



Assessing the psychometric properties of mother and father forms of the helicopter parenting behaviors questionnaire in a Turkish sample

Burcu Kömürçü-Akik¹ · Cansu Alsancak-Akbulut¹

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Abstract

Helicopter parenting is defined as the behaviors of parents that include over-responsibility, control, and protection towards the life of their children. Helicopter parenting is a relatively new phenomenon in the literature and has a significant role in the lives of adolescents and emerging adults. Therefore, several self-reports assessing helicopter parenting have been developed and tested recently. One of these self-reports, the Helicopter Parenting Behaviors Questionnaire (HPBQ), was developed by Schiffrin et al. (2014) to evaluate perceived helicopter parenting and autonomy supportive behaviors of mothers. The current study aimed to examine the psychometric properties of the Turkish version of the HPBQ. The scale was also adapted separately for assessing perceived maternal and paternal helicopter parenting behaviors in the Turkish sample. Three hundred twenty-four college students ($N_{female} = 165$, $N_{male} = 157$), aged between 17 and 27 years ($M = 20.57$, $SD = 1.99$), filled in HPBQ - Mother and Father Forms, Helicopter Parenting Instrument (HPI), Behavioral Control Scale-Youth Self Report (BCS-YSR), and Depression Anxiety Stress Scale (DASS). Results showed that the original two-factor structure (helicopter parenting and autonomy supportive behaviors) of the Mother and Father Forms of HPBQ are supported, and independent confirmatory factor analyses (CFA) indicated that the two-factor structure of the questionnaire fits the data reasonably well. The Turkish version of HPBQ demonstrated convergent and divergent validity, as well as satisfactory internal consistency. The two forms of the questionnaire allow us to evaluate differences between maternal and paternal parenting styles in helicopter parenting and conduct cross-cultural research.

Keywords Helicopter parenting · Autonomy supportive parenting · Confirmatory factor analysis · Validity · Reliability

Helicopter parenting, which was first used by Cline and Fay (1990), is a relatively new phenomenon in the literature. Helicopter parenting was used to define parental behaviors like over-involving and hovering in their emerging adult children's lives (Padilla-Walker & Nelson, 2012; Schiffrin et al., 2014). Helicopter parenting is characterized by higher levels of support and warmth, but lower levels of autonomy granting behaviors (LeMoyne & Buchanan, 2011; Padilla-Walker & Nelson, 2012; Segrin et al., 2013). Helicopter parenting behaviors may include attending classes with their child during the first week of school, contacting professors or administrators when the child gets a lower-than-expected grade, removing obstacles that the child encounters, intervening in the child's affairs and

roommate disputes, and participating in their child's job interview (Gabriel, 2010; LeMoyne & Buchanan, 2011; Marano, 2010; Padilla-Walker & Nelson, 2012; Segrin et al., 2012; Somers & Settle, 2010a). Helicopter parenting usually includes parents' over-involving or over-controlling behaviors in their children's lives by managing their personal and professional lives (LeMoyne & Buchanan, 2011), which seems to continue throughout and after college years (Bernstein & Triger, 2010).

Given the involvement of parents in their children's lives in controlling, overprotective, and affectionate ways (Padilla-Walker & Nelson, 2012), helicopter parenting seems to share some overlaps with parental control, especially with psychological and behavioral control. However; helicopter parenting also has some distinctions from psychological and behavioral control (Padilla-Walker & Nelson, 2012). For instance, psychological control often involves parental manipulation of children's thoughts and emotions (Reed et al., 2016; Soenens & Vansteenkiste, 2010). As opposed to this, helicopter parenting does not seem to involve parents' manipulation

✉ Cansu Alsancak-Akbulut
cakbulut@ankara.edu.tr

¹ Department of Psychology, Faculty of Languages History and Geography, Ankara University, Sıhhiye, 06100 Ankara, Turkey

of their children's thoughts and emotions (Gabriel, 2010; Padilla-Walker & Nelson, 2012). Furthermore, unlike behaviorally controlling parents, helicopter parents limit their children's autonomy as well as support their children and use warmth (Padilla-Walker & Nelson, 2012). Therefore, helicopter parenting emerges as a factor separate from parents' behavioral control and psychological control (Padilla-Walker & Nelson, 2012).

On the other hand, when it comes to helicopter parenting autonomy supportive parenting should also be mentioned. Autonomy supportive parenting appears to be mutually exclusive with helicopter parenting. In other words, helicopter parenting and autonomy supportive parenting are independent constructs that can be observed simultaneously (Kouros et al., 2017; Vansteenkiste & Ryan, 2013). Autonomy supportive parenting involves encouraging the children's independence and capacity to make decisions, as well as solve problems in an active way (Grolnick & Ryan, 1989; Soenens et al., 2007). Autonomy supportive parenting is operationalized as an effective parenting practice that is associated with positive child outcomes (Soenens et al., 2007). For instance, parents' higher level of autonomy supportive behaviors predicts optimal developmental outcomes for adolescents (Kocayörük et al., 2015; Soenens & Vansteenkiste, 2005). Specifically, studies showed that autonomy support is related to higher self-esteem and lower levels of depressive symptoms (Cullaty, 2011; Jackson et al., 2005; Lekes et al., 2010; van der Giessen et al., 2014).

Previous studies demonstrated that helicopter parenting appears to be related to both negative and positive developmental outcomes (Padilla-Walker & Nelson, 2012; Shoup et al., 2009). Studies showed that helicopter parenting is associated with higher levels of anxiety and depression (Schiffrrin et al., 2014; Segrin et al., 2013), more medication use for these problems among college students, as well as lower levels of psychological well-being (LeMoyne & Buchanan, 2011) and lower levels of satisfaction with life (Schiffrrin et al., 2014; Segrin et al., 2012). Similarly, helicopter parenting was linked to mental health problems of children, including internalizing problems and difficulties in dealing with life and its stressors (Hofer & Moore, 2010; Marano, 2008). Even though there are accumulative findings relating helicopter parenting to negative outcomes, it is also related to positive developmental outcomes, such as higher satisfaction and engagement with the college experience (Center for Postsecondary Research School of Education, 2007; Fingerman et al., 2012).

The difference in helicopter parenting outcomes appears to depend on the level of parental involvement and control, as well as children's developmental needs. During the early and middle childhood years, parental involvement is linked with positive emotional, behavioral, and academic outcomes (Bradley-Geist & Olson-Buchanan, 2014; Day & Padilla-Walker, 2009; El Nokali et al., 2010; Schiffrrin et al., 2014).

Conversely, high levels of parenting control (behavioral and psychological control) are linked to negative outcomes (e.g. Bean et al., 2006; Hart et al., 2003; Kwon et al., 2016; Nelson et al., 2011). From a developmental perspective, as children grow older, especially during transitioning to college, their need for autonomy and self-reliance increases (Schiffrrin et al., 2014). They are expected to leave home, adapt autonomously in their daily lives, and take an active role in solving their problems (Grolnick et al., 1991). Although they are well-intended, helicopter parents may not let their child make their own decisions which possibly may lead to prevent them learn to take responsibility for their own decisions, learn from their choices, and fix their problems. In this sense, these parents do not fulfill their child's basic psychological and developmental needs that are appropriate for their age, such as autonomy, competence, and relatedness (Schiffrrin et al., 2014). Further, accumulating evidence showed that helicopter parenting during emerging adulthood is related to lower levels of self-efficacy (Bradley-Geist & Olson-Buchanan, 2014; Givertz & Segrin, 2014; Odenweller et al., 2014; van Ingen et al., 2015) and self-confidence (Padilla-Walker & Nelson, 2012), as well as conformity orientation and dependency on others (Odenweller et al., 2014). Therefore, parents should modify their behaviors, especially their involvement in the life of their children depending on their changing developmental needs. In this respect, helicopter parents seem not to act sensitively to the developmental needs of their children, especially during college years (LeMoyne & Buchanan, 2011; Padilla-Walker & Nelson, 2012). At this point, it is important to assess accurately how helicopter parenting was perceived by emerging adults and to what extent helicopter parenting is functional or dysfunctional in this developmental period.

Evaluation of helicopter parenting by using a newly developed, reliable, and valid instrument would advance scientific knowledge. Thus, various scales have been developed and used to measure this construct. For example, van Ingen et al. (2015) used the overprotection subscale of the Parental Bonding Instrument, and Padilla-Walker and Nelson (2012) assessed helicopter parenting as the degree to which parents make important decisions for their children. Furthermore, Helicopter Parenting Scale (LeMoyne & Buchanan, 2011) and Helicopter Parenting Instrument (Odenweller et al., 2014) were developed. Due to the conceptual and statistical limitations of these scales, Helicopter Parenting Behaviors Questionnaire (HPBQ) was formed by Schiffrrin et al. (2014) to evaluate college students' perceived maternal helicopter parenting and autonomy support by generating items related to specific behaviors of these constructs reported in the literature. HPBQ consists of 15 items and two factors, which are helicopter parenting behaviors and autonomy supportive behaviors. Psychometric examinations of the two-factor structure of the questionnaire showed that HPBQ is a reliable and valid measurement (Reed et al., 2016; Schiffrrin et al., 2014).

There is a limited number of studies on helicopter parenting (e.g., Okant-Yaşın, 2018) and attempts to develop or adapt an instrument to measure helicopter parenting behaviors on college students in Turkey (e.g., Dogan & Adiguzel, 2017; Ertuna, 2016; Yılmaz, 2019). Since this scale provides a distinct view of helicopter parenting by including concrete behavioral items, we adapted HPBQ into Turkish. Given that reliable and valid scales across cultures highlight the features of the construct that are examined and their importance (Miguel et al., 2016), examining the psychometric properties of HPBQ is important in identifying the tenets of helicopter parenting in Turkey.

Fathers have been more involved in child-rearing practices in recent years (see Kim & Hill, 2015 for a review) and they are important figures for their young adult children during their development (Amato, 1994; see Sarkadi et al., 2007 for a review). Indeed, Flouri and Buchanan (2003) showed that father involvement contributed to the child's well-being independently from and more than the involvement of mothers. However, as far as we know, there is still a huge gap in the studies evaluating paternal helicopter parenting in the literature. One study examined the association between paternal helicopter parenting and emerging adult's well-being (Schiffirin et al., 2019), and reported that emerging adults perceive their mothers as having higher levels of helicopter parenting as compared to fathers. Another study conducted on a sample of female college students showed that maternal helicopter parenting was significantly higher than paternal helicopter parenting, maternal and paternal helicopter parenting were highly related to each other, and both maternal and paternal helicopter parenting were significantly and negatively associated with psychological needs satisfaction and self-control (Cui et al., 2019). Still, future research is needed to explore perceived paternal helicopter parenting and develop new instruments for assessment. The original version of HPBQ was designed to assess college students' perceived maternal helicopter parenting behaviors. Kouros et al. (2017) modified the questionnaire for both parents without differentiating maternal and paternal helicopter parenting. In the current study, the Father Form of the HPBQ was reformed by specifying the wording of the scale and its psychometric properties were assessed. Therefore, this study represents the first attempt to assess perceived paternal helicopter parenting behaviors using HPBQ.

Taken together, this study aims to examine the psychometric properties of HPBQ in a sample of college students. The scale was adapted both for perceived maternal and paternal helicopter parenting and autonomy supportive behaviors. The two-factor structure of HPBQ was tested using confirmatory factor analysis for both the Mother and Father Forms. Correlations between the subscales of HPBQ and HPI, behavioral control, depression, stress, and anxiety were also performed to provide evidence of its convergent and divergent

validity. Investigating the factor structure of HPBQ in a Turkish sample will underscore its cross-cultural utilization and cross-cultural comparisons in the helicopter parenting construct, which facilitate research in helicopter parenting.

Method

Participants

For the present study, 350 college students were sampled to assess perceived helicopter parenting in Turkey. Twenty participants, who had lost their mother and/or father, were excluded to minimize the potential confounding effects. The data were screened for outliers and six participants were also excluded from the study. Final sample included 324 college students, aged between 17 and 27 years ($M = 20.57$, $SD = 1.99$). Of the participants 165 females (50.9%), and 157 males (48.5%). Two of the participants did not indicate their gender. A summary of the descriptive characteristics of the participants is presented in Table 1.

Procedure

Approval from the Ethics Committee of Ankara University and permission for translating the HPBQ into Turkish from the corresponding author in the original study were obtained (Schiffirin et al., 2014). The authors of this study translated the items into Turkish by giving careful attention to language suitability and semantic equivalence to prevent discrepancies in the content and meaning of the items in the original form and translated form (Schmidt & Bullinger, 2003). A conceptual translation was implemented rather than a literal translation to achieve the most suitable translation to retain original item meanings. In addition, the Father Form was formed by specifying the wording of the items for fathers. Then, the adequateness of the translation process and language use were evaluated and the most suitable translation was achieved by the authors of this study (Hambleton & Bollwark, 1991; van de Vijver & Hambleton, 1996). Afterward, maintaining the culture-sensitive approach, three researchers, who were experts in both Turkish and English languages and familiar with the subject terminology, evaluated the items in terms of conceptual, semantic, and operational equivalence (Hui & Triandis, 1985). Based on the feedback of these experts, the Turkish version of HPBQ was finalized. Finally, the questionnaire form was applied to participants.

The participants gave consent for their participation after being informed about the purpose, procedure, confidentiality, and anonymity of their participation. All the participants were administered a set of self-report questionnaires in a paper-pencil format and it took about 20 min to complete these

questionnaires. The participants also received course credit for their participation.

Measures

Sociodemographic Information Form This form was designed for the current study. Participants reported on their gender, age, accommodation, number of college years, unity of the family, and perceived socioeconomic status. Further, four questions, which were rated on a 7-Likert scale, were added to this form. These questions were as follows: “How often do you communicate with your mother/father in a day?” ($1 = \text{Never}$, $7 = \text{Always}$) and “How is your relationship with your mother/father?” ($1 = \text{Cold/distant}$, $7 = \text{Warm/close}$).

Helicopter Parenting Behaviors Questionnaire (HPBQ) This scale was developed by Schiffrin et al. (2014) to measure college students’ perceived maternal helicopter parenting and autonomy supportive behaviors. The questionnaires include two subscales, including Helicopter Parenting Behaviors (HPB; nine items; e.g. “My mother/father monitors my exercise schedule”) and Autonomy Supportive Behaviors (ASB; six items; e.g. “My mother/father encourages me to choose my own classes”). The 15-item questionnaire was rated on a scale ranging from 1 (*Strongly disagree*) to 6 (*Strongly agree*). The Mother and Father Forms of this scale were used

in this study. The original form of the scale exhibited satisfactory internal consistencies, which were .77 for HPB and .71 for ASB (Schiffrin et al., 2014).

Helicopter Parenting Instrument (HPI) This instrument was developed by Odenweller et al. (2014) to assess perceptions of youths about their parents’ helicopter parenting. The instrument consisted of 15 items, which are rated on a 5-point Likert scale ($1 = \text{Strongly disagree}$, $5 = \text{Strongly agree}$). Higher scores of the scale reflect more developmentally inappropriate helicopter parenting practices. HPI includes items such as “My parent tries to make all of my major decisions” and “My parent insists that I should keep him or her informed of my daily activities.” The Turkish adaptation study was conducted by Ertuna (2016) and revealed a Cronbach’s alpha score of .77. The Cronbach’s alpha scores were found to be .78 in the original study and .71 in the present study.

Behavioral Control Scale-Youth Self Report (BCS-YSR) This scale was originally developed by Brown et al. (1993) to measure monitoring behaviors and adapted into Turkish by Kindap et al. (2008) to measure behavioral control. A four-point Likert scale consisting of five items (e.g. “What I do in my spare time”; $1 = \text{My parent never knows}$, $4 = \text{My parent always knows}$) is filled by adolescents. Higher scores indicate higher levels of behavioral control. The Cronbach’s alpha internal consistency coefficients of this scale were .81 (Barber, 1996), and .75 (Kindap et al., 2008), respectively. In this study, Cronbach’s alpha scores were .77 for the mother form and .83 for the father form.

Depression Anxiety Stress Scale (DASS) This scale was developed by Lovibond and Lovibond (1995) to assess depression, anxiety, and stress states of individuals. DASS had 42 items, which are rated on a 4-point Likert scale ($0 = \text{Did not apply to me at all}$, $3 = \text{Applied to me very much or most of the time}$). The scale has three subscales (depression, anxiety, and stress) and each subscale has 14 items. The adaptation study of DASS for Turkish use revealed good Cronbach’s alpha scores, which were .89 for the entire scale, .90, .92, and .92 for depression, anxiety, and stress subscales, respectively (Akin & Çetin, 2007). The Cronbach’s alpha scores of depression, anxiety, and stress subscales were respectively .96, .89, and .93 in the original study, and .92, .88, and .90 in the present study.

Data Analysis

The data set was analyzed by using IBM SPSS 21.00 and Analysis of Moment Structures (AMOS) 21.00. Before conducting analyses, the univariate and multivariate normality assumptions were checked. All the variables were distributed within acceptable normality ranges (Tabachnick & Fidell,

Table 1 Demographic information

Variables	N	%
Gender		
Female	165	50.9
Male	157	48.5
Other	2	0.6
SES		
Low	37	11.5
Middle	219	67.5
High	68	21.0
Unity of Family		
Parents together	306	94.5
Parents divorced	18	5.5
Accommodation		
Parents’ home	97	29.9
Own place	57	17.6
Dormitory	150	46.3
Other	20	6.2
College year		
Freshman	136	42.0
Sophomore	81	25.0
Junior	65	20.1
Senior	41	12.9

SES: Socioeconomic Status.

2001). The missing values were less than 5% and replaced by using the maximum likelihood method (Newman, 2003). Confirmatory factor analyses (CFA) were conducted for the Mother and Father forms of the scale through the maximum likelihood method to evaluate how well the data fit the model. Model fit was evaluated by considering the indexes of means of the likelihood-ratio test (χ^2), Comparative Fit Index (CFI), Tucker Lewis Index (TLI), Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI), Standardized Root Mean Squared Residual (SRMR), and Root Mean Square Error of Approximation (RMSEA). Alternative models were compared using scores of chi-square difference (χ^2/df). A model with reference values of CFI, TLI, and GFI equal or above .90, AGFI equal or above .85, and RMSEA and SRMR below .10 was judged to have an acceptable fit (Brown, 2006; Byrne, 2016; Hu & Bentler, 1999). In addition, convergent and divergent validity was evaluated by assessing Pearson's correlation coefficients between the HPBQ subscales and HPI, BSC, and the subscales of DASS. Finally, the internal consistency of subscales was tested using the values of Cronbach's alpha coefficients and McDonald's omega values.

Results

Descriptive Statistics

Descriptive statistics of HPBQ subscales and other measures of this study for the total sample displayed in Table 2.

Factor Structure of the HPBQ

Confirmatory factor analysis with maximum likelihood estimation method was performed to determine whether the one-factor and two-factor models were verified in the HPBQ Mother Form. For the one-factor structure, the initial model fit values were found to be poor, ($\chi^2/df=90$, $N=324$) = 520.79, CFI = .69, GFI = .80, AGFI = .60, TLI = .63, SRMR = .09, RMSEA = .12). Item 10 was excluded from the model, since its factor loading was below 0.30 (see Table 3). Dropping item 10 resulted in a better one-factor model, ($\chi^2/df=77$, $N=324$) = 432.30, CFI = .71, GFI = .82, AGFI = .75, TLI = .66, SRMR = .08, RMSEA = .12). The suggestions of modification indices were followed. Variances between four pairs of items, which have item similarity and high error variances, were freed (items 9–14, items 6–8, items 5–12, items 6–15). CFA showed that after modification indices, the one-factor solution still did not fit the data well, ($\chi^2/df=73$, $N=324$) = 288.32, CFI = .83, GFI = .88, AGFI = .83, TLI = .78, SRMR = .07, RMSEA = .10). (see Table 4). For the two-factor structure, all the 15 items had significant factor loadings on their factors ($p < .001$) (see Table 3). The suggestions of modification indices, which

referred to the correlation of the items' high error variances on the same factor, were followed due to item similarity. In particular, variances were freed between four pairs of items (items 9–14, items 5–12, items 10–11, and items 9–10) in the model. χ^2 difference tests following each correlation (Tabachnick & Fidell, 2001) indicated statistically significant differences in the model fit (p for $\Delta\chi^2 < .05$). CFA results demonstrated that the final model fit the data reasonably well ($\chi^2/df=85$, $N=324$) = 244.69, CFI = .88, GFI = .91, AGFI = .87, TLI = .86, SRMR = .08, RMSEA = .08). The results indicated that two-factor solution of the HPBQ Mother Form suggests better psychometric properties in assessing helicopter and autonomy supportive parenting. Fit indices for the models were given in Table 4.

Confirmatory factor analysis with the maximum likelihood estimation method was also conducted to examine the fit of the specified one-factor and two-factor solution to the model in the HPBQ Father Form. For the one-factor structure, all the 15 items had significant factor loadings on their factors ($p < .001$) (see Table 3). The suggestions of modification indices were followed and variances between four pairs of items were freed because of item similarity (items 8–15, items 9–14, items 7–11, items 6–15). CFA showed that the one-factor solution still did not fit the data well, ($\chi^2/df=86$, $N=324$) = 395.33, CFI = .81, GFI = .85, AGFI = .78, TLI = .77, SRMR = .08, RMSEA = .11). (see Table 4). In the two-factor structure, all the 15 items loaded on their factor significantly ($p < .001$) (see Table 3). Following the suggestions of the modification indices and due to item similarity, error variances of four pairs of items (items 9–14, items 5–15, items 4–9, and items 7–11) on the same factor were correlated. χ^2 difference tests showed statistically significant differences in the model fit after each correlation (p for $\Delta\chi^2 < .05$) (Tabachnick & Fidell, 2001). Results indicated a final two-factor model that fit the data reasonably well ($\chi^2/df=85$, $N=324$) = 244.693, CFI = .88, TLI = .86, GFI = .91, AGFI = .87, SRMR = .06, RMSEA = .08). The results suggested that two-factor solution of the HPBQ Father Form shows better psychometric properties (see Table 4). These findings suggest that the Turkish form of the HPBQ demonstrated satisfactory psychometric properties to measure perceived helicopter parenting and autonomy supportive behaviors. Two-factor structure of the HPBQ was used in the subsequent analyses.

Validity Analysis

Pearson's correlation coefficients between the subscales of HPBQ and total scores of HPI and BCS were computed to examine the convergent validity of HPBQ. As Table 5 shows, the results indicated that the total score of HPI was positively correlated with the Mother Form of HPB ($r = .51$, $p < .001$) and ASB ($r = .25$, $p < .001$), as well as the Father Form of HPB ($r = .42$, $p < .001$) and ASB ($r = .21$, $p < .001$).

Table 2 Descriptive Statistics of Measured Variables ($N = 324$)

	<i>M</i>	<i>SD</i>	<i>Skewness, Kurtosis</i>	<i>Actual Range of Scores</i>	<i>Possible Range of Scores</i>
Freq. comm. w/ mother	4.09	2.00	.17, -1.30	1–7	1–7
Freq. comm. w/ father	3.04	.189	.86, -.38	1–7	1–7
Relationship w/ mother	6.02	1.26	-1.35, 1.47	1–7	1–7
Relationship w/ father	5.08	1.71	-.60, -.55	1–7	1–7
HPB-MF	25.95	8.54	.38, -.05	9–54	9–54
ASB-MF	24.23	6.76	-.36, -.50	6–36	6–36
HPB-FF	22.81	8.50	.44, -.23	9–50	9–54
ASB-FF	21.10	7.69	-.11, -.68	6–36	6–36
HPI	40.42	7.62	.02, 1.07	19–70	15–90
BCS-MF	13.46	3.03	.13, .01	5–20	5–20
BCS-FF	11.37	3.56	.42, .07	5–20	5–20
ANX	12.96	8.46	.58, -.22	0–41	0–42
DEP	13.02	9.79	.66, -.43	0–40	0–42
STR	18.04	9.71	.07, -.77	0–42	0–42

M: Mean; *SD*: Standard Deviation; *ns*: no significance; Freq. comm. w/ mother: “How often do you communicate with your mother in a day?”; Freq. comm. w/ father: “How often do you communicate with your father in a day?”; Relationship w/ mother: “How is your relationship with your mother?”; Relationship w/ father: “How is your relationship with your father?”; 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; HPI: Helicopter Parenting Instrument Total Score; BCS-MF: Behavioral Control Scale - Mother Form; BCS-FF: Behavioral Control Scale - Father Form; ANX: Anxiety Subscale of DASS; DEP: Depression Subscale of DASS; STR: Stress Subscale of DASS

Table 3 Factor loadings of the one- and two-factor HPBQ

	Mother Form				Father Form			
	One-factor		Two-factor		One-factor		Two-factor	
	HP	ASB	HP	ASB	HP	ASB	HP	ASB
1. My mother/father had/will have a say in what major I chose/will choose	.44	–	.47	–	.44	–	.45	–
2. My mother/father encourages me to discuss any academic problems I am having with my professor	–	.60	–	.64	–	.63	–	.73
3. My mother/father monitors my exercise schedule	.57	–	.58	–	.68	–	.76	–
4. When I am home with my mother/father, I have a curfew (a certain time that I must be home by every night)	.49	–	.49	–	.44	–	.44	–
5. My mother/father has given me tips on how to shop for groceries economically	–	.54	–	.43	–	.58	–	.53
6. My mother/father encourages me to make my own decisions and take the responsibility for the choices I have made	–	.49	–	.71	–	.65	–	.74
7. My mother/father regularly wants me to call or text her to let her know where I am	.55	–	.57	–	.52	–	.62	–
8. My mother/father encourages me to deal with any interpersonal problems between myself and my roommate or my friends on my own	–	.60	–	.79	–	.63	–	.76
9. If I were to receive a low grade that I felt was unfair, my mother/father would call the professor	.33	–	.33	–	.34	–	.37	–
10. My mother/father monitors my diet	.29	–	.53	–	.44	–	.47	–
11. My mother/father monitors who I spend time with	.63	–	.72	–	.59	–	.69	–
12. My mother/father encourages me to keep a budget and manage my own finances	–	.55	–	.60	–	.63	–	.65
13. My mother/father calls me to track my schoolwork (i.e., how I’m doing in school, what my grades are like, etc.)	.63	–	.60	–	.66	–	.70	–
14. If I am having an issue with my roommate, my mother/father would try to intervene	.36	–	.44	–	.69	–	.46	–
15. My mother/father encourages me to choose my own classes	–	.44	–	.60	–	.52	–	.68

Note. All factor loadings were statistically significant ($p < .001$). *Except item 10 in the Mother Form, which had a factor loading below .30

Table 4 Fit indices for the models

			χ^2	df	CFI	TLI	GFI	AGFI	SRMR	RMSEA
One-factor	Mother Form	Model 1	520.79	90	.69	.63	.80	.74	.09	.12
		Model 2	432.30	77	.71	.66	.82	.75	.08	.12
		Model 3	386.43	76	.75	.70	.83	.77	.08	.11
		Model 4	334.91	75	.79	.75	.86	.81	.08	.10
		Model 5	312.11	74	.81	.76	.87	.81	.07	.10
	Father Form	Model 1	531.97	90	.73	.69	.78	.71	.09	.12
		Model 2	492.20	89	.76	.71	.81	.74	.09	.12
		Model 3	456.97	88	.78	.73	.82	.74	.08	.11
		Model 4	419.92	87	.80	.76	.83	.77	.08	.11
		Model 5	395.33	86	.81	.77	.85	.78	.08	.11
Two-factor	Mother Form	Model 1	362.49	89	.80	.76	.88	.83	.08	.10
		Model 2	327.28	88	.83	.79	.89	.84	.07	.09
		Model 3	295.09	87	.85	.82	.90	.86	.07	.09
		Model 4	270.19	86	.87	.84	.90	.87	.07	.08
		Model 5	244.69	85	.88	.86	.91	.87	.07	.08
	Father Form	Model 1	326.86	89	.80	.76	.88	.83	.07	.10
		Model 2	330.10	88	.82	.79	.89	.85	.06	.09
		Model 3	306.43	87	.84	.81	.90	.85	.06	.09
		Model 4	270.19	86	.87	.84	.90	.87	.06	.08
		Model 5	244.69	85	.88	.86	.91	.87	.06	.08

CFI: Comparative Fit Index; TLI: Tucker Lewis Index, GFI: Goodness of Fit Index; AGFI: Adjusted Goodness of Fit Index; SRMR: Standardized Root Mean Squared Residual, RMSEA: Root Mean Square Error of Approximation

Additionally, there were moderate correlations between the subscales of HPBQ and BCS in the Mother and Father Forms (see Table 5).

In terms of divergent validity, correlation coefficients between the HPBQ subscales in the Mother and Father Forms and the subscales of DASS were computed. The results

showed significant correlations between the HPB subscales of Mother and Father Forms and anxiety scores ($r = .15, p < .001$; $r = .15, p < .01$, respectively), as well as the ASB scores of Father Form and depression scores ($r = -.11, p < .05$). In addition, there was no significant correlation between the Mother Form of HPBQ and the depression and

Table 5 Correlations between subscales of HPBQ, HPI, BCS, and subscales of DASS

	1	2	3	4	5	6	7	8	9	10
1. HPB-MF	–									
2. ASB-MF	.51***	–								
3. HPB-FF	.63***	.32***	–							
4. ASB-FF	.30***	.60***	.56***	–						
5. HPI	.51***	.25***	.42***	.21***	–					
6. BCS-MF	.41***	.47***	.26***	.19***	.28***	–				
7. BCS-FF	.37***	.30***	.57***	.47***	.34***	.52***	–			
8. ANX	.15***	.06	.15*	-.02	.26***	.06	.10	–		
9. DEP	.10	.00	.08	-.11*	.21***	-.02	.02	.76***	–	
10. STR	.03	.00	.10	-.02	.18***	.02	.03	.77***	.76***	–

* $p < .05$, *** $p < .001$. 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; HPI: Helicopter Parenting Instrument Total Score; BCS-MF: Behavioral Control Scale - Mother Form; BCS-FF: Behavioral Control Scale - Father Form; ANX: Anxiety Subscale of DASS; DEP: Depression Subscale of DASS; STR: Stress Subscale of DASS

stress subscales of DASS. Father Form of the HPBQ has also any significant relationship with stress (see Table 5).

Reliability Analysis

Cronbach's alpha coefficient and McDonald's omega scores were calculated to test internal consistency and reliability for the subscales of HPBQ Mother and Father Forms. Cronbach's alpha coefficient scores were .78 for HP and .80 for ASB in the mother form, and .80 for HPB and .84 for ASB in the father form. Coefficient omega scores were .78 for HP, .80 for ASB in the mother form, and .81 for HP and .84 for ASB in the father form. The Guttman split-half reliability score was .73. In addition, the randomly divided parts of the data had Cronbach's alpha scores of .76 and .77.

Discussion

The purpose of this study was to adapt the HPBQ into Turkish and to examine its psychometric properties in a sample of college students. Considering that fathers contribute to the general child development independent from mothers (Amato, 1994; see Sarkadi et al., 2007 for a review), HPBQ was adapted separately for mothers and fathers. The main results indicated that the questionnaire has a two-factor structure: "Helicopter Parenting Behaviors", "Autonomy Supportive Behaviors". The results of the CFA conducted in order to test whether the one-factor or two-factor structure was verified or not showed that the questionnaire had reasonably acceptable fit indices. For the convergent validity, HPI and BSC were positively correlated with both the Mother and Father Form of HPB and ASB. In terms of divergent validity, correlation coefficients between subscales of DASS and HPBQ subscales in the Mother and Father Forms were investigated. Correlations between the HPB subscales of Mother and Father Forms and anxiety scores, as well as the ASB scores of Father Form and depression scores were found. There was no significant correlation between the Mother Form of HPBQ and the depression and stress; the Father Form of the HPBQ has also any significant relationship with the stress subscale. Pearson's correlation coefficients between the subscales of HPBQ and total scores of HPI, BCS, and subscales of DASS demonstrate the sufficient psychometric properties in terms of convergent and divergent validity of HPBQ. Lastly, Cronbach's alpha coefficient and McDonald's omega values were above .70, which indicated that HPBQ had adequate internal consistency coefficients. This study showed that both the Mother and Father Forms of HPBQ is a valid and reliable measure for assessing perceived helicopter parenting and autonomy supportive behaviors in the Turkish cultural context.

Psychometric properties of the HPBQ were examined in terms of construct validity analysis. The examination of the construct validity of the scale was performed by employing confirmatory factor analysis for the Mother and Father Forms independently. All items have factor loadings higher than .30, and the distribution of these items into two factors had excellent consistency with the original form in the Mother and Father Forms. In addition, confirmatory factor analysis confirmed that the original two-factor structure of the HPBQ did fit the data well in our sample, showing that the two-factor structure of the HPBQ is worked in the Turkish cultural context.

The findings showed that helicopter parenting and autonomy parenting were positively correlated in both the Mother and Father Forms. This finding is in line with several studies as well as the original study of HPBQ demonstrated that helicopter parenting was positively related to autonomy supportive parenting (Reed et al., 2016; Schiffrin et al., 2014). On the other hand, the literature includes studies demonstrating that helicopter parenting was negatively correlated with autonomy supportive parenting (Odenweller et al., 2014; Segrin et al., 2012). In another study, it was found that helicopter parenting and autonomy support were not significantly correlated with each other (Kouros et al., 2017). The positive relationship between helicopter parenting and autonomy supportive parenting could be explained in several ways. First, helicopter parenting and autonomy supportive-parenting are likely orthogonal constructs, and therefore, the absence of helicopter parenting behaviors does not imply that autonomy supportive parenting is present (Soenens & Vansteenkiste, 2010; Vansteenkiste & Ryan, 2013). Second, child-rearing and parenting practices and their effects vary considerably across cultures (Bernstein & Triger, 2010; Segrin & Flora, 2019). Some studies indicate that helicopter parenting may not be inherently negative (e.g., Padilla-Walker & Nelson, 2012; Reed et al., 2016). Similarly, Lee and Kang (2018) suggested that helicopter parenting could be related to both negative and positive psychological outcomes depending on the mediating factors in the East Asian context. Korean emerging adults tend to view intensive parental control and involvement -which are considered to be shared some similar aspects with helicopter parenting- as parental affection and efforts to support their children's achievements (Jang et al., 2016; Kang & Shih, 2018; Kwon et al., 2016; Song, 2015). Third, factors associated with helicopter parenting should be taken into account. For example, a significant interaction between maternal helicopter parenting and warmth was found in a study by Nelson et al. (2015). In another study, helicopter parenting was found to be in a positive association with affection (Lee & Kang, 2018). In our study, results showed the positive relationship between perceived helicopter parenting and autonomy supportive parenting, which provide support to potential orthogonal relationships demonstrated in the study of Schiffrin et al.

(2014). Therefore, it should be noted that the total score of the HPBQ should not be used in empirical studies.

Analysis for convergent validity revealed that the subscales in both forms of the HPBQ are significantly and positively correlated to HPI. Thus, findings indicated high correlations in the predicted direction between both forms of HPBQ and an already adopted measure assessing a similar construct. In addition, the significant relationship between BCS and subscales of HPBQ provides additional support to convergent validity. In our study, perceived helicopter parenting was found positively related to perceived maternal and paternal behavioral control. Similarly, although they are distinct constructs, it is suggested that helicopter parenting is related to behavioral control (Padilla-Walker & Nelson, 2012; Schiffrin et al., 2014; Soenens & Vansteenkiste, 2010). This finding could be explained by cultural differences in parenting, especially for motherhood. In Turkey, mothers who do not demonstrate behavioral control towards their children may be perceived as not sufficiently supportive and as if maternal behavioral control practices were a natural part of Turkish mothers. However, paternal behavioral control might be perceived as a part of helicopter parenting due to the lack of involvement of fathers in their children's lives. Similarly, in another study, it is found that the children of helicopter parents report that their parents are involved and emotionally supportive (Padilla-Walker & Nelson, 2012). Therefore, helicopter parenting may be perceived as a way of supportive parenting especially for mothers in the Turkish cultural context. Another explanation could be done for the difference between perceived maternal and paternal parenting practices based on further information that we obtained in this study. We asked the participants additional two questions to evaluate their relationship with their parents. Questions were about the frequency of phone calls and the quality of their relationship with their parents. As can be seen in Table 2, participants reported that they had more frequent telephone conversations with their mothers than their fathers. Although studies showed that helicopter parents make frequent phone calls with their children (Hofer, 2008; Somers & Settle, 2010b), it is also found that there was positive association between cell-phone satisfaction and relationship satisfaction with both parents (Miller-Ott et al., 2014). However, when there were cell phone rules related to relationship satisfaction and closeness, mothers' control over college students may be problematic (Miller-Ott et al., 2014). Our finding is quite consistent with this result and also important to reflect a tendency on relationship differences of emerging adult children with fathers and mothers. Thus, the relationship between behavioral control and helicopter parenting as well as autonomy supportive parenting could be evaluated based on this information.

In terms of divergent validity analysis, the correlations between both forms of HPBQ and the subscales of DASS (depression, anxiety, and stress) were computed. HPB subscale in

both forms of the HPBQ had a significant relationship with anxiety, whereas the ASB subscales in both forms were not correlated to anxiety. A negative correlation between depression and ASB subscale in the Father Form, as well as a non-significant relationship between subscales of HPBQ and stress and depression provided evidence for the divergent validity of the Turkish form. In relation to the aforementioned findings, Schiffrin et al. (2014) found that helicopter parenting was correlated with higher rates of depression, but it was not correlated with anxiety. In another study, helicopter parenting was not associated with depression and anxiety (Reed et al., 2016). In terms of autonomy support, Schiffrin et al. (2014) did not find autonomy support is significantly correlated to anxiety and depression, whereas Reed et al. (2016) found that autonomy support was significantly associated with depression, but not with anxiety. In another study, it was found that helicopter parenting was positively related to students' dysphoria and social anxiety, and negatively related to their well-being, whereas autonomy support was associated with less social anxiety, higher well-being and marginally related to lower dysphoria (Kouros et al., 2017). In the current study, the association between both subscales of HPBQ (helicopter parenting and autonomy supportive parenting) and stress as well as anxiety were found in the same direction for both mother and father forms. However, the remarkable finding regarding divergent validity is the differentiation of the relationship between depression and autonomy supportive parenting in the mother and father forms. According to the findings, it was found that there was a negative relationship between depression and paternal autonomy supportive parenting, while there was no significant relationship between maternal autonomy supportive parenting and depression. In a study, children who have controlling helicopter mothers have the highest levels of depressive symptoms. In the same study, children who have a warm helicopter and average fathers have the lowest levels of depressive symptoms, whereas children with a high controlling helicopter and low involvement fathers have the highest depressive symptoms (Padilla-Walker et al., 2019). Another study has found a stronger relationship between paternal helicopter parenting and higher rates of depression (Klein & Pierce Jr, 2009). On the other hand, Schiffrin et al. (2019) expressed that emerging adults who reported lower autonomy experienced more depressive symptoms and demonstrating there was a positive relationship between depression and both paternal and maternal helicopter parenting. Studies have shown that indulgent parenting, which can be defined by the lack of autonomy supportiveness, is also associated with the child's depression symptoms (Bayer et al., 2006; Cui et al., 2016). As can be seen, there are various findings in the literature regarding the difference in the relation between depression and both paternal and maternal autonomy supportive parenting. Schiffrin et al. (2019) suggested that culturally defined gender roles may have an impact

children's responses to parenting. In addition to this, with which parent the child makes herself/himself identification may impact children's responses to helicopter parenting and autonomy parenting. More research is needed to evaluate the differentiative effects of maternal and paternal helicopter parenting and autonomy supportive parenting in emerging adults.

The results of our study suggested that helicopter parenting was associated with anxiety, but not with stress and depression. Helicopter parenting behaviors include affection and warmth (Lee & Kang, 2018; Nelson et al., 2015). It seems that helicopter parenting may not be strictly associated with such negative outcomes in Turkey. In line with the study of Kwon et al. (2016), our study provided a rich description and cultural aspects of helicopter parenting. Therefore, to clarify these differential relationships between studies, future replication studies should be conducted taking into account potential contributing factors.

Finally, in terms of reliability analyses, Cronbach's alpha coefficient scores were .78 for HPB and .80 for ASB in the Mother form, and .80 for HPB and .84 for ASB in the Father form in our study. In the original form of the scale, internal consistencies were .77 for HPB and .71 for ASB (Schiffrin et al., 2014). Taken together, the results of the reliability analyses demonstrated good to excellent internal consistency coefficients for both the mother and father forms of HPBQ among our sample.

Limitations and Suggestions for Future Research

The current study has several limitations. First, due to the nature of the helicopter parenting phenomenon, although college students are our target group, this can be also evaluated as a limitation in terms of the generalizability of the findings. Our results could be generalized for only emerging adults. To confirm the factor structure of the HPBQ and provide further evidence of the relationship between HPBQ and behavioral control, as well as general psychologic distress (i.e., depression, anxiety, stress), it is important to conduct similar studies in different samples, such as children and teenagers. Second, the current study included emerging adults mostly from middle socio-economic backgrounds. Hoff-Ginsberg and Tardif (1995) suggested that the factor structure of parenting questionnaires might differentiate families from higher socio-economic backgrounds. Therefore, future research should investigate the factor structure of the HPBQ in families from different socio-economic backgrounds. Third, our study could limit the response flexibility of participants, since the items require providing information about their parents. Finally, based merely on self-reports of students, this study may provide us a unidirectional perspective. Measurements taken from parents as well as students could provide us a multidirectional perspective with the comparability of the dyadic pattern (parent-child dyad) of responses.

Taken together, the Turkish version of the HPBQ is a valid and reliable measurement to assess perceived parental helicopter parenting and autonomy supportive behaviors. Measuring helicopter parenting and autonomy supportive parenting based on a behavioral basis, which gives a more concrete perspective to the participants evaluating their parents, constitutes the strength of this questionnaire. Further, HPBQ, with the forms of both parents, is a sound measurement to provide an evaluation of the differences between perceived maternal and paternal parenting practices. HPBQ offers a brief and user-friendly measurement tool, which increases its utility. For future research, the Turkish version of HPBQ provides a useful measurement to clarify overlaps and differences in parenting practice across cultures. In conclusion, the Turkish version of the two-factor HPBQ has sufficient psychometric properties.

Author Contributions B.K.-A. and C.A.-A. designed and executed the study. B.K.-A. wrote introduction and discussion parts of the study. C.A.-A. ran the data analyses, and wrote method and results parts of the study. B.K.-A. and C.A.-A. contributed equally to editing of the final manuscript.

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

Declarations

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

Disclosure of Potential Conflicts of Interest The authors declare that they have no conflict of interest.

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 (Ethics Committee of Ankara University) and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

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