Taken together, self-control may serve as a mediating mechanism through which helicopter parenting is associated with college students' psychological maladjustment. Evidence showed that individual differences in self-control strongly predict a broad array of life outcomes, covering physical and mental health, social adjustment, interpersonal relationships, academic performance and perseverance, occupational prestige, alcohol and substance use, weight control, as well as violence and criminal conviction (Duckworth and Gross 2014; Gottfredson and Hirschi 1990; Moffitt et al. 2011; Tangney et al. 2004). Further, the role of parenting in the socialization of self-control is well established (Hay 2001; Spinrad et al. 2007; Vazsonyi and Huang 2010). Notably, self-control theory (Gottfredson and Hirschi 1990) ascribed the principal cause of low self-control to ineffective parenting, suggesting parenting plays a decisive role in either fostering or thwarting the development of self-control. These findings suggested that low self-control could play a mediating role between ineffective parenting and emotional and behavioral problems.

Studies of parenting in general and of population of children and adolescents provided support that self-control mediated the association between parenting and children's and adolescents' outcomes (Finkenauer et al. 2005; Hay 2001). This body of research, however, has barely focused on emerging adult children and helicopter parenting in particular. In fact, self-control could play a critical part for college students promoting a progressively independent life (Perry et al. 2001). To advance independence and autonomy, college students have to actively exert self-control on tackling various demands, such as meeting academic and financial challenges, living a healthy lifestyle, and managing social relationships. At the same time, parents continue socializing self-control as their children grow into emerging adults (Arnett 2007). Evidence from neuroscience and longitudinal studies has shown that self-control develops into the mid-20s or even later (Burt et al. 2014; Johnson et al. 2009). In this developmental phase, prefrontal cortex that charges impulse control of social behavior is undergoing restructuring and is particularly open to

environmental input (Andersen 2003; Taber-Thomas and Perez-Edgar 2015). Parenting is still an important environmental input during emerging adulthood (for a review, see Aquilino 2006). In one of the few studies of emerging adults, Cui et al. (2019) found that self-regulation mediated emerging adult-reported indulgent parenting and their emotional and behavioral problems.

Recently, with a record-breaking proportion (32.1%) of young adults age 18–34 living in their parents' home, the phenomenon of college students living at home has become increasingly common (Pew Research Center 2015, 2017). Indeed, diverse living arrangements are a distinctive demographic characteristic reflecting the exploratory nature of emerging adulthood (Arnett 2000). Emerging adulthood is conceptualized as a prolonged phase from late teens throughout the 20s (e.g., 18–29), a life stage before landing on full adulthood (Arnett 2000). During this stage, emerging adults explore a wide scope of experiences and possibilities, which are often accompanied by demographic diversity, especially various living arrangement (Arnett 2000). In particular, two general forms of living arrangement among college students—living with parents and living away from parents—could serve as important contexts for examining the relations between helicopter parenting and college students' psychological maladjustment.

A focus on living arrangement is consistent with Bronfenbrenner's ecological perspective (Bronfenbrenner and Morris 2006) that the interplay of personal traits (e.g., self-control), family process (e.g., parenting), and context (e.g., living arrangement) determines emerging adult children's psychological development. The context could have differential effects on the relationship between family process and emerging adults' development. Specifically, the magnitude of the association between helicopter parenting and college students' psychological maladjustment may vary by college students' living arrangement. Helicopter parenting may have a stronger direct effect on the psychological outcome of college students who are living at home. When emerging adults live away from their parents (e.g., going away to college), the direct impact of their parents' over-involvement could be mitigated to some degree as emerging adults have some freedom in making their own decisions and assuming adult responsibilities.

Compared with those living away from parents during college years, issues with emotional boundaries, physical privacy, and parental intrusiveness could be more salient among college students living with their parents (Aquilino 2006). For parents, the daily presence of their children in the home could be a temptation for them to be closely involved in their children's affairs (Arnett 2007). In such context, helicopter parents may have more problems adapting their parenting behaviors to balance closeness and autonomy-granting, making connectedness among family members too strong and boundaries too vague (Segrin et al. 2015). According to family system theory (Minuchin 1974), such enmeshed family environment would have a negative effect on children's adjustment and well-being. Indeed, prior research found that helicopter parenting was more common for living-at-home college students (Bradley-Geist and Olson-Buchanan 2014). And emerging adults living with their parents reported more depressive symptoms and lower life satisfaction (Kins et al. 2009). Despite the presumed importance of living arrangement during this developmental stage, little is known about the role it plays in the association between helicopter parenting and college students' psychological outcomes.

The college student population was our main focus concerning helicopter parenting. Compared to their non-college counterparts, college students might be particularly susceptible to the negative impacts of helicopter parenting. Given college students' prolonged education and delayed transition to self-sufficient adulthood, parents continue playing an active role in their lives (Guan and Fuligni 2016). Indeed, parental support of adult children has increased markedly over the past four decades, regardless of parents' socioeconomic status (Fingerman et al. 2015). Parents may routinely provide financial, practical, and emotional support, coupled with advice and companionship as their children mature into adulthood (Fingerman et al. 2012), especially parents of college students (Swartz et al. 2011). Thus, parenting practices including helicopter parenting may maintain salient influence on college students' outcomes.

The purpose of this study was to investigate *how* and *under what condition* helicopter parenting could be associated with college students' psychological maladjustment. Specifically, the present study sought to expand the literature by specifying the mechanisms underlying and circumstances surrounding the association between helicopter parenting and college students' psychological maladjustment by considering self-control as a potential mediator and living arrangement as a potential moderator. On the basis of theories and prior research, we hypothesized that higher levels of helicopter parenting would be associated with more college students' psychological adjustment problems (anxiety, depression, and low life satisfaction) through lower self-control (H1: the mediating hypothesis). We also hypothesized that the magnitude of the positive association between helicopter parenting and psychological maladjustment would be stronger among living-at-home college students than students who were living away from parents (H2: the moderating hypothesis). A sample of 432 emerging adult college students was used in the present study. Several control variables were included in the analyses, including college students' gender, age, race and ethnicity, family income, and family structure. These factors have been shown to be related to helicopter parenting and emerging

adults' outcomes (gender, Kouros et al. 2017; race and ethnicity, Lanza et al. 2013; family structure, Repetti et al. 2002; family socioeconomic status, Nelson 2010).

Method

Participants

The participants in this study were undergraduate students from two large southern universities in the U.S. For the purpose of this study, the analytical sample was limited to emerging adult college students aged 18 to 29 ($N = 432$, M *age* $= 20.21$). The sample comprised students across years in college: freshmen (27.5%), sophomores (35.8%), juniors (13.4%), and seniors (20.1%). The majority were female (89.6%), Caucasian/White (83.8%), and non-Hispanic (67.1%). Less than a third of the sample (29.4%) reported family income below $50,000. Two-thirds (67.1%) were from two-parent families. For living arrangement, 74.2% of students reported they were living away from their parents.

Procedures

College students were recruited from introductory courses offered by colleges of human sciences and social sciences in the targeted universities, where the majority of students were female. Of 712 undergraduate students in these classes, 449 participated (63% response rate). Extra credits were offered for participation. The participants were asked to complete a battery of self-report questionnaires via an online survey. The instruments included their parents' helicopter parenting behaviors, their self-control, symptoms of anxiety and depression, life satisfaction, living arrangement, and other demographics. To focus on emerging adults (age 18–29), the sample was further reduced to a final sample of 432 emerging adult college students.

Measures

Helicopter parenting

The five-item over-parenting scale (Bradley-Geist and Olson-Buchanan 2014) was used to assess participants' perceptions of their mother's and father's helicopter parenting behaviors. Sample items included "I think my mother/father is too overly involved in my life," and "I feel like my mother/father sometimes smother me with her/his attention." The five-point response ranged from 1 = *strongly disagree* to 5 = *strongly agree*. Scores for the items were summed with higher scores indicating higher levels of helicopter parenting. Internal consistency coefficients for mothers ($\alpha = 0.86$) and fathers ($\alpha = 0.89$) were adequate.

Self-control

The thirteen-item Brief Self-Control Scale (Tangney et al. 2004) was used to assess general trait self-control. Participants were asked to report to which degree each item described them. Sample items included "people would say that I have iron self-discipline," and "sometimes I can't stop myself from doing something, even if I know it is wrong." The five-point response ranged from 1 = *not at all like me* to 5 = *very much like me*. Some items were reverse-scored. Scores for the items were summed with higher scores indicating higher levels of self-control. Internal consistency ($\alpha = 0.84$) was adequate.

Psychological maladjustment

A latent variable of psychological maladjustment was created with three indicators: symptoms of depression, anxiety, and low life satisfaction. *Depressive symptoms* were assessed with the ten-item version of the Center for Epidemiological Studies Depression Scale (Radloff 1977; Irwin et al. 1999). Sample items included "I felt that everything I did was an effort," and "I felt depressed," with a four-point response ranging from 1 = *rarely or none of the time (less than 1 day)* to 4 = *most or all of the time (5–7 days)*. Some items were reverse-scored. Item scores were summed with higher scores suggesting more depressive symptoms ($\alpha = 0.79$). *Anxiety* was assessed with the ten-item version of the Beck Anxiety Inventory (Beck et al. 1988). Sample items included "fear of worst happening," and "hot/cold sweats," with a four-point response ranging from 0 = *not at all* to 3 = *severely—it bothered me a lot*. The scores were summed, and higher scores indicated greater symptoms of anxiety ($\alpha = 0.88$). *Low life satisfaction* was assessed with the five-item Satisfaction with Life Scale (Diener et al. 1985). Sample items included "In most ways my life is close to my ideal," and "I am satisfied with my life," with a seven-point response ranging from 1 = *strongly disagree* to 7 = *strongly agree*. Scores for the items were summed and reversed-coded with higher scores indicating lower levels of life satisfaction ($\alpha = 0.91$). Measurement model suggested that the three indicators loaded well on the latent construct, supporting the underlying construct of psychological maladjustment (Kline 2005). Prior studies have also used these three indicators to capture psychological maladjustment among college students (e.g., Asberg et al. 2008; Cui et al. 2019).

Living arrangement and covariates

Participants were asked to report whether they were currently living with parents (1 = *living with parents* and 0 = *living away from parents*). Covariates included participants' gender, age, race/ethnicity, family income, and family

structure. *Gender* was coded as 1 = *male* and 2 = *female*. *Age* was measured in years. *Race/ethnicity* was dichotomized as 1 = *White* and 0 = *other*. *Family socioeconomic status* was assessed with annual family income (from 1 = *below $30,000* to 4 = *$100,000 and above*). *Family structure* was dichotomized as 1 = *two-parent families*, 0 = *other*.

Data Analysis

Preliminary analyses using independent t-test and chi-square test were conducted on the final sample ($N = 432$) to evaluate whether students with ($N = 54$) and without ($N = 378$) missing data differed on available variables. Second, means and standard deviations for all study variables as well as the correlations among key variables were presented. Third, structural equation modeling (SEM) in Mplus was used to test our hypotheses. Model fit was evaluated based on the following goodness of fit indices: Comparative Fit Index (CFI) > 0.90, Root Mean Square Error of Approximation ($RMSEA$) < 0.08, and P of Close Fit (Pc) > 0.05 (Kline 2005). For the mediating hypothesis (H1), a bootstrapping procedure was performed based on 1000 resamples. To test the moderating hypothesis (H2), multi-group SEM model comparison between living-at-home group and living-away-from-parents group was conducted. Chi-square changes were examined to determine whether the direct paths significantly differed for living-at-home students versus living-away students.

Results

Results from independent t-test and chi-square test indicated that students with incomplete data in the final sample were slightly older ($t(420) = -3.37$, $p < 0.01$) and were more likely to be non-white ($\chi^2(1) = 6.09$, $p < 0.05$). No other differences were found. Full Information Maximum Likelihood (FIML) was used to compute maximum likelihood estimates and standard errors, which provided less biased information than listwise deletion (Schafer 1997).

Table 1 provides descriptive results of the sample. Means, standard deviations, minimum and maximum were provided for continuous variables; percentages were provided for categorical variables. In addition, mean differences between maternal and paternal helicopter parenting were compared by paired t-tests. The comparison showed participants reported significantly higher levels of maternal helicopter parenting than paternal helicopter parenting ($t(383) = 4.00$, $p < 0.001$, Italicized in Table 1).

Table 2 provides the correlations for key variables used in hypotheses testing. The correlations revealed several findings. First, in general, both parents' helicopter parenting were significantly correlated with symptoms of depression, anxiety, and low life satisfaction in expected directions (e.g., $r = 0.12$, $p < 0.05$ between maternal helicopter parenting and depressive symptoms). Second, maternal and paternal helicopter parenting were also negatively correlated with self-control ($r = -0.14$, $p < 0.01$ for both parents). Third, self-control was negatively correlated with symptoms of depression, anxiety, and low life satisfaction in the expected direction (e.g., $r = -0.46$, $p < 0.01$ between self-control and depressive symptoms). Finally, maternal and paternal helicopter parenting were significantly correlated ($r = 0.33$, $p < 0.01$).

Table 1 Descriptive information on the sample and study variables

Variables	*M or %*	*S.D.*	*Min.*	*Max.*
Maternal Helicopter Parenting	*10.34*	4.06	5	25
Paternal Helicopter Parenting	*9.31*	4.15	5	25
Self-control	45.87	8.80	19	65
Psychological Maladjustment				
Depressive Symptoms	19.62	5.15	10	38
Anxiety Symptoms	8.70	6.20	0	30
Low Life Satisfaction	24.91	6.86	5	35
Demographics				
Gender (Female)	89.6%			
Age	20.21	2.32	18	29
Race (White)	83.8%			
Family Income				
Below 30 k	12.9%			
30 k-below 50 k	16.5%			
50 k-below 100 k	35.9%			
100k & above	34.7%			
Family Structure (Two-parent Family)	67.1%			
Living Arrangement (Live away from Parents)	74.2%			

Italicized numbers indicate pairs of significant differences between maternal helicopter parenting and paternal helicopter parenting based on paired t-tests, $p < 0.01$, $N = 432$

To test the mediational hypothesis that the association between helicopter parenting and college students' psychological maladjustment was mediated by self-control (H1), SEM with FIML estimation method was used (Kline 2005). Covariates (i.e., gender, age, race, family income, and family structure) were included in the model and their effects on outcomes were tested. For reason of parsimony, covariates with non-significant paths were removed from the final model. As a result, only family structure was included in the final model. No other model modifications were made.

Figure 1 shows the results of the final mediating model. The Chi-square was 17.06 with eight degrees of freedom. *CFI* was 0.98, *RMSEA* was 0.05, and *Pc* was 0.43. These fit

Table 2 Correlations among key variables

Variables	1	2	3	4	5	6
1. Maternal Helicopter Parenting	1.00					
2. Paternal Helicopter Parenting	0.33**	1.00				
3. Self-control	−0.14**	−0.14**	1.00			
4. Depressive Symptoms	0.12*	0.15**	−0.46**	1.00		
5. Anxiety Symptoms	0.08	0.13**	−0.27**	0.60**	1.00	
6. Low Life Satisfaction	0.17**	0.11*	−0.29**	0.52**	0.28**	1.00

Two-tailed test. $N = 432$

**$p < 0.01$, *$p < 0.05$

indices all suggested a reasonable fit of the model to the data. Both parents' helicopter parenting were negatively associated with college student's self-control ($b = -0.10$, $p < 0.05$ for both parents). Self-control was negatively associated with the latent construct of psychological maladjustment ($b = -0.50$, $p < 0.01$). The direct paths from maternal and paternal helicopter parenting to psychological maladjustment were no longer significant.

Indirect effects were then tested from maternal and paternal helicopter parenting to college students' psychological maladjustment, based on 1000 bootstrapping resamples. Results indicated that self-control mediated the link between maternal helicopter parenting and maladjustment, $b = 0.04$, $se = 0.03$, 95% CI [0.003, 0.123], and the link between paternal helicopter parenting and maladjustment $b = 0.04$ $se = 0.03$, 95% CI [0.005, 0.124]. These findings suggested self-control mediated the paths from both maternal and paternal helicopter parenting to psychological maladjustment, thus supporting the mediation hypothesis (H1). Regarding the covariates, family structure was significantly and negatively associated with maladjustment ($b = -0.13$, $p < 0.01$), suggesting that students from two-parent families reported significantly lower levels of psychological maladjustment, as compared with those from other types of family structure.

Next, the moderating effect of living arrangement was tested (H2). Model comparisons were conducted between those living with their parents ($N = 112$) and those away from their parents ($N = 320$). Chi-square changes were examined. The paths from maternal and paternal helicopter parenting to psychological maladjustment were significantly different ($\Delta\chi^2(1) = 6.72$, $p < 0.05$ for mothers, and $\Delta\chi^2(1) = 3.53$, $p < 0.10$ for fathers). Specifically, for those living together with their parents, the direct paths from helicopter parenting to psychological maladjustment ($b = 0.29$, $p < 0.01$ for mothers; $b = 0.24$, $p < 0.05$ for fathers) were significantly stronger than the paths for those living away from their parents ($b = -0.01$, $p = 0.84$ for mothers and $b = 0.04$, $p = 0.49$ for fathers), thus supporting the moderation hypothesis (H2).

Discussion

In view of helicopter parenting becoming increasingly common, it is essential to identify its potential impact on emerging adults' psychological adjustment and to understand how and under what circumstances it has such an effect. Meanwhile, college students' psychological maladjustment is on the rise, and it is important to investigate whether helicopter parenting is related to these problems, if yes, what mechanisms are involved. Such an inquiry is limited in the extant literature, which is disproportionate to the phenomenon of such rising problems. The present study contributed to this body of work by unveiling possible mechanisms via examining the mediating effect of college students' self-control and the moderating effect of living arrangement on the association between helicopter parenting and college students' psychological maladjustment. Both hypotheses were supported. In line with SDT and family system theory, we found that (1) helicopter parenting was positively associated with college students' psychological maladjustment through lower self-control, (2) in comparison with students who were living away from their parents, helicopter parenting had a stronger direct association with psychological maladjustment for those living with their parents.

Little research effort has been made on the role of self-control among children beyond adolescent years and helicopter parenting in particular. To meet the various challenges they have to face, emerging adults have to actively exert self-control (Arnett 2007). At the same time, during this stage, parenting still plays an important part in emerging adult children's lives (Aquilino 2006). With the increasingly common practice of helicopter parenting of emerging adult children (Lythcott-Haims 2015; Padilla-Walker and Nelson 2012), research that looks into the role of self-control in the association between helicopter parenting and college students' adjustment and well-being is needed. The findings from this study suggested that self-control could play a critical part in the association between helicopter parenting and psychological maladjustment for college students.

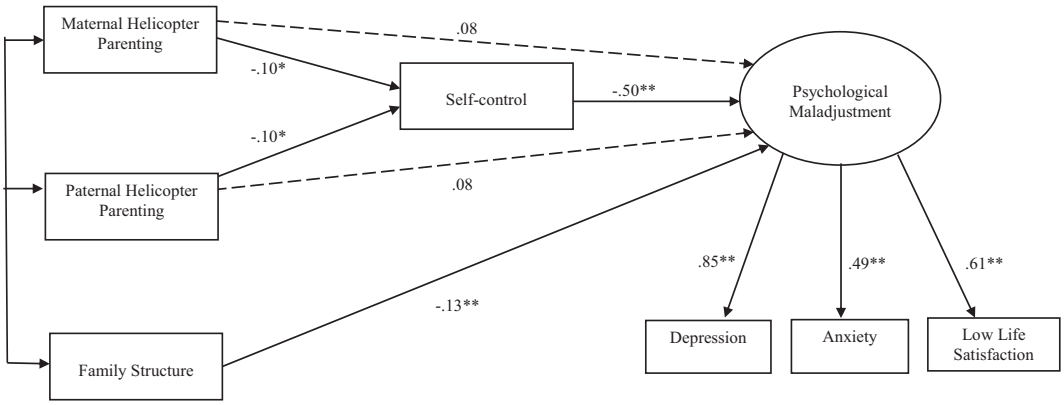

Fig. 1 Results for the mediation model of helicopter parenting, self-control, and college students' psychological maladjustment. Standardized coefficients were reported. Dashed lines suggested non-significant paths

According to the strength model of self-control (Baumeister et al. 2007), in the context of helicopter parenting, emerging adults could lose opportunities of practicing their self-control by routinely outsourcing self-control to their parents. Fitzsimons and Finkel (2011) found that thinking about significant other who could help with a given goal undermines individuals' motivation to exert effort on that goal. It suggested that emerging adults who are used to high levels of parental assistance might outsource effortful control to their parents, rely on parents for obtaining goals, and consequently, spend less effort themselves. With fewer opportunities and motivation to develop adequate self-control, college students could experience psychological maladjustment as they fail or feel incompetent to handle various challenges on their own. Poor self-control may undergird these problems (Graham and Bray 2015). Our findings extended earlier research by connecting helicopter parenting and college students' emotional problems and identifying low self-control as an important linking mechanism.

Our finding that the pathways from helicopter parenting to psychological maladjustment differed by living arrangement highlighted the importance of considering contexts as we explore the associations. Consistent with expectations, our results showed, for living-at-home college students, helicopter parenting had a strong direct and positive association with psychological maladjustment, whereas the direct association was not significant among those living away from their parents. This finding suggested that the direct association between helicopter parenting and college students' psychological adjustment problems became more salient when helicopter parenting was a more proximal environment for college students who remained at home. When emerging adults remain under their parents' roof, parents could easily and conveniently access their children's everyday life, and parental intrusiveness could be more prominent (Aquilino 2006). As a result, parents have more difficulties balancing monitoring and autonomy-granting and have more opportunity to be overinvolved in their emerging adult children's lives, which could become overbearing. Further, such context may create an enmeshed family environment (e.g., boundaries too vague, Segrin et al. 2015), and according to family system theory, would have more negative effects on children's psychological well-being (Minuchin 1974). It is worth noting that though the direct effect of helicopter parenting on psychological maladjustment was not statistically significant among students who live away from parents, its indirect effect through self-control was. Helicopter parenting, therefore, is still relevant for living-away students' psychological maladjustment.

Limitations and Future Research

Despite the contribution to further understanding of helicopter parenting and its association with college students' adjustment problems, our findings should be viewed with several limitations. First, the study was cross-sectional and therefore we should take caution to interpret the directions of the observed patterns. The association might be a bidirectional process. Longitudinal research is therefore needed to examine the dynamic interplay of helicopter parenting, self-control, living arrangement, and psychological maladjustment. Second, the data were drawn from a sample of college students who were predominately female and Caucasian; thus, the results may not generalize to the broader college student populations. Emerging adults from other racial/ethnic groups might experience different patterns of helicopter parenting (Scharf et al. 2017) and distinct socialization process of self-control. Cultural norms might also moderate the link between helicopter parenting and psychological maladjustment (Kwon et al. 2016). This line of work is an important direction for future research. Third, it is worth noting that the living-at-home students account

for about a quarter of the sample. As a result, the moderating tests were performed with unbalanced subsample sizes. Future research is needed with more living-at-home students to explore this living arrangement difference. Fourth, the measures were self-reported by college students. Because of the limitations accompanied with self-report (Cui et al. 2005), the associations could be inflated. Future research should use multi-heterogeneous methods to operationalize the constructs in this study. Finally, the effect sizes of the mediating effects of self-control reported in this study were relatively small. However, small effects do not necessarily suggest trivial effects (Cui et al. 2007; Rosenthal and Rubin 1979), especially when such effects are situated along an ongoing process that is related to the adjustment of individuals during prolonged emerging adulthood. In view of parents and family contexts continue linking closely to college students' lives and well-being (Aquilino 2006), the observed small effects may have an important practical impact on college students' adjustment and well-being as they play out over time.

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Author Contributions P.H.: performed data analyses and wrote the paper. M.C.: designed and executed the study, assisted with data analyses and manuscript editing.

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Compliance with Ethical Standards

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

Ethical Approval All procedures performed in this study involving human subjects were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. This study was approved by the Institutional Review Board (IRB) of Florida State University and Florida International University.

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

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