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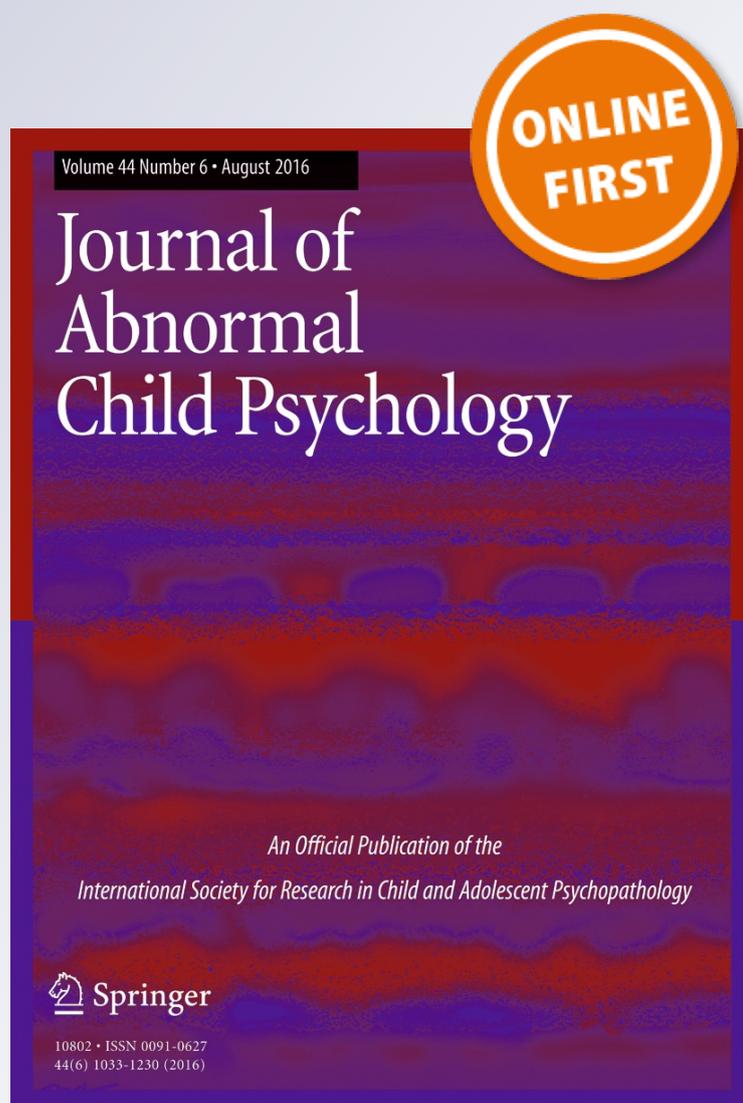
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Cultural Differences in the Reciprocal Relations between Emotion Suppression Coping, Depressive Symptoms and Interpersonal Functioning among Adolescents

William Tsai¹  · D. Julie Nguyen² · Bahr Weiss³ · Victoria Ngo⁴ · Anna S. Lau²

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Abstract The current study examined the prospective relations between emotion suppression and maladjustment (i.e., depressive symptoms, family stress events, peer stress events, and family and peer support) among Vietnamese American ($n = 372$) and European American adolescents ($n = 304$). We found that at baseline Vietnamese Americans adolescents reported greater use of emotion suppression coping than European American adolescents. Multi-group structural equation modeling indicated that for European American teens emotion suppression was significantly related to increased depression symptoms and decreased quality of peer relationships. In contrast, for the Vietnamese Americans teens emotion suppression relations to later maladjustment was either nonsignificant or attenuated relative to the European American. These findings suggest ethnic group differences in both the utilization, and

consequences and function of emotion suppression among Vietnamese American and European American adolescents.

Keywords Emotion suppression · Ethnicity · Well-being · Adolescence

Expressive emotion suppression is a response-focused emotion regulation strategy that involves an active effort to reduce or inhibit the expression of affect after it is aroused (Gross and John 2003). Although considerable research has linked emotion suppression to greater depressive symptoms (Aldao and Nolen-Hoeksema 2010) and poorer social functioning (Gross and John 2003), several key aspects of the emotion suppression-maladjustment link are not yet fully delineated. First, the directionality of these relations is not yet clear. That is, it is not yet established whether emotion suppression increases risk for later maladjustment, whether earlier distress precipitates reliance on emotion suppression, or both. In addition, it is unclear the extent to which the (mal) adaptiveness of emotion suppression varies as a function of cultural context (Kitayama et al. 2004). There are theoretical reasons to suspect that the effects of emotion suppression on mental health may vary, given cultural variation in attitudes towards emotional expression as a function of independent and interdependent self-construals (Markus and Kitayama 1991). Lastly, few studies have examined these relations across ethnic groups during adolescence, a key developmental period during which emotion regulation may play a prominent role in emergent risk for psychopathology (Larsen et al. 2013).

Thus, the objective of the present study was to assess reciprocal relations between emotion suppression coping and maladjustment as indexed by depressive symptoms and interpersonal problems across two ethnic groups. Our sample included Vietnamese American adolescents, an ethnic group placing a

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relative emphasis on interdependent values, and European American adolescents, an ethnic group generally considered to place a relative emphasis on independent values. Expressive emotion suppression differs from *experiential* emotion suppression, such that the latter represents an effort to suppress their internal emotional experience (e.g., attempting to reduce the intensity of a felt emotion). In the present study we examined adolescents' use of expressive emotion suppression as a coping response to stress.

Emotional Suppression: Consequence or Cause of Depressive Symptoms

On the one hand, it is possible that increased use of emotion suppression following stressful experiences is a consequence of depression (Campbell-Sills et al. 2006), in that emotion suppression is consistent with certain core clinical features of depression. For instance, anhedonia is a central feature of depression, and represents reduced experience and expression of affect. In addition, individuals attempting to cope with the negative affect that is definitional to depression may be highly motivated to avoid these aversive emotions, through suppression. As such, emotion suppression may be a consequence of depression. Supporting this perspective, Larsen et al. (2013) tested reciprocal relations between emotion suppression and depressive symptoms in a sample of Dutch adolescents, and found that depressive symptoms predicted increased self-reported emotion suppression 1 year later, but that emotion suppression did not predict increased depressive symptoms.

On the other hand, emotion suppression coping may cause or exacerbate depressive symptoms (Wegner and Zanakos 1994), because it may not be an adaptive coping strategy for regulating distress or resolving the environmental stress underlying the depressive symptoms. In an experimental study, Gross (1998) found that individuals instructed to suppress their emotions during a distressing film clip were able to successfully modulate expressive display compared to those in the control condition, but emotion suppression did not decrease the subjective experience of negative emotions. Other studies have suggested that emotion suppression may lead to incongruence between felt emotion and expressed emotion, which itself may result in increased anxiety, depression, increased rumination, and re-experiencing of the suppressed negative affect (Gold and Wegner 1995; Wegner et al. 1987). As negative emotion lingers, physiological stress responses accumulate (i.e., increased activation of the sympathetic nervous system) which can in turn further disrupt mood and cognition (Roberts et al. 2008). Indeed, in a sample of 9-year old girls, Keenan et al. (2009) found that youth-reported suppression of negative emotions

were associated with depressive symptoms and impairments in school, family, and peer relations.

Emotion Suppression: Consequence or Cause of Poor Interpersonal Functioning

Emotions serve a fundamental role in facilitating social communication and connection (Mesquita and Leu 2007), which suggests that under certain conditions suppression of emotions may lead to adverse interpersonal outcomes (Gross and John 2003). Indeed, emotional expressiveness is positively associated with interpersonal intimacy and greater relationship quality (e.g., Geist and Gilbert 1996; Gottman and Levenson 1992), which suggests that emotion suppression in contrast may be associated with reduced social support (Sprecher and Hendrick 2004; John and Gross 2004). The suppression of emotional display appears to result in reduced attention to interpersonal partners, diminishing feelings of social connection, sometimes engendering ill will or conflict (Butler et al. 2003; Richards et al. 2003). Consequently, individuals who inhibit emotional display may be interpreted by close others as distant or insensitive, and may thus contribute to conflict or rejection experiences as they fail to communicate their feelings or emotional needs (Sprecher and Hendrick 2004). In addition, individuals who engage in emotion suppression following a stressful experience may fail to signal distress and recruit support from others, resulting in reduced social support.

Considering the other causal direction, the experience of social rejection and poor relationship quality may result in greater use of emotion suppression. Campbell-Sills et al. (2006) found that the relation between depressive symptoms and emotion suppression was mediated by the belief that one's distressing emotions are unacceptable. Thus, adolescents who experience interpersonal stress and poor social support may increasingly withdraw and engage in emotion suppression to insulate against further social problems.

Cultural Variability in Emotion Suppression

Recent research on emotion suppression suggests that there may be cultural variation in the causal processes linking emotion regulation and psychological adjustment. Culture is an important factor shaping the valuation of emotional expressivity (Markus and Kitayama 2001), and thus may shape the mental health correlates of emotion suppression coping. As a consequence of socialization for interdependent cultural norms, individuals of Asian descent are more likely to engage in emotion suppression than European Americans (Gross and John 2003). In East Asian cultures in particular, socialization within an interdependent context

prioritizes exercising restraint over emotion display to accommodate to the needs of others and to promote group harmony. In contrast, in Euro-American ethnic groups children are socialized to individualistic values that emphasize independence and the assertion of the autonomous self, including open expression of internal states, with the goal of influencing others (Markus and Kitayama 1991). Evidence suggests that cultural display rules regarding suppression of emotional expression (Matsumoto 1990; Matsumoto et al. 1998) are socialized by early childhood (Louie et al. 2013; Tsai et al. 2007), with ethnic group differences mediated by these values regarding emotion regulation (Mauss and Butler 2010).

In laboratory manipulations, Asian origin individuals show less physiological arousal (e.g., based on evoked response potential; cardiovascular activity; subjective affect) than European Americans (Murata et al. 2013) when using emotion suppression. Some naturalistic studies have produced results supportive of this perspective (e.g., Butler et al. 2007). For instance, Soto et al. (2011) found that self-reported habitual emotion suppression was related to decreased quality of health among European Americans but not among Hong Kong Chinese. However, findings have not been entirely consistent with this perspective. Roberts et al. (2008) reported that in response to an emotion suppression manipulation, both European American and Chinese American participants showed increases in systolic and diastolic blood pressure, and in sympathetic activation of the cardiovascular system, and that the two groups did not differ significantly on these variables. Thus, some research suggests that the negative consequences of emotion suppression may vary culturally, and are only maladaptive in cultural contexts that encourage and emphasize emotion expressivity, but additional research is necessary to clarify inconsistencies found in the literature.

In the present study, we tested our hypotheses within a sample of Vietnamese Americans and European American adolescents. Vietnamese Americans have been characterized as a Southeast Asian group who hold interdependent values, such as prizing familial ties (Tingvold et al. 2012), obligation and assistance to family (Phinney et al. 2000), and prioritizing group over personal goals (Nguyen and Williams 1989). Vietnamese Americans are the largest refugee group to have settled in the United States. As a result of initial resettlement and subsequent patterns of secondary migration, a large number of Vietnamese Americans now live in ethnic enclaves across the United States (Zhou 2001). Although second generation youth may acculturate to American cultural values more so than their immigrant parents (Phinney et al. 2000), community influences in ethnic enclaves tend to promote strong socialization towards heritage interdependent values even among Vietnamese American youth (Zhou and Bankston 1998). Asian American adolescents have been found to retain parental heritage cultural values

even within American contexts that emphasize adolescent autonomy and independence (Fuligni et al. 1999). Accordingly, Vietnamese American youth have been described as familistic and are more likely to endorse the importance of family obligations than their European American peers (Nguyen and Williams 1989). Vietnamese American adolescents provide a strong candidate group to test our hypotheses concerning cultural variation in the use and function of emotion suppression coping.

The Current Study

To date no studies have examined the prospective relations between emotion suppression and maladjustment (i.e., depressive symptoms, family stress events, peer stress events, and family and peer support) within an ethnic group that prioritizes interdependence. The present study had two primary goals. First, we examined the relative use (i.e., level) of emotion suppression to cope with stress among Vietnamese American and European American adolescents. Due to cultural differences in display rules and prioritization of social harmony, we predicted that Vietnamese American adolescents would engage in greater emotion suppression than European American adolescents. Second, we assessed the directionality of the relations between emotion suppression coping and maladjustment using cross-lagged analyses within a 6 month longitudinal design. Because emotion suppression may be more normative and less maladaptive among interdependent ethnic groups, we hypothesized that the prospective associations between emotion suppression and later maladjustment (i.e., greater depressive symptoms, greater family/peer stress events, and poorer family/peer support) would be attenuated among Vietnamese Americans relative to European Americans.

Method

Participants and Procedures

The sample was drawn from a larger study examining cultural variation in adolescents' stress experiences, coping, and mental health among Vietnamese American and European American 10th and 11th grade students. Over three consecutive academic years (2011–2014), a total of three cohorts of students from 10 ethnically diverse public high schools participated in this study. Across the 10 schools, European American students represented approximately 26.0 % of enrolled students (range: 1.7 % to 59.6 %) whereas Asian American students represented approximately 36.9 % of students (range: 8.1 % to 76.0 %). These schools

included a significant proportion of Latino students as well (range: 14.5 % to 57.1 %). The schools were in both lower- and middle-income communities, with the percent of students qualifying for a free or reduced cost lunch ranging from 12 % to 77 %, with five schools designated as Title 1 eligible. Students were compensated with \$20 or \$25 retail gift cards for their participation in assessments in the baseline and two follow-up assessments, respectively. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Study recruitment involved research assistants making brief announcements in all 10th and 11th grade classrooms in the early fall of the school year in a given department (e.g., Social Studies, or Science), describing the study and distributing consent packets to interested students. Students were instructed to return the packets with a signed parental consent form and adolescent assent form if they wished to be considered for the study. Informed consent was obtained from all individual participants included in the study. Small incentives were provided to individual students who returned the forms (regardless of interest in participating) and the top three classrooms per cohort with the highest return rates were given a pizza party. In schools with smaller enrollments of eligible students (i.e., our target ethnic groups), targeted recruitment was undertaken by the school sending eligible students emails, inviting them to sessions describing the study. Among the 5035 students who returned consent packets, 1937 (38.5 %) declined participation, 3098 (61.5 %) students expressed interested in participating, but 896 (17.8 %) were found to be ineligible (due to ethnicity). Thus, in total, 2202 eligible students provided parental consent and adolescent assent for project participation.

A total of 1549 students ($M_{\text{age}} = 15.6$ years, $SD = 0.63$) were selected stratified by gender and ethnicity from among the 2202 eligible students who provided consent for the Time 1 survey. Because of their fewer numbers all eligible European American and all male students were selected for study participation. However, more Vietnamese American females volunteered than were needed for the study, and a random sample from this group was selected to participate in the baseline survey. The baseline sample was 37.6 % ($n = 582$) male, and 56.6 % ($n = 876$) Vietnamese American, 31.6 % ($n = 494$) European American, 7.5 % ($n = 116$) Hispanic/Latino American,¹ 2.3 % ($n = 36$) multiracial, and 1.3 % ($n = 20$) were from other racial/ethnic groups. Participants completed the survey in small groups at the school.

¹ Although not part of the study design, these students were included because administrators in two schools required that we extend the research opportunity to all students regardless of ethnicity.

A subset of the baseline survey sample was invited to participate in a prospective study including the baseline survey and an additional follow-up assessment over the course of the school year (Time 2). Selection for the prospective study followed a random stratified sampling procedure that further balanced both gender and ethnicity, and selected from low, medium and high stress scores on the Adolescent Life Events Questionnaire (ALEQ; Hankin and Abramson 2002) across the target groups to reduce skewness. From the 1549 participants surveyed at baseline, 678 were followed prospectively for the remainder of the academic year. Of these participants, 54.9 % ($n = 372$) were Vietnamese American and 44.8 % ($n = 304$) were European American, and 48.1 % ($n = 326$) were male. Participants completed follow-up surveys six months after the baseline survey and they were compensated with \$20 retail gift cards for the first survey and \$25 retail gift cards for each follow-up survey.

The present study used the prospective survey data from the 372 Vietnamese American participants (48.4 % males; 40.2 % sophomores) and 304 European American adolescents (47.4 % males; 49.7 % sophomores). Within the longitudinal sample, 79.3 % of Vietnamese American and 96.4 % of European American adolescents were born in the United States. Among those who were foreign born, Vietnamese American adolescents had been residing in the U.S for an average of 8.42 years ($SD = 0.40$) whereas the European American adolescents had been residing in the U.S. for 11.5 years ($SD = 5.07$). Of those who knew their parents' education level, about 32.3 % of Vietnamese American fathers, 35.6 % Vietnamese American mothers, 44.4 % of European American fathers and 52.9 % of European American mothers had a college degree or higher. In addition, although more than half of the mothers and fathers of both ethnicities had full time employment, 10.5 % of Vietnamese American fathers, 8.1 % of Vietnamese American mothers, 6.6 % of European American fathers and 5.6 % of European American mothers were unemployed and searching for job.

Measures

Emotion Suppression The extent to which adolescents attempted to suppress their emotional expression towards others (*expressive suppression*), or their internal emotional response (*experiential suppression*) when they have problems or feel upset about things was assessed at T1 and T2 using a revised version of the Children's Coping Strategies Checklist Scale (CCSC; Ayers et al. 1996) adapted to include emotion suppression item content. The CCSC is a widely-used 52-item measure that assesses the extent to which children and adolescents engage in different coping strategies (e.g., Active Coping, Avoidance). To increase the number of items that assessed emotion suppression coping, we created four additional items to assess emotion suppression coping. The five

items were “I let other people know how I felt (reverse coded)” [Original CCSC item], “I pretended to other people that everything was fine”, “I hid my emotions”, “I kept my emotions under control”, “I pretended to other people that everything was fine”, and “I did not let myself get emotional.” Participants responded to each item on a 5-point Likert scale (from *Never* to *Most of the time*).

An exploratory factor analysis with varimax rotation was conducted on the five items and revealed two factors (Fabrigar et al. 1999). An Expressive Suppression factor contained three items (i.e., “I pretended to other people that everything was fine”, “I hid my emotions”, and “I let other people know how I felt”), with factor loadings ranging from 0.71 to 0.85. An Experiential Suppression factor contained two items (i.e., “I did not let myself get emotional” and “I kept my emotions under control”). Given the focus of the present study on expressive suppression, the second factor was not used.

As would be expected given a 3-item scale, internal consistency was relatively low for expressive suppression at T1 (Cronbach's $\alpha = 0.60$ for Vietnamese Americans and 0.74 for European Americans) and at T2 (Cronbach's $\alpha = 0.62$ for Vietnamese Americans and 0.67 for European Americans). Yet, these levels of internal consistency is consistent with reported alphas for other brief-child report measures (e.g., Sodano and Tracey 2006) and is higher than the emotion regulation subscale ($\alpha = 0.48$) on the Response to Stress Questionnaire (Connor-Smith et al. 2000). Evidence of convergent validity is provided by a strong correlation ($r = 0.71$, $p < 0.01$) between the present 3-item measure of expressive suppression and the emotion suppression subscale of the Emotion Regulation Questionnaire (ERQ; Gross and John 2003) in a sample of Asian American and European American young adults (Sun et al., Emotional expression in daily life, manuscript submitted for publication).

Depressive Symptoms Depressive symptoms were assessed by the Youth Self Report (YSR; Achenbach and Rescorla 2001), at T1 and T2. The YSR consists of 112 items covering various internalizing and externalizing symptoms and behaviors experienced by adolescents, using response options of 0 (*not true*), 1 (*somewhat or sometimes true*), or 2 (*very true or often true*). In the present study, we used the YSR-DSM-IV Affective Problems subscale, which includes 11 items such as “I am unhappy, sad, or depressed”, “I don't eat as well as I should”, and “I feel worthless or inferior.” Internal consistency was adequate, at T1 (Cronbach's $\alpha = 0.72$ for Vietnamese Americans and 0.80 for European Americans) and at T2 (Cronbach's $\alpha = 0.78$ for Vietnamese Americans and 0.80 for European Americans).

Family and Peer Support Participants completed the Multidimensional Scale of Perceived Social Support (MSPSS; Zimet et al. 1988) at T1 and T2, to assess level of perceived social support (e.g., “I get the emotional help and support I need

from my family”; “I can count on my friends when things go wrong.”). The MSPSS consists of 8 items rated on a 6-point Likert scale (1 = “strongly disagree” to 6 = “strongly agree”). The scale contains two subscales: Family Support and Peer Support. The composite of each subscale with 4 items each was used to determine the level of support from friends and level of support from family. The MSPSS has good reliability, convergent, and discriminant validity across ethnic groups (Kazarian and McCabe 1991). In the present samples there was good internal consistency for T1 family support (Cronbach's $\alpha = 0.88$ for Vietnamese Americans and 0.91 for European Americans), T1 peer support (Cronbach's $\alpha = 0.86$ for Vietnamese Americans and 0.91 for European Americans), T2 peer support (Cronbach's $\alpha = 0.87$ for Vietnamese Americans and 0.90 for European Americans), and T2 family support (Cronbach's $\alpha = 0.88$ for Vietnamese Americans and 0.87 for European Americans).

Family and Peer Stress Events The Adolescent Life Events Questionnaire (ALEQ; Hankin and Abramson 2002) was used to assess family and peer interpersonal stress events at T1 and T2. In this measure participants are asked to indicate whether certain negative events have happened to them over the past 3 months (0 = No; 1 = Yes). The ALEQ assesses a broad range of life events, including school/achievement problems, friendship and romantic difficulties, and family problems. We excluded family and peer stressful events that were independent of the adolescents' behaviors (e.g., “A close family member died.”), only including events that were at least in part potentially caused by adolescents' behavior (e.g., “You got into an argument or fight with a friend.”). The ALEQ has good test-retest reliability and internal consistency (e.g., Hankin and Abramson 2002).

Results

Preliminary Analyses

To determine whether Vietnamese American and European American adolescents differed in their use of emotion suppression coping and in maladjustment, a series of independent samples *t*-tests were conducted. Results indicated relatively small but significant mean ethnic group differences on several variables. As expected, Vietnamese Americans ($M = 10.89$, $SD = 2.85$) endorsed significantly greater T1 emotion suppression than European Americans ($M = 10.44$, $SD = 3.11$), $t(661) = 1.97$, $p < 0.05$, $d = 0.15$. Vietnamese American adolescents also reported significantly higher levels of T1 depressive symptoms than European Americans ($M = 61.85$, $SD = 7.67$; $M = 60.54$, $SD = 8.44$, respectively), $t(661) = 2.11$, $p < 0.05$, $d = 0.16$. Furthermore, Vietnamese American adolescents ($M = 5.73$ and 3.68, $SD = 3.12$ and 1.33) endorsed

significantly more T1 family stress events and lower family support ($M = 4.68$ and 4.39 , $SD = 3.09$ and 1.26) than European American adolescents. Vietnamese American and European American adolescents did not differ on peer support and peer stress events (Table 1).

Table 2 presents bivariate correlations of the study variables separately for Vietnamese and European Americans. We found cross-sectional support for the maladaptive nature of emotion suppression for both groups. For example, T1 emotion suppression was associated with greater T1 depressive symptoms ($r = 0.42$ and 0.30 , $p < 0.01$, respectively), lower T1 peer support ($r = -0.38$ and -0.39 , $p < 0.01$, respectively), and higher T1 family stress events ($r = 0.32$ and 0.28 , $p < 0.01$, respectively) for both European Americans and Vietnamese Americans.

Cross-Lagged Models

To examine the longitudinal relations between emotion suppression and maladjustment over the 6-month interval between T1 and T2, we used multi-group Structural Equation Modeling (SEM) with observed variables using MPLUS 6.11 (Muthén and Muthén 2007). MPLUS handles missing data using full-information maximum likelihood (FIML) estimation, which uses all available data in the analyses. All models tested included age, gender, and generation status as covariates. Gender was not a significant covariate across all five models.

Depressive Symptoms First, we examined the prospective associations between emotion suppression and depressive symptoms from T1 to T2 (see Fig. 1).² The model fit the data adequately according to standard conventions by Hu and Bentler (1999). The comparative fit index (CFI) was 0.97, root mean square error of approximation (RMSEA) was 0.08, and the standardized root mean square residual (SRMR) was 0.04. As expected, depressive symptoms and emotion suppression were moderately stable over time for both Vietnamese ($\beta = 0.65$ and 0.54 , respectively) and European Americans ($\beta = 0.56$ and 0.54 , respectively). There were also positive cross-sectional associations between emotion suppression and depressive symptoms at both time points for both ethnic groups (T1: $\beta = 0.43$ and 0.29 , T2:

$\beta = 0.20$ and 0.12 , for European Americans and Vietnamese Americans, respectively).

The cross-lagged path from T1 emotion suppression to T2 depressive symptoms was significant for European Americans ($\beta = 0.15$, $p < 0.01$) and marginally significant for Vietnamese Americans ($\beta = 0.07$, $p = 0.08$). A model with this parameter constrained across groups had significantly poorer fit than the initial model with the unconstrained path, $\chi^2(1) = 5.11$, $p = 0.02$, indicating that the prediction from T1 emotion suppression to T2 depressive symptoms was significantly larger for the European American vs. between the Vietnamese American adolescents. The cross-lagged prediction from T1 depressive symptoms to T2 emotion suppression was marginally significant for European Americans ($\beta = 0.10$, $p = 0.09$), but not for Vietnamese Americans ($\beta = 0.01$, $p = 0.90$). A model with a multi-group constraint on this parameter did not differ in fit compared to the initial unconstrained model ($\chi^2[1] = 1.07$, $p = 0.30$), indicating that the estimates were not significantly different across groups.

Family and Peer Stress Events For the cross-lagged model between emotion suppression and family stress events (see Fig. 2), the model had an adequate fit with CFI = 0.92, RMSEA = 0.09, and SRMR = 0.06. There were positive cross-sectional associations between emotion suppression and family stress events for both Vietnamese Americans and European Americans ($\beta = 0.28$ and 0.32 , $p < 0.05$, respectively). There were no significant cross-lagged paths, however.

For the cross-lagged model between emotion suppression and peer stress events, the model had an adequate fit with CFI = 0.92, RMSEA = 0.08, and SRMR = 0.05. There were positive cross-sectional associations between emotion suppression and peer stress events for European Americans ($\beta = 0.27$, $p < 0.05$) but not for Vietnamese Americans ($\beta = 0.08$, $p > 0.05$). The cross-lagged path from T1 emotion suppression to T2 peer stress events was significant for European Americans ($\beta = 0.14$, $p < 0.05$) and nonsignificant for Vietnamese Americans ($\beta = -0.06$, $p = 0.19$). A model with this parameter constrained across groups had a significantly poorer fit than the initial model with the unconstrained path ($\chi^2[1] = 3.77$, $p = 0.05$), indicating that the estimate was significantly different between the Vietnamese American and European American groups. The cross-lagged path from T1 peer stress events to T2 emotion suppression was nonsignificant for both ethnic groups.

Family Support and Peer Support The emotion suppression and family support model had satisfactory fit with CFI = 0.94, RMSEA = 0.09, and SRMR = 0.05 (see Fig. 3). Although there were negative cross-sectional associations between emotion suppression and family support for both Vietnamese Americans and European Americans ($\beta = -0.32$ and -0.43 ,

² We examined potential gender differences. We found that the cross-lagged path from T1 emotion suppression to T2 depressive symptoms was significant for males ($\beta = 0.11$, $p < 0.05$) but not significant for females ($\beta = 0.08$, $p = ns$). A model with a multi-group constraint on this parameter did not differ in fit compared to the initial unconstrained model, indicating that the estimates were not significantly different across groups. Across the models testing associations between emotion suppression and other outcomes (e.g., family support), there were no differences between path estimates for males versus females.

Table 1 Mean differences of study variables between ethnic groups

	Vietnamese American (n = 372)		European American (n = 304)		
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>t</i> -statistic
T1 Emotion Suppression	10.89	2.85	10.44	3.11	1.97*
T1 Depressive Symptoms	61.85	7.67	60.54	8.44	2.11*
T1 Peer Stress Events	2.50	2.14	2.73	2.16	1.41
T1 Family Stress Events	5.73	3.12	4.68	3.09	4.36***
T1 Peer Support	4.65	1.08	4.59	1.16	0.70
T1 Family Support	3.68	1.33	4.39	1.26	7.06***
T2 Emotion Suppression	10.41	2.91	10.21	2.89	0.83
T2 Depressive Symptoms	60.73	8.48	58.41	7.85	3.36***
T2 Peer Stress Events	1.32	1.67	1.16	1.48	1.25
T2 Family Stress Events	3.42	3.04	2.54	2.64	3.64***
T2 Peer Support	4.69	0.98	4.83	0.98	1.76
T2 Family Support	3.89	1.22	4.58	1.11	7.06***

Note. * $p < 0.05$. *** $p < 0.001$

$p < 0.05$, respectively), the cross-lagged paths were nonsignificant for both ethnic groups.

There was satisfactory model fit for the emotion suppression and peer support model with CFI = 0.95, RMSEA = 0.08, and SRMR = 0.05. The cross-lagged path from T1 emotion suppression to T2 peer support was significant for European Americans ($\beta = -0.14$, $p < 0.05$) and nonsignificant for Vietnamese Americans ($\beta = 0.02$, $p > 0.05$). A model with this parameter constrained across groups did not have a significantly poorer fit than the initial model with the unconstrained path ($\chi^2[1] = 1.26$, $p > 0.05$), indicating that the estimate was not significantly different between the Vietnamese American and European American groups. The cross-lagged path from T1 peer support to T2 emotion suppression was significant for Vietnamese Americans ($\beta = -0.14$, $p < 0.05$) and marginally significant for European Americans ($\beta = -0.05$, $p > 0.05$). The estimates were not significantly different between the Vietnamese American and European American groups.

Discussion

The negative effects of emotion suppression have been documented in experimental research, and observed in cross-sectional studies among Western populations (e.g., Gross and John 2003; John and Gross 2004), but few studies have examined prospective relations in naturalistic studies (i.e., where emotion suppression occurs in response to actual stressors, rather than in experimentally manipulated situations). Another limitation of this literature is that most studies of emotion suppression have involved populations within which emotion suppression is viewed as culturally undesirable. Our findings are consistent with research on display rules

in interdependent cultures (Keltner et al. 2003), such that Vietnamese American adolescents at baseline reported greater use of emotion suppression coping than European American adolescents. Furthermore, we found that the outcomes associated with emotion suppression varied across groups. For European American teens, emotion suppression led to maladjustment in the form of increased depressive symptoms and worsened peer relationships. This may be because emotion suppression runs contrary to independent cultural norms and expectations (as evidenced by the lower levels of usage by European Americans). In contrast, for the Vietnamese American adolescents, the prospective associations between emotion suppression and later maladjustment were either nonsignificant or less significant than those for the European Americans. This pattern suggests that emotion suppression may have more benign implications within an interdependent ethnic group. Together, these findings suggest that there may be cultural variability in the relations between emotion suppression and maladjustment.

Our cross-lagged analyses suggested a single direction of influence, from emotion suppression to worsened peer relationship quality and increased depressive symptoms, and were restricted to the European American sample. For the European Americans, emotion suppression may result in increased rumination, compounding distress (Liverant et al. 2011), which may have negative effects on interactions with peers. In fact, in experimental studies with primarily European American participants, suppressing negative emotions does not typically lead to emotional relief (Gross and Levenson 1997).

In contrast, across both ethnic groups, there was little evidence that depressive symptoms and interpersonal problems resulted in increased emotion suppression over time, with one exception. This exception was that perceived peer support at baseline among Vietnamese American teens predicted greater

Table 2 Correlations between study variables for each ethnic group

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. T1 Sup	–													
2. T1 Dep	0.42***	–												
3. T1 PS	0.30***	–0.38***	–											
4. T1 FS	–0.39***	–0.08	0.43***	–										
5. T1 FSE	–0.42***	–0.34***	0.23***	–0.55***	–									
6. T1 PSE	–0.32***	0.44***	–0.21***	–0.47***	0.51***	–								
7. T2 Sup	0.28***	0.40***	–0.09	–0.33***	0.40***	0.16*	–							
8. T2 Dep	0.27***	0.37***	–0.24***	–0.20***	0.23***	0.29***	0.40***	–						
9. T2 PS	0.09	0.34***	–0.05	–0.32***	0.18***	–0.02	–0.30***	–0.30***	–					
10. T2 FS	0.58***	0.18***	–0.28***	–0.17**	0.33***	0.29***	–0.39***	–0.16**	0.35***	–				
11. T2 FSE	0.40***	0.63***	–0.31***	–0.34***	0.33***	0.23***	–0.39***	–0.46***	0.39***	–0.51***	–			
12. T2 PSE	0.28***	0.68***	–0.09	–0.29***	–0.12	–0.17**	–0.23***	–0.31***	0.39***	–0.29***	0.39***	–		
13. Female	–0.33***	–0.28***	0.56***	0.24***	–0.51***	–0.07	–0.31***	–0.37***	0.38***	–0.15*	–0.19**	0.14*	–	
14. Gen	–0.21***	–0.12	0.54***	0.16**	–0.36***	0.21***	–0.21***	–0.23***	0.48***	–0.05	–0.10	0.10	0.19***	–
	–0.30***	–0.40***	0.30***	0.72***	0.59***	0.33***	0.15**	–0.30***	0.38***	–0.30***	–0.29***	0.39***	–0.05	–0.09
	–0.26***	–0.30***	0.16**	0.65***	–0.36***	–0.21***	–0.23***	–0.31***	0.28***	–0.30***	–0.02	0.45***	–0.14	–0.07
	0.25***	0.35***	–0.22***	–0.14*	0.28***	0.37***	0.12	0.33***	0.33***	0.30***	0.39***	0.10	0.06	0.06
	0.15*	0.21***	–0.16**	–0.12	0.33***	0.50***	–0.02	0.08	0.02	–0.02	0.10	0.14*	0.19***	–
	0.24***	0.23***	0.03	–0.17**	0.23***	0.21***	0.10	0.04	0.02	0.02	0.06	–0.03	–0.05	–
	0.26***	0.11	–0.03	–0.20**	0.02	–0.07	0.02	0.04	0.02	0.01	–0.03	–0.05	–0.09	–
	0.13	0.01	–0.06	0.05	–0.05	0.00	0.06	0.04	0.02	0.08	–0.04	–0.07	–0.06	–
	–0.05	–0.20***	0.06	0.05	0.00	0.00	0.06	–0.14*	–0.13*	0.08	–0.04	–0.07	0.06	–
	0.04	–0.10*	–0.12*	0.05	0.00	0.00	0.06	–0.14*	–0.13*	0.08	–0.04	–0.07	0.06	–

* $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$. Bolded and italicized correlations are for Vietnamese Americans. Sup = Emotion Suppression, Dep = Depressive Symptoms, PS = Peer Support, FS = Family Support, FSE = Family Stress Events, PSE = Peer Stress Events, Female is coded 1 = Female and 0 = Male, Gen = Generation

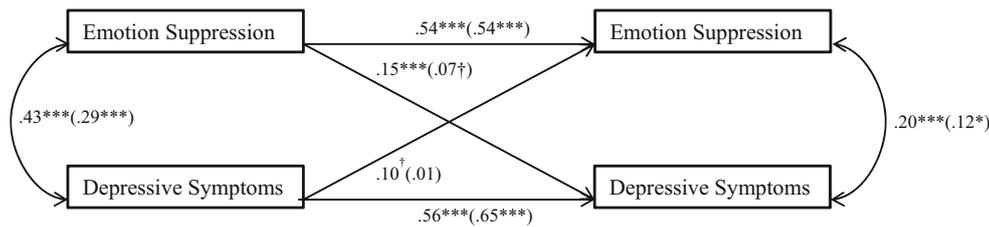


Fig. 1 Cross-lagged model of emotion suppression and depressive symptoms. Coefficients inside parentheses are for Vietnamese Americans and coefficients outside parentheses are for European Americans. † $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

emotion suppression coping at follow-up. Poor perceived peer support may have prompted Vietnamese American adolescents to worry about the security of their relationships, and to engage in emotion suppression to avoid further rejection or negative evaluation, given that there may be more of a social pressure for emotion suppression among their peer group. Other research has found that adolescents are more likely to express emotion when a supportive reaction is expected (Fuchs and Thelen 1988; Zeman and Garber 1996). Our finding that only Vietnamese American teens appeared to respond to poor perceived peer support with increasing reliance on emotion suppression is consistent with the idea that emotion regulation and expressive behavior among individuals with an interdependent orientation is more likely to be shaped by social context cues than individual needs (Markus and Kitayama 1991).

Overall, our findings stand in contrast to those of Larsen et al. (2013), who examined the reciprocal associations between emotion suppression and depressive symptoms in a sample of early adolescents in the Netherlands. Whereas Larsen and colleagues found that depressive symptoms at baseline predicted increases in emotion suppression, the bulk of our findings supported the opposite direction of influence. That is, among European American youth in particular, emotion suppression coping at baseline predicted increases in depression and more negative peer relations.

One explanation for this discrepancy is that the relation between emotion suppression and depressive symptoms may change with development, as our study included primarily 15 to 17 year olds whereas Larsen et al. included younger adolescents. Emotion suppression coping may represent a risk factor, temporally preceding distress, when children fail to develop mature emotion expression and interpersonal skills in the transition to late adolescence or young adulthood (Laible 2007; Bronstein et al. 1996). This developmental period corresponds to a period during which the risk of depression escalates sharply, with incidence among late adolescents approaching that of adults (Lewinsohn et al. 1998).

Although the effects for emotion suppression coping on maladjustment were either non-significant for the Vietnamese Americans, or significantly smaller than for the European Americans, it is important to note emotion suppression was not an adaptive coping strategy for this ethnic group. That is, emotion suppression was not associated with *decreased* depressive symptoms nor with *improved* interpersonal adjustment. Among cultures in which emotion suppression is normative, the objective of emotion suppression coping is not to regulate ones affect in a manner that is adaptive for the individual, but rather to control the display of affect in a manner that is adaptive for the social group. Thus, emotion suppression coping may be adaptive in the sense that it facilitates group harmony, but this may have relatively

Fig. 2 Cross-lagged model of emotion suppression and family and peer stress events. Coefficients inside parentheses are for Vietnamese Americans and coefficients outside parentheses are for European Americans. † $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

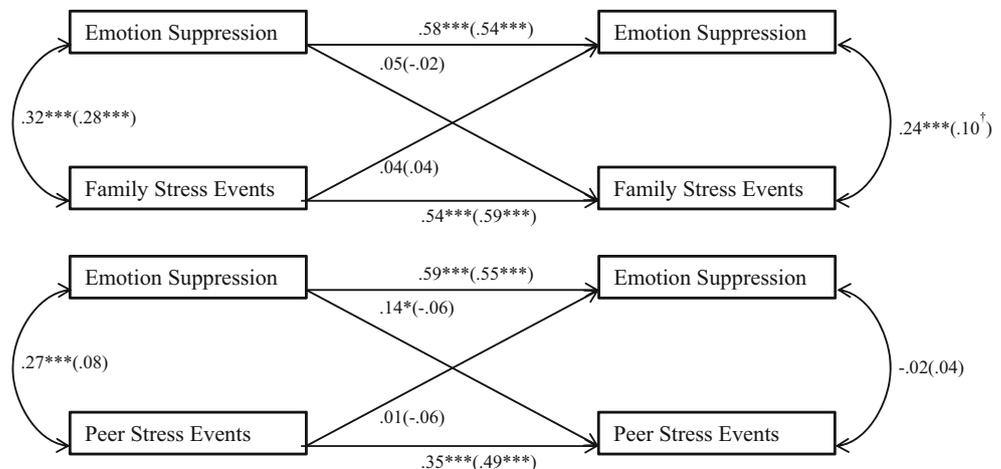
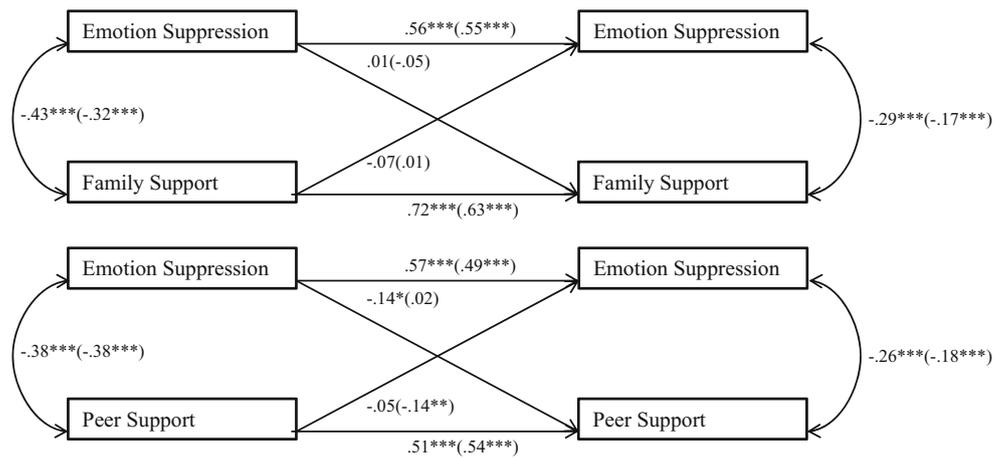


Fig. 3 Cross-lagged model of emotion suppression and family and peer support. Coefficients inside parentheses are for Vietnamese Americans and coefficients outside parentheses are for European Americans. † $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$



little direct benefit for the individual’s affective functioning. Future research employing multi-informant designs would allow for an investigation of the extent to which the social network may either benefit from suppression among its members. Extant research indicates that members of interdependent cultural groups are less likely to be seen as hostile, and resulted in less hostile conversations when suppressing their emotions during a laboratory-based task (Butler et al. 2007).

An unexpected but important pattern in our findings was that the negative interpersonal consequences of emotion suppression were evident in the peer domain but not in the family domain, and only for European American teens. Given the emphasis placed on family obligations and deference to parental authority among Vietnamese American adolescents (Fulgini et al. 1999), we were surprised that emotion suppression coping did not lead to *improved* family relationships. For example, suppressing personal distress by engaging in emotion suppression may prevent adding on to their parents’ own challenges of living in the United States. Along this vein, emotion suppression may be perceived as a sign of maturity by their parents who recognize this act as a prioritization of *group* goals vs. individual goals. Some research suggests that emotion suppression coping may be utilized more by children at school among peers, and less so at home among family members (Zeman and Garber 1996). Moreover, children appear motivated to suppress their negative emotions (e.g., anger or sadness) in the presence of peers to avoid negative interpersonal consequences, such as peer rejection or ridicule (Zeman and Garber 1996). However, our findings suggest that unfortunately using emotion suppression may have negative impacts within peer relationships. Saarni and Harris (1991) suggested that the degree of affiliation within a relationship can strongly influence whether an adolescent will engage in emotion suppression and may also determine the impact of suppression. Perhaps the unconditional bond between adolescents and their parents may

protect against any threats to relationship integrity conferred by emotion suppression coping for European American teens. By contrast, friendships are more discretionary than obligatory, such that peers may elect to exit friendships more freely, especially among individuals holding independent orientations (Markus and Kitayama 1991). Thus, in the context of European American valuation of expressivity, peers may negatively evaluate, and reject, teens who routinely suppress emotion.

In terms of clinical implications, the study findings showed that among European American adolescents, emotion suppression coping represents a worthy target of intervention as it may lead to the development of depressive symptoms and impaired peer functioning. Thus, interventions aimed at promoting more adaptive emotion regulation strategies (e.g., cognitive reappraisal or problem solving; Ehrling et al. 2010) and decreasing the use of emotion suppression may be beneficial. Examples include mindfulness-based therapies (Teasdale et al. 2000) and Acceptance and Commitment Therapy (Hayes et al. 1999), which are interventions that teach patients to “accept” their negative emotions without attempts to modulate their experienced or expressed emotions. While our findings showed that Vietnamese American adolescents appear to engage in emotion suppression coping without detrimental outcomes, Asian American adolescents may nevertheless benefit from emotion regulation focused interventions (Fung et al. 2016). Fung et al. (2016) found that Asian American and Latino American middle school students experienced significant reductions in parent-reported externalizing problems and youth-reported internalizing problems after participating in a 12-week mindfulness intervention. Yet, our findings suggest that clinicians should consider the extent to which adolescents’ cultural background motivates the use of emotion suppression coping before conceptualizing it as a maladaptive coping strategy that warrants intervention.

There are several study limitations that should be considered. First, our measure of emotion suppression was derived from the Children’s Coping Strategies Checklist Scale, but its

concurrent validity with other measures of emotion suppression (e.g., the Emotion Regulation Questionnaire; Gross and John 2003) is unknown. Nevertheless, the item content of the frequently used Emotion Regulation Questionnaire (ERQ; Gross and John 2003) is similar to our 3-item measure. Moreover, the relatively low internal consistency of emotion suppression among Vietnamese American adolescents suggests the need for future research to complement or replicate existing findings. Second, the sample was selected from neighborhoods and schools with relatively high ethnic density of Vietnamese Americans. Thus, the generalizability of our results to Vietnamese Americans who are a local minority is unknown. Third, this study relied exclusively on adolescent reports, thus making third variable explanations linked to informant possible. For example, reporting increased levels of depressive symptoms as well as affective display values might reflect a negative response tendency, either in general or directed towards the self. However, although such processes might explain cross-sectional relations, it is less clear how they might explain longitudinal relations; nonetheless it will be useful for future research to use multi-informant and multi-method data. For example, self-report measurements can be supplemented with behavioral observations using the Facial Action Coding System (Ekman et al. 1978) or psychophysiological measurements (e.g., cardiovascular reactivity). Moreover, the effects of the significant cross-lagged paths (e.g., T1 emotion suppression to T2 depressive symptoms) were smaller than the stability or cross-lagged paths, and thus should be interpreted modestly and replicated in future research. Although speculative, it may be that our longitudinal timeframe was relatively short, six months from T1 to T2, which may have limited the magnitude of our effects, given these constructs' stability during mid- to late adolescence. Finally, we relied on ethnic group membership as a distal proxy for cultural values. Future research should directly assess cultural values and other salient cultural dimensions, such as emotion control values or self-construals to provide more direct empirical evidence of the culturally-based theories.

Our findings represent important data on the possible boundary conditions on the effects of emotion suppression for adolescent maladjustment. Specifically, our findings highlight important differences in the utilization and functions of emotion suppression across ethnic groups. Evidenced by the increased utilization of emotion suppression among Vietnamese American adolescents, emotion suppression may represent a more culturally-acceptable process. Moreover, emotion suppression predicted increases in depressive symptoms, peer stress events, and decreases in peer support for European Americans but not for Vietnamese Americans. It would be important in future studies to expand on the present findings and examine whether the suppression of specific emotions (e.g., anger vs. happiness) is differentially related to maladjustment across ethnic groups.

Compliance with Ethical Standards

Conflict of Interest The author(s) declared no potential conflicts of interests with respect to the authorship and/or publication of this article.

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