

Parental Autonomy Support Predicts Academic Achievement Through Emotion-Related Self-Regulation and Adaptive Skills in Chinese American Adolescents

Jeffrey Liew, Oiman Kwok, Yu-pei Chang,
and Bonny W. Chang
Texas A&M University

Yu-Chen Yeh
National Academy for Educational Research

The present study challenges the popular notion that overly controlling or restrictive parenting is the primary pathway to academic achievement for Chinese Americans. Although traditional Chinese values require parents to make good choices for their children by supervising and asserting strict limits using *guǎn* (safeguarding) and *jiào xun* (demandingness of excellence), such parental duties do not preclude the use of autonomy support or noncoercive discipline to promote children's academic success. In this study, we examined the processes or mechanisms underlying the linkages between parental autonomy support, emotion-related self-regulation, adaptive skills, and academic achievement in 92 Chinese American adolescents (mean age = 16 years, $SD = 1.4$) and their first-generation immigrant parents. Study results indicate that parental autonomy support and emotion-related self-regulation are both promotive factors in adaptive and academic competencies. We propose that *guǎn* (管), or safeguarding, and *jiào xun* (教訓), or demandingness of excellence, represent parental strictness-supervision, which when counterbalanced by autonomy support, could be considered the yin and yang in parenting that promotes adolescents' academic success without harming their social-emotional or psychological well-being.

Keywords: parenting, autonomy, emotion regulation, achievement, Chinese American

Chinese parents have often been characterized as overly strict and controlling, and such portrayals continue to permeate the media and stimulate public discourse as a parenting approach to raise academically successful children. However, such views may be outdated as studies document shifts in Chinese parenting in the 21st century as a combination of traditional Chinese and Western ideologies and practices, including higher warmth and autonomy support and lower power assertion (Chen & Chen, 2010; Kim, Wang, Orozco-Lapray, Shen, & Murtuza, 2013; Way et al., 2013). The present study continues to challenge the popular notion that overly controlling or restrictive parenting is the primary pathway to academic achievement for Chinese Americans by testing a three-path mediation model to examine the influence of parental

autonomy support on academic achievement through emotion-related self-regulation and adaptive skills.

Parenting From the Chinese Perspective: Safeguarding and Demandingness of Excellence

In majority of the classic and contemporary parenting literatures (e.g., Baumrind, 1967; Collins, Madsen, & Susman-Stillman, 2002; Maccoby & Martin, 1983), parenting styles could be broadly classified by two broad dimensions of parental responsiveness and parental demandingness or strictness. Authoritarian and authoritative parenting styles are both characterized by strictness. However, what differentiates authoritarian from authoritative parenting is parental responsiveness, with the former characterized by unresponsiveness and the latter characterized by responsiveness. This difference between authoritarian and authoritative parenting is associated with differential child outcomes, with authoritarian parenting generally linked to negative developmental outcomes (Eisenberg et al., 2001) and authoritative parenting generally linked to positive developmental outcomes (Collins et al., 2002).

In regards to how parental responsiveness might be expressed in Chinese culture, emotional restraint is valued in traditional Chinese culture, and research indicates that Chinese Americans tend to appear less emotional and report experiencing less emotion than other ethnic groups, such as Mexican Americans (Soto, Levenson, & Ebling, 2005). Thus, Chinese American parents may show responsiveness in ways that may not always involve overt emotional expressions (Eisenberg, Chang, Ma, & Huang, 2009). Rather, the Chinese concepts of *guǎn* and *jiào xun* may signify

This article was published Online First February 17, 2014.

Jeffrey Liew, Oiman Kwok, Yu-pei Chang, and Bonny W. Chang, Department of Educational Psychology, Texas A&M University; Yu-Chen Yeh, Office of R&D and International Affairs, National Academy for Educational Research, New Taipei City, Taiwan (R.O.C.).

This research was supported by a grant from the Hogg Foundation for Mental Health to Jeffrey Liew. The authors express gratitude for the families that participated in this research, for the assistance and support from organizations and social services agencies serving Asian American and Pacific Islander communities in the Houston metropolitan area, and for the valuable feedback from the journal editor and reviewers of this article.

Correspondence concerning this article should be addressed to Jeffrey Liew, Department of Educational Psychology, Texas A&M University, College Station, TX 77843-4225. E-mail: jeffrey.liew@tamu.edu

how Chinese parents demonstrate responsiveness (Chao, 1994). *Guǎn*(管) is a Chinese term translated as “to govern” and “to look after” (Tobin et al., 1989), referring to the parental duty of looking after children’s needs and safeguarding children’s well-being. *Jiào xun* (教訓) is another Chinese term translated as “to train,” “to teach” or discipline, and to guide children in the appropriate or expected or correct behaviors (Chao, 1994), referring to the parental duty of expecting and demanding excellence from children. Taken together, the indigenous concepts of *guǎn* and *jiào xun* emphasize safeguarding and demandingness of excellence from children that map on to high responsiveness and high demandingness that characterize authoritative parenting typology (Sorkhabi, 2005).

According to self-determination theory (SDT; Ryan & Deci, 2000), autonomy is a basic psychological need that must be satisfied for optimal development and functioning. Autonomy refers to the need to make one’s own choices rather than from pressure, external control, or internal compulsions (Ryan & Deci, 2000; Vansteenkiste, Ryan, & Deci, 2008). Autonomy could be expressed differently across cultures (Deci & Ryan, 2000). In Chinese culture, *filial piety* is the first and foremost virtue calling for children to respect and obey parents’ choices and wishes. Although the teachings of filial piety may appear to thwart children’s autonomy, cross-cultural studies suggest that deference to parents’ choices do not violate the principle of self-determination if children internalize parents’ choices as their own. In a series of studies conducted with Chinese children in Hong Kong, Bao and Lam (2008) found that when children had close relationships with the people who made choices for them, their motivation was as strong as when they made their own choices.

Parental Control: Differentiating Structure and Psychological Control

Traditional Chinese values require parents to make good choices for their children by supervising and asserting some limits and control over children using *guǎn* (safeguarding) and *jiào xun* (demandingness of excellence). While there is general consensus that parents need to assert limits, debate continues on the type and amount of parental control that are optimal for children’s social-emotional and academic competencies. Scholars and researchers have called for a reconceptualization of parental control as consisting of multiple forms that could be classified into parental structure and parental psychological control (Grolnick & Pomerantz, 2009).

Parental structure includes behavioral control and strictness-supervision (e.g., monitoring of and setting limits on children’s behavior) that is consistent with the high demandingness dimension of authoritative parenting styles and does not preclude parents from also using psychological autonomy granting or noncoercive democratic discipline (Steinberg, Lamborn, Dornbusch, & Darling, 1992). In contrast, parental psychological control includes practices associated with pressure, intrusiveness, and dominance on the child that “stifles independent expression and autonomy” (Barber, 1996, p. 3299). A large body of research indicates that parental psychological control is consistently linked to negative developmental outcomes (Barber, Stolz, & Olsen, 2005; Shek, 2007; Wang, Pomerantz, & Chen, 2007). For example, overly restrictive and coercive parenting has been found as harmful to

children’s development of self-regulation and school-related competence (Grolnick & Ryan, 1989; Steinberg, 2001). In a study on Chinese American immigrant mothers, mothers voiced that they no longer could rely on traditional Chinese parenting practices such as restriction and coercion to discipline their children for the sake of their overall development (Cheah, Leung, & Zhou, 2013).

Autonomy Support and Promotion of Volitional Functioning (PVF)

In contrast to parental psychological control which stifles development of autonomy, parental PVF is defined as parenting that is empathic, noncontrolling, and encouraging toward children’s development of autonomy (Grolnick & Pomerantz, 2009; Soenens & Vansteenkiste, 2010). Given that autonomy is a major developmental task during adolescence (Collins & Steinberg, 2006; Petegem, Beyers, Vansteenkiste, & Soenens, 2012), parental PVF may be an aspect of parenting that may be particularly prominent for adolescents. Autonomy can be conceptualized somewhat differently depending on theoretical perspectives. According to separation-individuation theory (Blos, 1979), development of autonomy requires that adolescents demonstrate independence from parents by either choice or force including pressures from parents or society (Holmbeck & Leake, 1999). In contrast, according to SDT (Ryan & Deci, 2000), autonomy is defined as volitional or self-endorsed functioning without pressure, external control, or internal compulsions. Thus, autonomy support could be defined as promotion of independence or as PVF (Soenens et al., 2007).

There are conceptual and empirical reasons to distinguish between autonomy support defined as promotion of independence versus volitional functioning (Grolnick & Pomerantz, 2009; Petegem et al., 2012; Soenens et al., 2007). In a study by Soenens and colleagues (2007), results from both exploratory and confirmatory factor analyses indicated that parental promotion of independence (of the separation-individuation perspective) and parental PVF (of the SDT perspective) were different constructs. In addition, PVF (but not promotion of independence) provided unique prediction of psychosocial functioning in adolescence or early adulthood (Soenens et al., 2007). Other studies found similar results (Petegem et al., 2012; Soenens, Vansteenkiste, & Sierens, 2009). Furthermore, Soenens et al. (2009) conducted cluster-analysis and demonstrated that high parental PVF systematically corresponds with low parental psychological control. Consistent with the SDT perspective and with Soenens et al. (2009), the present study defines autonomy support as PVF with low parental psychological control as a proxy of high parental PVF.

Emotion-Related Self-Regulation

Emotion-related self-regulation (henceforth termed *emotion regulation* for brevity) refers to voluntary and reactive “processes used to manage and change if, when, and how (e.g., how intensely) one experiences emotions and emotion-related motivational and physiological states, as well as how emotions are expressed behaviorally” (Eisenberg, Hofer, & Vaughan, 2007, p. 288). The voluntary and “top-down” aspects of emotion regulation include capacities such as effortful control and executive functioning (Blair & Raver, 2012; Liew, 2012; Zhou, Chen, & Main, 2012). *Effortful control* is a temperament construct referring to “the

efficiency of executive attention” and “the ability to inhibit a dominant response and/or to activate a subdominant response, to plan, and to detect errors” (Rothbart & Bates, 2006, p. 129), while *executive functioning* is a neurocognitive construct referring to the ability to engage in deliberate, goal-directed thought and action via inhibitory control, attention shifting or cognitive flexibility, and working memory processes (Garon, Bryson, & Smith, 2008; Zelazo, Craik, & Booth, 2004). In contrast, negative emotionality (e.g., fear, anger, and sadness) is a dimension of temperament that is more reactive and has been found to predict negative psychosocial adjustment in children and adolescents (Laible, Carlo, Panfile, Eye, & Parker, 2010; Sallquist et al., 2009). Effortful or executive control is linked to emotional self-control and anger control (Eisenberg, Fabes, Nyman, Bernzweig, & Pinuelas, 1994). Thus, emotion regulation is the combination of high levels of voluntary aspects of self-regulation and low or modest levels of negative emotionality.

Relation Between Parental Autonomy Support and Emotion Regulation

Cross-cultural research in the United States and in China indicates that parental autonomy support/low parental psychological control is often reflected in parents’ warm, supportive, and responsive behaviors that predict adolescents’ emotional well-being (Wang et al., 2007). In regards to emotion regulation, research indicates that empathic and encouraging parenting behaviors promote children’s development of self-regulation (Eisenberg et al., 2005; Liew, Johnson, Smith, & Thoemmes, 2011). For example, Eisenberg et al., (2005) found that parents’ expressions of warmth and positive emotions predicted children’s effortful control 2 years later. Similarly, Liew et al. (2011) found that parents’ expressions of warmth and positive emotions with young children when children were under stress predicted children’s physiological regulation, which then predicted children’s behavioral regulation. In contrast, the use of parenting practices associated with pressure, intrusiveness, and dominance on the child undermines children’s emotion regulation (Chang, Schwartz, Dodge, & McBride-Chang, 2003; Grolnick & Farkas, 2002; Wang et al., 2007).

Relation Between Emotion Regulation and Adaptive or Academic Competencies

A relatively large body of research indicates that capacities for emotion regulation is related to social competence (Eisenberg et al., 2007; Eisenberg, Spinrad, & Eggum, 2010; Eisenberg, Zhou, Liew, Champion, & Pidada, 2006), with a growing body of research indicating that emotion regulation is also related to academic competence (Gumora & Arsenio, 2010). In one of the few longitudinal studies to distinguish effortful from reactive aspects of emotion regulation, Spinrad et al. (2006) found that effortful control (but not impulsivity) continued to predict, 2 years later, social competencies such as resiliency or adaptability and popularity in middle childhood. Thus, the effortful or voluntary aspects of emotion regulation (e.g., effortful control and executive functions) may be particularly important contributors to social and adaptive skills (Spinrad et al., 2006). Similar patterns of findings have been confirmed in a cross-cultural comparison between children living in China and the United States (Zhou, Lengua, & Wang, 2009).

Emotion regulation has also been found to be associated with academic competencies and achievement (Eisenberg, Valiente, & Eggum, 2010; Gumora & Arsenio, 2010). Studies on emotion regulation and academic competencies and achievement continue to grow, with majority of the existing studies focusing on early or middle childhood (e.g., Blair & Razza, 2007; Raver, Garner, & Smith-Donald, 2007). In one of the few studies on adolescents’ emotion regulation and academic achievement, effortful control predicted school grades (Valiente, Lemery-Chalfant, Swanson, & Reiser, 2008). Furthermore, Zhou, Main, and Wang (2010) found that effortful control at first or second grade predicted social and adaptive competencies that then predicted school grades 4 years later in Chinese children. Similarly, we hypothesize that adaptive skills will mediate the link between emotion regulation and achievement in the present study.

The Present Study

We examined parenting and child factors that promote psychosocial and academic competencies in Chinese American adolescents from immigrant families. Specifically, we tested emotion regulation and adaptive competencies as two mediating mechanisms through which parental promotion of autonomy transmits influence on academic achievement.

Method

Participants

Participants were 92 Chinese American adolescents (57 females, 35 males; mean age = 16 years, $SD = 1.4$) and their parents (67 mothers, 25 fathers) from the Houston metropolitan area. According to the U.S. Census Bureau (2010), Texas has third largest, with the Houston area having the largest (40.7%) in that state, Asian population in the United States. The majority of adolescents (80%) were born in the United States, with all parents being first-generation Chinese immigrants (96% of parents were born in China or Taiwan). Parental education ranged from grade school to doctoral degree ($M =$ completion of 4-year college). Annual family incomes ranged from less than \$25,000 to more than \$100,000, with 8% of the participants reported to have family income less than \$25,000, while 38% reported family income greater than \$25,000 but less than \$100,000, and 54% reported family income greater than \$100,000.

Procedures

To participate, families must self-identify as of Chinese descent, be able to speak and read English, and have children between the ages of 14 and 18 years old. Participants were recruited from Chinese language schools, cultural community or religious centers, and referrals from families that have completed the study. Data were collected with online surveys that the parent and adolescent completed separately, and families received a gift card for participation.

Measures

Primary study measures included parental psychological control, adolescent emotion regulation, adolescent adaptive skills, and

adolescent academic achievement. Measures were administered to the parent and adolescent separately using online surveys.

Parental autonomy support (low parental psychological control). To assess parental autonomy support (i.e., PVF), parents rated on themselves and their spouses while adolescents rated their mothers and fathers on a 5-point scale using 11 items from the Parental Control Scale (PCS; Barber, 1996). Parents' ratings on their own and their spouse's use of psychological control (Cronbach's α s = .81 and .86, respectively) were correlated, $r(90) = .83, p < .01$, averaged to compute a composite for parent ratings for both parents (Cronbach's alpha = .91), while adolescents' ratings on their mother's and father's use of psychological control (Cronbach's α s = .81 and .92, respectively) were correlated, $r(90) = .60, p < .01$, and averaged to compute a composite for adolescent ratings for both parents (Cronbach's alpha = .92). Parent and adolescent ratings were correlated, $r(90) = .32, p < .01$, so their ratings were averaged to compute a composite for parental psychological control. Recall that because PVF (autonomy support) is consistently negatively correlated with psychological control, low parental psychological control indexed parental PVF. Thus, the composite for parental psychological control was reversed by multiplying by -1 to compute a composite for parental PVF.

Adolescent emotion-related self-regulation and adaptive skills. Parents rated adolescents' emotion regulation and adaptive skills on a 4-point scale using indices from the adolescent version of the Behavior Assessment System for Children-2 (BASC-2; Reynolds & Kamphaus, 2004). Split-half estimates range from .90 to .96, test-retest estimates range from .80 to .91, and interrater estimates range from .71 to .83 (Reynolds & Kamphaus, 2004). The emotional self-control, executive functioning, negative emotionality, and anger control T scores were used as indices of emotion regulation in the present study. Because higher scores indicate greater symptomology or clinical problems, scores were reversed by multiplying by -1 to reflect optimal functioning in those areas. The adaptive skills index consists of 5 scales (adaptability, social skills, leadership, study skills, and functional communication), and composite T score for adaptive skills was used in the present study.

Adolescent academic achievement. Adolescents reported on their school grades from their most recent report card in the school subjects of English, math, science, and social studies which are state standard core academic subject areas in middle and high

schools. Grades were assigned numerical values (ranging from 11 = A+; 1 = F), and were averaged across school subjects to compute an average grade as an index for academic achievement.

Analyses

Prior to testing the mediation model, a measurement model for the latent construct of emotion regulation was tested. Models were analyzed by using Mplus version 6.11 (Muthén & Muthén, 1998–2010) with full information maximum likelihood (FIML) estimation, which allowed for a model estimation with the full sample. For the hypothesized mediation model, the targeted mediation effects are displayed as three bolded arrows (α , β , and γ) in Figure 1. The two simple mediation effects (i.e., $\alpha\beta$ and $\beta\gamma$) were examined using the "Indirect" routine in Mplus which adopted Sobel's (1982) method. To test the total (three-path) mediation effect (i.e., $\alpha\beta\gamma$), we used the bootstrap method (Bollen & Stine, 1990), which has been recommended for more complex mediation effect with three or more mediation paths (Taylor, MacKinnon, & Tein, 2008). Following Cheung's (2007) procedure, we examined the overall three-path mediation effects (i.e., $\alpha\beta\gamma$) by creating the corresponding phantom variable which is a latent variable with zero variance created to estimate the targeted mediation effect. When the variance of a variable equals zero, it implies that such variable has no contribution to the model fit, the implied covariance matrix, and the parameter estimates (Raykov & Shrout, 2002). When employing the bootstrap strategy using phantom variables, a mediating relationship could be confirmed if the confidence interval did not include zero (i.e., null hypothesis of no mediation was rejected).

Results

Analyses were conducted on data from a total of 92 parent-adolescent dyads. Descriptive statistics were conducted, followed by testing of a measurement model for the latent factor of emotion regulation and the three-path mediation model.

Descriptive Statistics

Adolescent age was unrelated to major variables, and no differences across the 3 family annual income levels were found on major variables, Wilks's $F(14, 166) = 1.52, ns$. However, gender

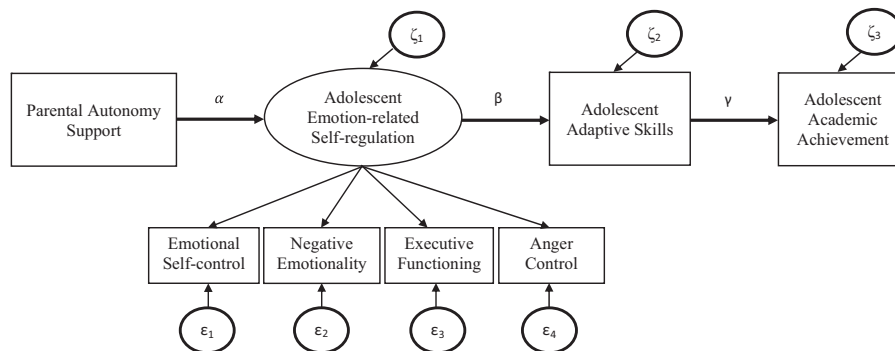


Figure 1. Hypothesized three-path mediation model.

differences were found, Wilks's $F(7, 84) = 2.50, p < .05$, with univariate results, $F(1, 90) = 4.87, p < .05$, indicating that females were higher than males on adaptive skills ($M_s = 51.90$ and 48.49 , $SD_s = 6.96$ and 7.57 , respectively). Descriptive statistics and correlations are presented in Table 1. All variables were associated with one another in the hypothesized directions, except for academic achievement, which was associated only with adaptive skills (Table 1).

Measurement Model for Emotion-Related Self-Regulation

The measurement model for emotion regulation consisted of four indicators: emotional self-control (as the reference indicator), negative emotionality, executive functioning, and anger control. The initial measurement model did not fit adequately to the data, $\chi^2(2, N = 92) = 7.70 (p = .021)$, Comparative Fit Index (CFI) = .98, Root Mean Square Error of Approximation (RMSEA) = .18, and Standardized Root Mean Square Residual (SRMR) = .03. Inspection of the modification indices revealed that poor fit between the model and the data was because of the correlated error between emotional self-control and negative emotionality. Because emotional self-regulation and negative emotionality both tap some aspects of negative emotions, the model was revised to include the correlated errors between emotional self-regulation and negative emotionality. Results from the revised model show that all the indicators loaded on the latent factor with good model fit: $\chi^2(1, N = 92) = .05 (p = .833)$, CFI = 1.00, RMSEA = .00, and SRMR = .002.

Three-Path Mediation Model

After confirming the measurement model for the latent factor of emotion regulation, the hypothesized three-path mediation model (Figure 1) was tested. As shown in Table 2, the overall model chi-square test and the model fit indices for the mediational models were: $\chi^2(13, N = 92) = 9.09 (p = .766)$, CFI = 1.00, RMSEA = .00, and SRMR = .04, respectively, indicating that the hypothesized model adequately fit the data. All the coefficients presented in Table 2 are standardized and significant (at $p < .05$). All the indicators loaded on the emotion regulation factor. Parent autonomy support (i.e., PVF) predicted adolescent emotion regulation ($\hat{\alpha} = .38, p < .001$), which in turn, predicted adolescent adaptive skills ($\hat{\beta} = .58, p < .001$). First, adolescents whose

parents endorsed higher levels of promotion of autonomy were more likely to be higher on emotion regulation. Second, adolescents who were higher on emotion regulation were likely to be higher on adaptive skills. Third, the significant path from adaptive skills to academic achievement ($\hat{\gamma} = .21, p < .05$) indicated that adolescents who were higher on adaptive skills were likely to be higher academic achievement.

We also examined all the mediated effects in the hypothesized model. Both the simple mediated effect estimates, $\hat{\alpha}\hat{\beta}$ and $\hat{\beta}\hat{\gamma}$, were significant using Sobel's (1982) method ($\hat{\alpha}\hat{\beta} = 2.94, p < .01$, $\hat{\beta}\hat{\gamma} = .02, p < .05$, respectively). The overall mediated effect (i.e., $\hat{\alpha}\hat{\beta}\hat{\gamma}$) was examined by using the bootstrap method and the 95% confidence interval of the mediated effect was in between .01 and .25, which did not include zero and indicated that the overall mediated effect was significant. In support of our hypotheses, results showed that both emotion regulation and adaptive skills were significant mediators: emotion regulation mediated the effect of parental autonomy support on adaptive skills, while adaptive skills mediated the effect of emotion regulation on academic achievement.

Discussion

To our knowledge, this is the first study to demonstrate a three-path mediation process by which parental autonomy support and adolescent emotion regulation serve as promotive factors in adaptive and academic competencies for Chinese American adolescents from immigrant families. Because adaptive skills were directly linked to academic achievement, support for adaptive skills may have benefits for academic learning and achievement.

Yin and Yang in Parenting: Strictness-Supervision and Autonomy Support

Although Chinese parents have often been depicted as overly strict and controlling, the first-generation immigrant parents in the present study were found to be relatively low on their use of psychological control ($M = 2.20$, with 2 = "once in a while" and 3 = "about half the time"). Contemporary researchers have found similar results. For example, Kim et al. (2013) assessed Chinese American parenting profiles and found a plurality to be supportive and the fewest to be harsh. Similarly, Cheah et al. (2013) interviewed first generation Chinese immigrant mothers who collec-

Table 1
Zero-Order Correlations for Major Variables

Scale	1	2	3	4	5	6	7
1. Parental autonomy support	—						
2. Emotional self-control	.25*	—					
3. Negative emotionality	-.25*	-.82**	—				
4. Executive functioning	.38**	.77**	-.73**	—			
5. Anger control	.25*	.59**	-.55**	.67**	—		
6. Adolescent adaptive skills	.25*	.49**	-.52**	.56**	.29**	—	
7. Adolescent academic achievement	.07	.01	-.04	.09	-.02	.21*	—
Mean	-2.20	-51.26	51.97	-53.86	-57.79	50.60	9.58
SD	.55	8.22	8.08	6.75	6.26	7.35	1.08

* $p < .05$. ** $p < .01$.

Table 2
Standardized Parameter Estimates for the Study ($N = 92$)

Variable	Estimates (SE)
Factor loading	
$\lambda_{\text{Emotional Self-Control}}$.81 (.05)***
$\lambda_{\text{Negative Emotionality}}$	-.77 (.05)***
$\lambda_{\text{Executive Functioning}}$.96 (.03)***
$\lambda_{\text{Anger Control}}$.69 (.06)***
Correlated error between emotional self-control and negative emotionality	
	-.51 (.10)***
Direct effect α	
β	.38 (.09)***
γ	.58 (.07)***
γ	.21 (.10)*
Indirect effect ^a ($\alpha\beta$)	2.94 (.89)**
Indirect effect ^a ($\beta\gamma$)	.02 (.01)*
Indirect effect ^b ($\alpha\beta\gamma$)	.09 (.06), 95% confidence interval = [.01, .25]
Model fit	
$\chi^2(df)$	9.09 (13), $p = .766$
Comparative Fit Index	1.00
Root Mean Square Error of Approximation	.00
Standardized Root Mean Square Residual	.04

^a Based on the unstandardized coefficients with Sobel's Test. ^b Based on the unstandardized coefficients with bootstrap method.

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

tively voiced their intention to avoid pressuring their children and allow greater independence. Way et al. (2013) found similar shifts with parents in Mainland China in parenting philosophies toward not using psychological control on children but allowing autonomy. Because psychological control is theoretically and empirically at odds with PVF, parents who used less overly controlling or coercive parenting practices would necessarily be using more empathic, noncontrolling, and encouraging parenting practices. However, parents who allow autonomy are not necessarily uninvolved or permissive because there could be a balance between strictness-supervision and autonomy support using noncoercive democratic discipline (similar to authoritative parenting). Given that achievement was very high in our sample ($M = 9.58$, $SD = 1.08$ with $A = 10$ and $A- = 9$), it was unlikely that the parents were uninvolved or permissive but were strict while allowing autonomy. We call for a reconceptualization of Chinese parenting practices, and propose that strictness-supervision (*guǎn* and *jiào xùn*) counterbalanced by autonomy support could be considered the yin and yang in Chinese parenting, a combination that promotes children's social-emotional and academic competencies.

Emotion-Related Self-Regulation as Effortful and Reactive Control Processes

Conceptually, emotion-related self-regulation (emotion regulation) is a broad construct that includes effortful or voluntary as well as reactive or involuntary processes (Eisenberg, Spinrad, & Eggum, 2010). Empirically, emotion regulation was represented in the present study by a latent construct with measures of executive functioning, negative emotionality, emotional self-control, and anger control as indicators. Executive functioning taps more of the effortful aspects, whereas negative emotionality taps more of the reactive aspects of self-regulation. Emotion self-control and anger control tap a mixture of effortful and reactive control. Although the

four indicators tap somewhat different dimensions of emotion regulation, the measurement model indicate that each indicator represents a significant aspect of the construct. Furthermore, the significant correlated errors likely reflect shared the variance in measurement of reactivity and emotionality inherent in emotional self-control and negative emotionality.

Parenting and Adolescent Self-Regulatory and Adaptive Competencies

Consistent with studies conducted in the United States and in China (Eisenberg et al., 2005; Wang et al., 2007), our findings support the view that parenting practices that promote autonomy are associated with emotion regulation but parenting practices that are psychologically or emotionally manipulative and coercive are associated with poor self-regulatory skills. Our results indicate that parental promotion of autonomy (i.e., volitional functioning) was significantly associated with all indices of emotion regulation (i.e., emotional self-control, low negative emotionality, executive functioning, and anger control). In addition, our finding that parental promotion of autonomy was linked to adaptive skills is consistent with results from other studies showing the importance of autonomy support and parental structure (e.g., behavioral control and strictness-supervision) in adolescent adaptive competencies and adjustment (see Grolnick & Pomerantz, 2009, for a review).

Mediating Roles of Self-Regulatory and Adaptive Competencies in Academic Achievement

Data support our hypothesized three-path mediation model, showing that emotion regulation mediated the effect of parental autonomy support (i.e., promotion of volitional functioning) on adaptive skills, and that adaptive skills mediated the effect of emotion regulation on academic achievement. This type of mediation chain has been termed a *micromediation chain* (Cook & Campbell, 1979; see Taylor, MacKinnon, & Tein, 2008). Mediation effects were found, in light of the fact that the only measure in our study that was directly related to adolescent academic achievement (outcome variable) was adaptive skills (mediator). This is consistent with MacKinnon, Fairchild, and Fritz (2007)'s argument that the predictor and outcome variables do not have to be correlated to establish mediation. Many methodologists agree that a path from the predictor to the outcome is implied if the predictor and mediator variables are correlated and if the mediator and the outcome variables are correlated. Because adaptive skills was the most proximal factor that directly related to academic achievement in our study, intervention and efforts to support development of social-emotional competencies may simultaneously or subsequently support academic competencies (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011).

Limitations and Future Directions

Even though the sample size of this study ($N = 92$) was modest with limited statistical power to detect the hypothesized mediation effects, effects were detected. However, directional or causal conclusions cannot be confirmed with our study design or from concurrent data. Thus, future studies with longitudinal and observational designs would provide stronger evidence of the direction

of influences and for mediation. In addition, caution needs to be taken when generalizing study findings to Chinese Americans living in various regions of the United States, or to other Asian American groups. Future studies need to examine model paths across Asian American groups, while taking into account immigrant-generational backgrounds, and differing personal and financial resources. We also used the reversed score of parental psychological control as a proxy for autonomy support, and future research needs to replicate findings using a direct measure of promotion of volitional functioning with mothers and fathers. Despite limitations, this study included a number of strengths including the use of parent and adolescent perspectives to assess parenting practices. Furthermore, measurement of emotion-related self-regulation included indices of effortful as well as reactive control.

In conclusion, although stereotypic portrayals of Chinese parents as overly controlling and restrictive persist, contemporary Chinese parenting ideologies are dynamic and responsive to changing cultural and scientific understandings of child and adolescent development. While many parents maintain traditional parental duties of strictness-supervision (*guǎn* and *jiào xun*), they also recognize the need to support children's autonomy (Way et al., 2013). Our data support the view that overly controlling and restrictive parenting is not the only pathway to academic achievement (also see Kim et al., 2013). For Chinese American adolescents with immigrant backgrounds, parental autonomy support and emotion-related self-regulation are promotive factors in adaptive and academic competencies. Importantly, a parenting style that is empathic, noncoercive, and encouraging toward adolescents' development of autonomy promotes academic achievement without compromising wellbeing or psychological health.

References

- Bao, X. H., & Lam, S. (2008). Who makes the choice? Rethinking the role of autonomy and relatedness in Chinese children's motivation. *Child Development, 79*, 269–283. doi:10.1111/j.1467-8624.2007.01125.x
- Barber, B. K. (1996). Parental psychological control: Revisiting a neglected construct. *Child Development, 67*, 3296–3319. doi:10.2307/1131780
- Barber, B. K., Stolz, H. E., & Olsen, J. A. (2005). Parental support, psychological control, and behavioral control: Assessing relevance across time, culture, and method. *Monographs of the Society for Research in Child Development, 70*. Retrieved from <http://www.jstor.org/stable/3701442>
- Baumrind, D. (1967). Child care practices anteceding three patterns of preschool behavior. *Genetic Psychology Monographs, 75*, 43–88. Retrieved from <http://www.psychnet.apa.org>
- Blair, C., & Raver, C. C. (2012). Individual development and evolution: Experiential canalization of self-regulation. *Developmental Psychology, 48*, 647–657. doi:10.1037/a0026472
- Blos, P. (1979). *The adolescent passage*. Madison, CT: International Universities Press.
- Bollen, K. A., & Stine, R. (1990). Direct and indirect effects: Classical and bootstrap estimates of variability. *Sociological Methodology, 20*, 115–140. doi:10.2307/271084
- Chang, L., Schwartz, D., Dodge, K., & McBride-Chang, C. (2003). Harsh parenting in relation to child emotion regulation and aggression. *Journal of Family Psychology, 17*, 598–606. doi:10.1037/0893-3200.17.4.598
- Chao, R. K. (1994). Beyond parental control and authoritarian parenting style: Understanding Chinese parenting through the cultural notion of training. *Child Development, 65*, 1111–1119. doi:10.2307/1131308
- Cheah, C. S. L., Leung, C. Y. Y., & Zhou, N. (2013). Understanding “tiger parenting” through the perceptions of Chinese immigrant mothers: Can Chinese and U.S. parenting coexist? *Asian American Journal of Psychology, 4*, 30–40. doi:10.1037/a0031217
- Chen, X., & Chen, H. (2010). Children's socioemotional functioning and adjustment in the changing Chinese society. In R. K. Silbereisen & X. Chen (Eds.), *Social change and human development: Concepts and results* (pp. 209–226). London, England: Sage. doi:10.4135/9781446252161.n10
- Cheung, M. W. L. (2007). Comparison of approaches to constructing confidence intervals for mediating effects using structural equation models. *Structural Equation Modeling, 14*, 227–246. doi:10.1080/10705510709336745
- Collins, W. A., Madsen, S. D., & Susman-Stillman, A. (2002). Parenting during middle childhood. In M. H. Bornstein (Ed.), *Handbook of parenting: Children and parenting* (pp. 73–101). Mahwah, NJ: Erlbaum.
- Collins, W. A., & Steinberg, L. (2006). Adolescent development in interpersonal context. In W. Damon & N. Eisenberg (Eds.), *Handbook of child psychology: Vol. 4. Socioemotional processes* (pp. 1003–1067). New York, NY: Wiley.
- Cook, T. D., & Campbell, D. T. (1979). *Quasi-experimentation: Design and analysis issues for field settings*. Chicago, IL: Rand McNally.
- Deci, E. L., & Ryan, R. M. (2000). The what and why of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11*, 227–268. doi:10.1207/S15327965PLI1104_01
- Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. *Child Development, 82*, 405–432. doi:10.1111/j.1467-8624.2010.01564.x
- Eisenberg, N., Chang, L., Ma, Y., & Huang, X. (2009). Relations of parenting style to Chinese children's effortful control, ego resilience, and maladjustment. *Development and Psychopathology, 21*, 455–477. doi:10.1017/S095457940900025X
- Eisenberg, N., Fabes, R., Nyman, M., Bernzweig, J., & Pinuelas, A. (1994). The relations of emotionality and regulation to children's anger-related reactions. *Child Development, 65*, 109–128. doi:10.2307/1131369
- Eisenberg, N., Gershoff, E. T., Fabes, R. A., Shepard, S. A., Cumberland, A. J., Losoya, S. H., . . . Murphy, B. C. (2001). Mothers' emotional expressivity and children's behavior problems and social competence: Mediation through children's regulation. *Developmental Psychology, 37*, 475–490. doi:10.1037/0012-1649.37.4.475
- Eisenberg, N., Hofer, C., & Vaughan, J. (2007). Effortful control and its socioemotional consequences. In J. J. Gross (Eds.), *Handbook of emotion regulation* (pp. 287–306). New York, NY: Guilford Press.
- Eisenberg, N., Spinrad, T. L., & Eggum, N. D. (2010). Emotion-related self-regulation and its relation to children's maladjustment. *Annual Review of Clinical Psychology, 6*, 495–525. doi:10.1146/annurev.clinpsy.121208.131208
- Eisenberg, N., Valiente, C., & Eggum, N. D. (2010). Self-regulation and school readiness. *Early Education and Development, 21*, 681–698. doi:10.1080/10409289.2010.497451
- Eisenberg, N., Zhou, Q., Spinrad, T. L., Valiente, C., Fabes, R. A., & Liew, J. (2005). Relations among positive parenting, children's effortful control, and externalizing problems: A three-wave longitudinal study. *Child Development, 76*, 1055–1071. doi:10.1111/j.1467-8624.2005.00897.x
- Eisenberg, N., Zhou, Q., Liew, J., Champion, C., & Pidada, S. (2006). Emotion, emotion-related regulation, and social functioning. In X. Chen, D. French, & B. Schneider (Eds.), *Peer relationships in cultural context* (pp. 170–200). Cambridge University Press.
- Garon, N., Bryson, S. E., & Smith, I. M. (2008). Executive function in preschoolers: A review using an integrative framework. *Psychological Bulletin, 134*, 31–60. doi:10.1037/0033-2909.134.1.31
- Grolnick, W. S., & Farkas, M. (2002). Parenting and the development of

- self-regulation. In M. H. Bornstein (Ed.), *Handbook of parenting, Vol. 5: Practical issues in parenting* (pp. 89–110). Hillsdale, NJ: Erlbaum.
- Grolnick, W. S., & Pomerantz, E. M. (2009). Issues and challenges in studying parental control: Toward a new conceptualization. *Child Development Perspectives, 3*, 165–170. doi:10.1111/j.1750-8606.2009.00099.x
- Grolnick, W. S., & Ryan, R. M. (1989). Parent styles associated with children's self-regulation and competence in school. *Journal of Educational Psychology, 81*, 143–154. doi:10.1037//0022-0663.81.2.143
- Gumora, G., & Arsenio, W. F. (2010). Emotionality, emotion regulation, and school performance in middle school children. *Journal of School Psychology, 40*, 395–413. doi:10.1016/S0022-4405(02)00108-5
- Holmbeck, G., & Leake, C. (1999). Separation-individuation and psychological adjustment in late adolescence. *Journal of Youth and Adolescence, 28*, 563–581. doi:10.1023/A:1021654626328
- Kim, S. Y., Wang, Y., Orozco-Lapray, D., Shen, Y., & Murtuza, M. (2013). Does “tiger parenting” exist? Parenting profiles of Chinese Americans and adolescent developmental outcomes. *Asian American Journal of Psychology, 4*, 7–18. doi:10.1037/a0030612
- Laible, D., Carlo, G., Panfile, T., Eye, J., & Parker, J. (2010). Negative emotionality and emotion regulation: A person-centered approach to predicting socioemotional adjustment in young adolescents. *Journal of Research in Personality, 44*, 621–629. doi:10.1016/j.jrp.2010.08.003
- Liew, J. (2012). Effortful control, executive functions, and education: Bringing self-regulatory and social-emotional competencies to the table. *Child Development Perspectives*. doi:10.1111/j.1750-8606.2011.00196.x
- Liew, J., Johnson, A. Y., Smith, T. R., & Thoemmes, F. (2011). Parental expressivity, child physiological and behavioral regulation, and child adjustment: Testing a three-path mediation model. *Early Education and Development, 22*, 549–573. doi:10.1080/10409289.2010.481551
- Maccoby, E. E., & Martin, J. A. (1983). Socialization in the context of the family: Parent-child interaction. In P. H. Mussen & E. M. Hetherington (Eds.), *Handbook of child psychology: Vol. 4. Socialization, personality, and social development* (4th ed.). New York, NY: Wiley.
- MacKinnon, D. P., Fairchild, A. J., & Fritz, M. S. (2007). Mediation analysis. *Annual Review of Psychology, 58*, 593–614. doi:10.1146/annurev.psych.58.110405.085542
- Muthén, L. K., & Muthén, B. O. (1998–2010). *Mplus user's guide* (6th ed.). Los Angeles, CA: Muthén & Muthén.
- Petegem, S. V., Beyers, W., Vansteenkiste, M., & Soenens, B. (2012). On the association between adolescent autonomy and psychosocial functioning: Examining decisional independence from a self-determination theory perspective. *Developmental Psychology, 48*, 76–88. doi:10.1037/a0025307
- Raver, C. C., Garner, P., & Smith-Donald, R. (2007). The roles of emotion regulation and emotion knowledge for children's academic readiness: Are the links causal? In R. C. Pianta, M. J. Cox, & K. L. Snow (Eds.), *School readiness and the transition to kindergarten in the era of accountability* (pp. 121–147). Baltimore, MD: Brookes.
- Raykov, T., & Shrout, P. E. (2002). Reliability of scales with general structure: Point and interval estimation using a structural equation modeling approach. *Structural Equation Modeling, 9*, 195–212. doi:10.1207/S15328007SEM0902_3
- Reynolds, C. R., & Kamphaus, R. W. (2004). *Behavior assessment system for children* (2nd ed.). Circle Pines, MN: American Guidance Service.
- Rothbart, M. K., & Bates, J. E. (2006). Temperament. In W. Damon & R. M. Lerner (Series Eds.) & N. Eisenberg (Vol. Ed.), *Handbook of child psychology: Vol. 3. Social, emotional, and personality development* (6th ed., pp. 99–166). New York, NY: Wiley. doi:10.1002/9780470147658.chpsy0303
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55*, 68–78. doi:10.1037//0003-066X.55.1.68
- Sallquist, J. V., Eisenberg, N., Spinrad, T. L., Reiser, M., Hofer, C., Zhou, Q., Liew, J., . . . Eggum, N. (2009). Positive and negative emotionality: Trajectories across six years and relations with social competence. *Emotion, 9*, 15–28. doi:10.1037/a0013970
- Shek, D. T. L. (2007). A longitudinal study of perceived parental psychological control and psychological well-being in Chinese adolescents in Hong Kong. *Journal of Clinical Psychology, 63*, 1–22. doi:10.1002/jclp.20331
- Sobel, M. E. (1982). Asymptotic confidence intervals for indirect effects in structural equation models. In S. Leinhardt (Ed.), *Sociological methodology 1982* (pp. 290–312). Washington, DC: American Sociological Association. doi:10.2307/270723
- Soenens, B., & Vansteenkiste, M. (2010). A theoretical upgrade of the concept of parental psychological control: Proposing new insights on the basis of self-determination theory. *Developmental Review, 30*, 74–99. doi:10.1016/j.dr.2009.11.001
- Soenens, B., Vansteenkiste, M., Lens, W., Luyckx, K., Goossens, L., Beyers, W., & Rya, R. M. (2007). Conceptualizing parental autonomy support: Adolescent perceptions of promotion of independence versus promotion of volitional functioning. *Developmental Psychology, 43*, 633–646. doi:10.1037/0012-1649.43.3.633
- Soenens, B., Vansteenkiste, M., & Sierens, E. (2009). How are parental psychological control and autonomy-support related? A cluster-analytic approach. *Journal of Marriage and Family, 71*, 187–202. doi:10.1111/j.1741-3737.2008.00589.x
- Sorkhabi, N. (2005). Applicability of Baumrind's parent typology to collective cultures: Analysis of cultural explanations of parent socialization effects. *International Journal of Behavioral Development, 29*, 552–563. doi:10.1080/01650250500172640
- Soto, J. A., Levenson, R. W., & Ebling, R. (2005). Cultures of moderation and expression: Emotional experience, behavior, and physiology in Chinese Americans and Mexican Americans. *Emotion, 5*, 154–165. doi:10.1037/1528-3542.5.2.154
- Spinrad, T. L., Eisenberg, N., Cumberland, A., Fabes, R. A., Valiente, C., Shepard, S. A., . . . Guthrie, I. K. (2006). Relation of emotion-related regulation to children's social competence. A longitudinal study. *Emotion, 6*, 498–510. doi:10.1037/1528-3542.6.3.498
- Steinberg, L. (2001). We know some things: Parent-adolescent relationships in retrospect and prospect. *Journal of Research on Adolescence, 11*, 1–19. doi:10.1111/1532-7795.00001
- Steinberg, L., Lamborn, S. D., Dornbusch, S. M., & Darling, N. (1992). Impact of parenting practices on adolescent achievement: Authoritarian parenting, school involvement, and encouragement to succeed. *Child Development, 63*, 1266–1281. doi:10.1111/j.1467-8624.1992.tb01694.x
- Taylor, A. B., MacKinnon, D. P., & Tein, J. (2008). Tests of the three-path mediated effect. *Organizational Research Methods, 11*, 241–269. doi:10.1177/1094428107300344
- Tobin, J. J., Wu, D. Y. H., & Davidson, D. H. (1989). *Preschool in three cultures*. New Haven, CT: Yale University Press.
- U.S. Census Bureau. (2010). *State and County QuickFacts. Census 2010 population, demographic, and housing information*. Retrieved from <http://quickfacts.census.gov/qfd/states/480001k.html>
- Valiente, C., Lemery-Chalfant, K., Swanson, J., & Reiser, M. (2008). Prediction of children's academic competence from their effortful control, relationships, and classroom participation. *Journal of Educational Psychology, 100*, 67–77. doi:10.1037/0022-0663.100.1.67
- Vansteenkiste, M., Ryan, R. M., & Deci, E. L. (2008). Self-determination theory and the explanatory role of psychological needs in human well-being. In L. Bruni, F. Comim, & M. Pugno (Eds.), *Capabilities and happiness* (pp. 187–223). Oxford, England: Oxford University Press.
- Wang, Q., Pomerantz, E. M., & Chen, H. (2007). The role of parents' control in early adolescents' psychological functioning: A longitudinal investigation in the United States and China. *Child Development, 78*, 1592–1610. doi:10.1111/j.1467-8624.2007.01085.x

- Way, N., Okazaki, S., Zhao, J., Kim, J., Chen, X., Yoshikawa, H., . . . Deng, H. (2013). Social and emotional parenting: Chinese mothering in a changing society. *Asian American Journal of Psychology, 4*, 61–70. doi:10.1037/a0031204
- Zelazo, P. D., Craik, F. I. M., & Booth, L. (2004). Executive function across the life span. *Acta Psychologica, 115*, 167–183. doi:10.1016/j.actpsy.2003.12.005
- Zhou, Q., Chen, S. H., & Main, A. (2012). Commonalities and differences in the research on children's effortful control and executive function: A call for an integrated model of self-regulation. *Child Development Perspectives, 6*, 112–121. doi:10.1111/j.1750-8606.2011.00176.x
- Zhou, Q., Lengua, L., & Wang, Y. (2009). The relations of temperament reactivity and effortful control to children's adjustment problems in China and the United States. *Developmental Psychology, 45*, 724–739. doi:10.1037/a0013776
- Zhou, Q., Main, A., & Wang, Y. (2010). The relations of temperamental effortful control and anger/frustration to Chinese children's academic achievement and social adjustment: A longitudinal study. *Journal of Educational Psychology, 102*, 180–196. doi:10.1037/a0015908

Received June 6, 2012

Revision received July 29, 2013

Accepted September 20, 2013 ■

Members of Underrepresented Groups: Reviewers for Journal Manuscripts Wanted

If you are interested in reviewing manuscripts for APA journals, the APA Publications and Communications Board would like to invite your participation. Manuscript reviewers are vital to the publications process. As a reviewer, you would gain valuable experience in publishing. The P&C Board is particularly interested in encouraging members of underrepresented groups to participate more in this process.

If you are interested in reviewing manuscripts, please write APA Journals at Reviewers@apa.org. Please note the following important points:

- To be selected as a reviewer, you must have published articles in peer-reviewed journals. The experience of publishing provides a reviewer with the basis for preparing a thorough, objective review.
- To be selected, it is critical to be a regular reader of the five to six empirical journals that are most central to the area or journal for which you would like to review. Current knowledge of recently published research provides a reviewer with the knowledge base to evaluate a new submission within the context of existing research.
- To select the appropriate reviewers for each manuscript, the editor needs detailed information. Please include with your letter your vita. In the letter, please identify which APA journal(s) you are interested in, and describe your area of expertise. Be as specific as possible. For example, “social psychology” is not sufficient—you would need to specify “social cognition” or “attitude change” as well.
- Reviewing a manuscript takes time (1–4 hours per manuscript reviewed). If you are selected to review a manuscript, be prepared to invest the necessary time to evaluate the manuscript thoroughly.

APA now has an online video course that provides guidance in reviewing manuscripts. To learn more about the course and to access the video, visit <http://www.apa.org/pubs/authors/review-manuscript-ce-video.aspx>.