Culture, emotion suppression and disclosure, and health

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Abstract
Researchers have examined cultural differences in the psychological and physiological health consequences of emotion suppression. The goal of this review is to clarify the state of the science on this growing area of research by summarizing patterns of findings, identifying limitations, and providing recommendations for future research. First, we review the framework that provides the theoretical foundation for explaining cultural differences, and then we present findings on how culture influences the psychological and physiological health consequences of emotion suppression. Next, we review the expressive writing intervention as a culturally sensitive intervention that facilitates emotion disclosure for cultural groups that prioritize emotional restraint. Finally, we end by providing theoretical and methodological recommendations for future research.

1 | INTRODUCTION

Psychologists have long debated whether there is cultural variability in emotion experience and intensity (Ekman, 1972; Matsumoto, 1990; Mesquita & Frijda, 1992). More recently, however, a new focus has risen from studying how emotions are passively experienced to studying how emotions are regulated (Gross, 2013). In this review, we focus on cultural differences in when and how much individuals suppress their emotions, and their subsequent psychological and physiological health consequences (Cheung & Park, 2010; Kwon, Yoon, Joormann, & Kwon, 2013; Yang & Immordino-Yang, 2017). By taking stock of this growing literature, the goal of this paper is to summarize patterns of findings and provide recommendations for future research. We highlight how cultural differences in self-construals provide a theoretical foundation for understanding the divergent psychological and physiological health consequences of emotion suppression. Finally, we review the potential benefits of emotion disclosure through expressive writing as a culturally sensitive intervention that may be especially effective for cultural groups that prioritize the use of emotion suppression.

2 | WHY IS CULTURE IMPORTANT?

Emotions can serve social functions by communicating information about people's needs and inner experiences (Frijda & Mesquita, 1994; Oatley & Jenkins, 1992). Because emotions are experienced through the lens of the cultural
spaces they reside in, emotions are thus inextricably linked with culture. Culture is defined not as a stable set of values that reside inside people but, instead, as a self-constituting pattern of ideas and artifacts that reside in the world (Markus & Kitayama, 2010). Instead of implying that all individuals from one cultural background are alike, individuals from a common culture are expected to show similarities in when and how much they suppress their emotions (Kitayama & Park, 2007).

One theoretical framework that can be used to understand cultural differences in emotion suppression is the extent to which a culture promotes independence versus interdependence (Markus & Kitayama, 1991). Individualistic cultures such as those found in the United States and Western Europe promote the independent view of the self by prioritizing autonomy and pursuit of personal goals. Through this self-view, emotion suppression is discouraged as it may lead to feelings of inauthenticity (English & John, 2013). Instead, the open expression of emotions is encouraged as one way to assert the self. In contrast, collectivistic cultures such as those found in East Asia and Latin America promote the interdependent view of the self. Through this self-view, the self is interrelated with and is obligated to close-others. Because of the heightened awareness and sensitivity to relational consequences, individuals with interdependent self-views may have greater emotion control values and engage in emotion suppression to preserve social harmony. Even though the cultural psychology literature and this review have largely been limited to comparisons between East Asians and European Americans, it is crucial to acknowledge that there are other interdependent cultural groups (e.g., Latino Americans) that hold nuanced differences in interdependent self-views (e.g., convivial collectivism, Calderón-Tena, Knight, & Carlo, 2011; Campos, Perez, & Guardino, 2016). For instance, Asians and Latinos differ in the extent to which they suppress positive emotions, such that the expression of positive emotions is openly accepted and highly valued among Latino Americans (Carrillo, 1982).

3 | EMOTION SUPPRESSION

The inhibition of emotional display is known as emotion suppression (or often referred to as expressive suppression; Gross & John, 1998). Emotion suppression is distinct from experiential suppression, where experiential suppression is defined as an attempt to control the subjective experience of emotion (Quartana & Burns, 2007). Individuals from interdependent cultures may suppress their emotions more than individuals from independent cultures do because displaying them can result in negative social costs (e.g., Gross & John, 2003; H. S. Kim et al., 2011; Matsumoto, Takeuchi, Andayani, Kouznetsova, & Krupp, 1998). For example, expressing glee from attaining fortune can elicit jealousy and expressing anger may hinder conflict resolution. Asian Americans rate the open display of emotions as less appropriate than do European Americans (Matsumoto, 1993) and are more reluctant than European Americans to seek social support due to concerns about burdening others (H. S. Kim, Sherman, & Taylor, 2008). Thus, to preserve social harmony, individuals with Asian heritage may engage in emotion suppression. In contrast, European American children are socialized to express their individuality and needs through displays of emotion (Matsumoto, 1990).

Many studies have shown that individuals with Asian heritage suppress their emotions more frequently than do individuals with European heritage (e.g., Gross & John, 2003; Soto, Perez, Kim, Lee, & Minnick, 2011; Triandis, 1994). In one longitudinal study, Vietnamese American adolescents, but not European American adolescents, increased their use of emotion suppression following the experience of poor perceived support from their peers (W. Tsai, Nguyen, Weiss, Ngo, & Lau, 2017). By examining the oxytocin receptor gene (OXTR) associated with socioemotional sensitivity, H. S. Kim et al. (2011) found that having a genetic predisposition for higher socioemotional sensitivity is related to more frequent use of emotion suppression for individuals from interdependent cultures. In contrast, having a genetic predisposition for higher socioemotional sensitivity is related to less use of emotion suppression for individuals from independent cultures. These patterns of findings have also been documented at the national level where samples from countries that were rated higher in independent self-views endorsed lower levels of emotion suppression than did samples from countries that were rated higher in interdependent self-views (Matsumoto, Yoo,
Nakagawa, 2008). Together, culture influences emotion suppression on the genetic level (e.g., H. S. Kim et al., 2011), individual level (e.g., Soto et al., 2011), and national level (e.g., Matsumoto et al., 2008).

4 | FUNCTIONAL CONSEQUENCES OF EMOTION SUPPRESSION

Cultural practices and behaviors are embodied by cultural values that are simultaneously reinforced by individuals’ daily behaviors (Markus & Kitayama, 2010). Because people tend to behave in ways that are most familiar and practiced, behaviors that deviate from the cultural norm may be associated with poor psychological health (see Chentsova-Dutton et al., 2007, for an example). In other words, people’s psychological health may be dependent on whether their feelings and behaviors are attuned to the cultural space they participate in (Kitayama, Karasawa, Curhan, Ryff, & Markus, 2010). Applying these cultural psychology theories to emotion suppression, emotion suppression may be incompatible (i.e., culturally incongruent or lack of cultural fit) with the independent view of the self and is therefore associated with poorer psychological health among individuals with European heritage. By contrast, emotion suppression may be compatible (i.e., culturally congruent or cultural fit) with the interdependent view of the self and may therefore be less harmful to psychological health among individuals with Asian heritage.

5 | PSYCHOLOGICAL HEALTH AND EMOTION SUPPRESSION

In this section, we illustrate how the psychological health consequences (i.e., defined as a general area of scientific interest in constructs such as subjective well-being and depressive symptoms rather than a specific construct) of emotion suppression is linked with culture. The literature has consistently found that emotion suppression is related to poorer psychological health for individuals with European heritage. Emotion suppression is associated with increased negative emotions (John & Gross, 2004) and greater rumination (Wegner, Schneider, Carter, & White, 1987). Those who habitually suppress their emotions tend to report greater depressive symptoms, lower satisfaction with life, and poorer interpersonal relationships (Gross & John, 2003; Srivastava, Tamir, McGonigal, John, & Gross, 2009).

If emotion suppression is culturally congruent with interdependent cultural norms of valuing emotion control, then emotion suppression should be associated with greater psychological health for individuals with Asian heritage. That is, the Asian Americans who suppress their emotions to preserve harmony are likely to be well-adjusted individuals who are in tune with their cultural heritage. In contrast, the Asian Americans who value emotion control but, nevertheless, struggle to suppress their emotions are likely to be individuals who are maladjusted. Supporting this notion, depressed Asian Americans expressed greater intensity of sadness than did nondepressed Asian Americans after viewing a sadness-inducing film clip (Chentsova-Dutton et al., 2007). The opposite finding was found for depressed European Americans who exhibited lower intensity of sadness than did nondepressed European Americans. In other words, depressed Asian Americans expressed more emotions, and depressed European Americans expressed fewer emotions. The authors believed that the depression interfered with the individuals’ ability to attend to their cultural scripts, resulting in a disconnect with their cultural norm and emotion suppression behavior (i.e., lack of cultural fit). Alternatively, they noted the possibility that it was the deviations from cultural norms that preceded and contributed to the development of depression (Chentsova-Dutton et al., 2007). During times of distress, individuals will likely have more difficulty following emotion suppression norms, because they are experiencing more frequent and intense negative affect. Even more, these situations (e.g., when an individual is depressed) may require that the individual abandon the cultural norm of emotion suppression. Thus, despite the cultural fit of emotion suppression among individuals with Asian heritage, the relations between emotion suppression and psychological health may be mixed (see Table 1 for a summary).

Some studies have found that the negative relations between emotion suppression and psychological health for individuals with Asian heritage were significant (English & John, 2013; Juang et al., 2016), while others have found them to be attenuated (Butler et al., 2007; Cheung & Park, 2010; Kwon et al., 2013; Su et al., 2014) or nonsignificant.
Even though these findings are mixed, the overall pattern of finding shows that the relation between emotion suppression and psychological health is attenuated among individuals with Asian heritage compared with individuals with European heritage. Notably, emotion suppression is associated with poorer psychological health among European Americans consistently across studies.

Butler et al. (2007) tested the extent to which people adhered to interdependent cultural values as a moderator of the relations between emotion suppression and interpersonal functioning. They found that Asian American women with higher levels of interdependent values experienced fewer interpersonal costs when they suppressed their emotions compared with Asian American women with lower levels of interdependent values. Even more, cultural values as a predictor accounted for a unique variance in the use of emotion suppression after controlling for ethnic group membership (Butler et al., 2007). Building upon these findings, Soto et al. (2011) found that the emotion suppression was associated with greater depressive symptoms for European Americans, but this link was nonsignificant for Hong Kong Chinese individuals. In another study, controlling for trait levels of anger, the positive relations between the suppression of anger and depressive symptoms were attenuated but still significant among Asian Americans (Cheung & Park, 2010). These findings show that even among cultural groups that prioritize emotional restraint, the use of emotional suppression was not associated with greater psychological health.

There are several plausible explanations for why emotion suppression was not associated with greater psychological health for individuals with Asian heritage. One possibility is that emotion suppression may be associated with greater psychological health only among the individuals who are content with their decision to suppress their emotions. Because the assessment of emotion suppression (e.g., using the Emotion Regulation Questionnaire; Gross & John, 2003) does not distinguish between those who are content with suppressing their emotions and those who are ambivalent, the relations between emotion suppression and psychological health are muddled. In other words,

<table>
<thead>
<tr>
<th>Author, year</th>
<th>Sample</th>
<th>ES measure</th>
<th>Outcome(s)</th>
<th>Correlation between emotion suppression measure and outcome</th>
</tr>
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<tbody>
<tr>
<td>English &amp; John, 2013</td>
<td>Chinese college students ($n = 114$)</td>
<td>ERQ</td>
<td>Relationship satisfaction</td>
<td>Significant negative relationship</td>
</tr>
<tr>
<td>Juang et al., 2016</td>
<td>Asian and Asian Americans ($n = 790, 64% U.S. born$)</td>
<td>ERQ</td>
<td>Depressive and anxiety symptoms</td>
<td>Significant positive relationship</td>
</tr>
<tr>
<td>Butler, Lee, &amp; Gross, 2007</td>
<td>Asian American college students ($n = 66$)</td>
<td>ERQ</td>
<td>Partner-perceptions</td>
<td>Attenuated relationship$^a$</td>
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<td>Cheung &amp; Park, 2010</td>
<td>Asian American college students ($n = 165$)</td>
<td>Anger expression subscale of STAXI</td>
<td>Depressive symptoms</td>
<td>Attenuated relationship$^a$</td>
</tr>
<tr>
<td>Su, Wei, &amp; Tsai, 2014</td>
<td>Chinese college students in Taiwan ($n = 190$)</td>
<td>ERQ</td>
<td>Experiential avoidance</td>
<td>Attenuated relationship$^a$</td>
</tr>
<tr>
<td>Kwon et al., 2013</td>
<td>Korean college students ($n = 380$)</td>
<td>ERQ and the anger expression subscale of STAXI</td>
<td>Depressive symptoms</td>
<td>Attenuated relationship$^a$</td>
</tr>
<tr>
<td>W. Tsai et al., 2017</td>
<td>Vietnamese American adolescents ($n = 372$)</td>
<td>CCSC</td>
<td>Depressive symptoms and family/peer stress events</td>
<td>Nonsignificant relationship</td>
</tr>
<tr>
<td>Soto et al., 2011</td>
<td>Hong Kong Chinese ($n = 100$)</td>
<td>ERQ</td>
<td>Satisfaction with life and depressive symptoms</td>
<td>Nonsignificant relationship</td>
</tr>
</tbody>
</table>

Note. These studies also included participants from other ethnic groups (e.g., European Americans and Latino Americans), but these findings are not reported in the table.

$^a$Attenuated relationships are relative to the significant negative relationships found between emotion suppression and negative outcomes among European Americans.

CCSC = Children’s Coping Strategies Checklist Scale; ERQ = Emotion Regulation Questionnaire; ES = emotion suppression; STAXI = State-Trait Anger Expression Inventory.

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the ambivalence (King & Emmons, 1990) of wanting to express emotions but also fearing the consequences of such expressions may be the key predictor of poorer psychological health over and beyond the behavioral act of expressive suppression. More specifically, ambivalence over emotional expression distinguishes between individuals who have similar levels of emotion suppression but whose underlying internal conflict differs (e.g., an individual who is relaxed and quiet vs. an individual who is repressed and tense). Supporting this notion, Taiwanese individuals who endorsed having the desire to protect social harmony as the motivation behind the use of emotion suppression reported lower levels of interpersonal distress (i.e., having cultural fit). In contrast, the Taiwanese individuals who endorsed having the desire to express their emotions (i.e., having a lack of cultural fit) yet endorsing frequent use of emotion suppression reported higher levels of interpersonal distress (Chu, 2015). Indeed, having higher levels of ambivalence over emotional expression resulted in more intrusive thoughts, which led to increased depressive symptoms among Chinese breast cancer survivors (Lu, Man, You, & LeRoy, 2015).

These studies suggest that the extent to which Asian Americans experience an inner conflict, or incongruity between suppressing their emotions and wanting to express their emotions, may be the key predictor of psychological health. If the conflict does not exist, then the negative consequences of emotion suppression diminish. Although it has yet to be investigated, ambivalence over emotional expression may stem from acculturative stress (Berry, Kim, Minde, & Mok, 1987). As individuals with Asian heritage acculturate to mainstream U.S. culture, they may adhere less to emotion control values and thereby have more opportunities to experience ambivalence over emotional expression.

Another explanation for this pattern of finding concerns potential moderating effects. Studies have typically examined the effects of emotion suppression by itself and have rarely examined their interactive effects with other outcomes. For instance, the link between emotion suppression and health might be moderated by individual differences in the use of other emotion regulation strategies. One study showed that Asian Americans who engaged in the combination of both emotion suppression and cognitive reappraisal were protected against the negative effects of discrimination. By contrast, cognitive reappraisal and emotion suppression were not predictive of negative outcomes due to discrimination when tested separately (Juang et al., 2016). In another study, emotion suppression was unassociated with quality of life over time among the Chinese breast cancer survivors who also engaged in high levels of cognitive reappraisal. By contrast, emotion suppression was associated with a decrease in quality of life among the Chinese breast cancer survivors who engaged in low levels of cognitive reappraisal (Lu, Tsai, Chu, & Xie, under review).

It is also possible that the benefits of emotion suppression among individuals with Asian heritage may be better captured through group-level variables (e.g., multi-informant designs) than through individual-level variables (e.g., self-reported depressive symptoms). Indeed, more frequent use of emotion suppression was associated with interpersonal harmony among Chinese individuals, and the relation was stronger among those with higher endorsement of emotion control values (Wei, Su, Carrera, Lin, & Yi, 2013). In contrast, this relation was nonsignificant among European Americans. The focus on the psychological health of an individual may reflect a Western cultural bias in psychological science (Diener & Suh, 2000) when emotion suppression may be protective at the group level, but not at the individual level. Hence, future research that employs multi-informant designs to investigate whether social networks benefit from the use of emotion suppression among its members is needed.

The overall pattern of findings shows that the use of emotion suppression by European Americans is associated with poorer psychological health, but the use of emotion suppression by Asian Americans is either attenuated or unrelated with psychological health. These studies have largely relied on differences in independent and interdependent self-views as the theoretical framework for making sense of these differences, but few of the studies have directly tested their models with cultural variables other than ethnic group membership (e.g., Korean nationality). As such, these inconsistent findings may result from the variability in the cultural constructs that were used, which range from assessing emotion control values directly (e.g., Wei et al., 2013) to using ethnic group membership as a proxy for cultural values (e.g., Kwon et al., 2013). To better understand these mixed findings, the inclusion of emotion control values, the consideration of potential moderators, the attention to the sample and their cultural makeup, and the assessment of multiple sources of data (e.g., from close-others) are needed in future research.
Parallel to the examination of the associations between emotion suppression and psychological health, researchers have also examined the associations between emotion suppression and physiology. Emotion suppression has been consistently linked with the activation of the autonomic nervous system (Levenson, Soto, & Pole, 2007). Although the effects of emotion suppression on long-term cardiovascular health have not been well established, it is posited that the repeated and sustained physiological arousal invoked by emotion suppression may lead to long-term adverse cardiovascular health (e.g., hypertension).

Extant studies on the relations between emotion suppression and physiology have largely been found in laboratory-based experiments where individuals were instructed to suppress their emotions as they watch emotion-eliciting film clips and measuring their peripheral physiology (e.g., electrodermal, skeletal muscle, pupillary, and cardiac activities; Soto, Lee, & Roberts, 2016; Mauss & Butler, 2010; J. L. Tsai & Levenson, 1997). In studies that have primarily sampled individuals with European heritage, emotion suppression has largely been associated with negative physiological health, such as delayed physiological recovery from stressors (Dorr, Brosschot, Sollers, & Thayer, 2007) and lower finger temperature (Gross & Levenson, 1993).

Scholars have also examined cultural differences in the physiological correlates (e.g., skin conductance and heart rate) of emotion suppression (Mauss & Butler, 2010; Soto et al., 2016; Yang & Immordino-Yang, 2017). One hypothesis that has been proposed is that individuals with Asian heritage can engage in emotion suppression with a reduced physiological response (e.g., lower levels of skin conductance). One explanation is attributed to practice effects from using emotion suppression more frequently, and another is attributed to differences in the motivation of using emotion suppression. Findings from earlier studies have largely failed to support this hypothesis and have found minimal or no cultural differences in the physiological response linked to emotion suppression (e.g., Soto, Levenson, & Ebling, 2005; J. L. Tsai & Levenson, 1997; J. L. Tsai, Levenson, & Carstensen, 2000). For instance, no differences in skin temperature, skin conductance, and mean arterial pressure were found between Chinese American and Mexican American students when they were asked to suppress their emotions in response to an acoustic startle (Soto et al., 2005). In a sample of African Americans, Chinese Americans, European Americans, and Mexican Americans, participants experienced similar levels of physiological reactivity when they were instructed to suppress their emotions while viewing a disgust-eliciting film clip (Roberts, Levenson, & Gross, 2008). The conclusion was that unlike self-reported psychological health, ethnicity and cultural background may have minimal effect on the biologically based physiological responses (Levenson et al., 2007).

In contrast to the earlier studies, recent studies have found cultural differences in physiological reactivity (e.g., Mauss & Butler, 2010; Murata, Moser, & Kitayama, 2012; Soto et al., 2016). European Americans experienced greater increases in skin conductance levels than did Asian Americans when they were instructed to suppress their emotions (Soto et al., 2016). Moreover, Mauss and Butler (2010) showed that Asian Americans who endorsed high emotion control values exhibited an adaptive pattern of cardiovascular responding (e.g., greater cardiac output) that is typically associated with challenge. In contrast, European Americans who endorsed high emotion control values exhibited a maladaptive pattern of cardiovascular responding (e.g., lower cardiac output) typically associated with threat. Murata and colleagues (2012) recorded electroencephalogram (EEG) data and used parietal late positive potential (LPP) of the event-related potential as an objective indicator of emotional processing. Asians exhibited decreased emotional processing when trying to suppress their emotional responses. Collectively, these findings provide support for the hypothesis that individuals with Asian heritage experience lower physiological reactivity related to the use of emotion suppression.

Nevertheless, what may have contributed to the inconsistent findings between earlier and recent research? One explanation is that the stimuli used in earlier studies were not “social” in nature and thus were not conducive to cultural differences. For instance, Soto et al. (2005) instructed participants to suppress their emotions in response to an acoustic startle. Roberts et al. (2008) instructed participants to suppress their emotions in response to a disgust-eliciting film. On the contrary, studies that utilized “social” emotional stimuli such as anger (e.g., Mauss & Butler,
2010) or film clips of individuals experiencing pain (e.g., Yang & Immordino-Yang, 2017) found significant cultural differences. The inconsistent findings between older and recent research may also be attributed to differences in technology. Detecting and cleaning "noisy" signals and syncing data streams with the onset and offset of stimuli were more challenging and prone to human error in the past. With software and hardware updates, recent studies can examine and detect cultural differences with more reliability and validity.

Although few studies tested cultural differences in hypothalamic–pituitary–adrenal axis (HPA) response during emotion suppression, an early study that observed the behavioral and cortisol responses among Japanese and European American infants during and following routine inoculation is worth mentioning (Lewis, Ramsay, & Kawakami, 1993). European American infants showed more intense initial affective responses and longer latency to calm than did Japanese infants. However, Japanese infants showed greater cortisol reactivity. More studies on cultural differences in biological responding to emotion suppression are needed.

Whereas emotion suppression has largely been unrelated or attenuated with psychological health among individuals with Asian heritage, recent studies have shown that the physiological reactivity linked with the use of emotion suppression is lower among individuals with Asian heritage. Does this suggest that there are divergent findings for physiological and psychological health? We believe that this remains an empirical question that can only be answered with additional research. For example, it is yet unclear whether these differences in laboratory-induced physiological reactivity would translate into longer term adverse health consequences (e.g., hypertension).

7 TRANSLATING BASIC TO APPLIED SCIENCE: EMOTION DISCLOSURE THROUGH WRITING

Due to the heightened awareness and sensitivity to relational consequences among individuals with Asian heritage, the private disclosure of emotions through writing may be a culturally sensitive way to disclose emotional events without fearing negative social consequences. Over the last three decades, many studies have examined the effects of emotion disclosure through writing (Pennebaker & Beall, 1986). The disclosure of emotions through writing, or known as expressive writing interventions, has been demonstrated to confer significant psychological and physical health benefits (Frattaroli, 2006). In these interventions, participants write about their deepest thoughts and feelings about their stressors (Pennebaker & Beall, 1986). It is theorized that the writing facilitates insight finding, cognitive restructuring, exposure to emotions, and reduced physiological activation associated with rumination or avoidance (Lepore, Greenberg, Bruno, & Smyth, 2002). However, a meta-analysis by Frattaroli (2006) noted that only 7% of participants across the studies included Asians. Because individuals with Asian heritage tend to suppress their emotions as a way to protect social harmony, expressive writing interventions may provide a unique opportunity to express and process distressing emotions without fear of experiencing negative relational consequences.

Recently, scholars have found support for the premise that expressive writing interventions may be a culturally effective intervention for individuals with Asian heritage. Asian undergraduate students experienced greater reduction in physical health symptoms than did their European American counterparts after writing about the consequences, challenges, and opportunities stemming from their stressors (Lu & Stanton, 2010). Moreover, W. Tsai et al. (2015) coded the content of expressive writing essays written by Asian and European American college students and found that the writing themes that were congruent with the cultural background of the participant predicted lower depressive symptoms. Specifically, writing themes that reflected independent cultural values were associated with lower depressive symptoms for European Americans, whereas writing themes that reflected interdependent cultural values were associated with lower depressive symptoms for Asian Americans. This study showed that the writing effects were sensitive to cultural norms. Replicating these findings in a laboratory-based experiment, W. Tsai, Chiang, and Lau (2016) found that culturally congruent writing resulted in greater reductions in negative affect and quicker cortisol recovery from a laboratory-induced stressor among Asian and European American college students. These studies suggest that the effects of expressive writing are largely driven by
culturally congruent writing instructions. Contrary to these findings, Asian American college students did not benefit from expressive writing related to traumatic experiences (Knowles, Wearing, & Campos, 2011).

The psychological health benefits of expressive writing appear to extend to medical populations. With Chinese American breast cancer survivors, expressive writing was associated with a long-term improvement in quality of life (Lu, Zheng, Young, Kagawa-Singer, & Loh, 2012). In another study, Lu et al. (2017) randomly assigned participants to three conditions in a randomized controlled trial of expressive writing among Chinese American breast cancer survivors, and surprisingly, participants in the cancer-fact condition who were instructed to write about facts related to their cancer treatment reported the highest level of quality of life at the 6-month follow-up. The cancer-fact condition also used more insight and causation words compared with the emotional disclosure condition. More recently, Lu, Wong, Gallagher, Tou, Young, and Loh (2017) conducted another randomized controlled trial of expressive writing intervention with three writing conditions in a sample of Chinese American breast cancer survivors. The conditions were (a) a self-regulation condition (i.e., writing about one’s deepest feelings, stress, and coping efforts and finding benefits from their cancer experience), (b) enhanced self-regulation condition (i.e., stress, coping efforts, writing about one’s deepest feelings, and then finding benefits from their cancer experience), and (3) a control condition (writing about facts relevant to their cancer experience). The self-regulation and enhanced self-regulation conditions only differed in the sequence of writing instructions. It was found that quality of life improved in all three conditions, but the enhanced self-regulation condition resulted in the greatest increase in quality of life from baseline to the 6-month follow-up. That is, engaging in cognitive processing first and emotional disclosure second resulted in the greatest improvements in quality of life among a sample of Chinese American breast cancer survivors. One potential next step for future research would be to explore culturally specific mechanisms through which expressive writing leads to greater psychological health.

8 | TAKING STOCK AND MOVING FORWARD

We have reviewed the cultural framework that underlies the extant literature on cultural differences in the use and function of emotion suppression. This framework is grounded in the contention that differences in self-views give rise to differences in the degree to which emotion control values are held, which ultimately influences the use and function of emotion suppression. Among individuals with Asian heritage, the display of emotions can be detrimental to social harmony, and thus emotional restraint is often viewed favorably by others as one way to maintain social harmony. In contrast, among individuals with European heritage, the display of emotions is a form of self-assertion, and thus emotional restraint can be viewed unfavorably by others. Findings have shown that differences in the degrees to which emotion control values are held can result in cultural differences in the psychological and physiological health of emotion suppression. Whereas relations between emotion suppression and psychological health are attenuated or nonsignificant among individuals with Asian heritage, emotion suppression has been consistently linked with poorer psychological health among individuals with European heritage. With regard to physiological health, individuals with Asian heritage experience lower physiological reactivity when they engage in emotion compared with individuals with European heritage. We also discussed how expressive writing is a culturally sensitive and effective intervention when writing instructions are culturally congruent. Although this research topic has received greater attention in the past decade, we believe it is still an understudied literature. We propose several directions for future research that we hope will be useful for readers.

First, future research should include individuals from diverse cultural backgrounds. Extant studies have largely sampled individuals with Asian and European heritages and have failed to include members from other cultural groups (e.g., individuals with Latino heritage). The sole focus on Asian and European Americans is a major limitation that prevents us from fully understanding the relations between culture and emotion suppression. Within Asian groups (e.g., Filipino, Chinese, Cambodian, and Japanese), it is also vital to note that tremendous heterogeneity exists. Although Asian subgroups share similar cultural values (Ng, 1999), they can differ in the extent to which they adhere
to specific cultural values (B. S. Kim, Yang, Atkinson, Wolfe, & Hong, 2001). Future studies should aspire to extend beyond two group comparisons (Campos, 2015), because two group comparisons can reinforce the notion that the reference group is considered the “normative group.” The inclusion of multiple groups can also motivate researchers to interpret their findings with theoretically meaningful variables (e.g., a specific cultural value; Campos, 2015).

Second, few studies have attempted to unpack the mechanisms through which emotion suppression is related to psychological and physical health. For instance, these cultural differences may be attributed to differences in adherence to emotion control values. More specifically, individuals with Asian heritage are more likely to hold emotion control values due to their heightened awareness of social harmony (Bond, 1993; Matsumoto, 1991). While individuals with European heritage can certainly value emotion control, the meaning attributed to this value is likely different. For Asians, emotion control values subserve the goal of social harmony. For European Americans, emotion control values undermine self-assertion and authenticity with others. These differences in the degree to which one values emotion control may be a significant mechanism that shapes the link between emotion suppression and psychological health (e.g., Mauss & Butler, 2010). Sophisticated models for cultural differences in the mechanisms (i.e., moderated mediation) are needed to fully understand the relations between emotion control values, emotion suppression, and health. Potential mediators that may yield fruitful investigations include the extent to which one values emotion control (Mauss & Butler, 2010), family obligation (Fuligni, Tseng, & Lam, 1999), humility (B. S. Kim, Atkinson, & Yang, 1999), and authenticity (English & John, 2013).

Third, emotion suppression has often been assessed using questionnaires (e.g., Emotion Regulation Questionnaire; Gross & John, 2003) among healthy adults that ignore the context in which emotion suppression is used and the emotional valence of the suppressed emotion. It is unclear from survey studies if their findings reflect the use of suppression with all emotion types across all social contexts, or if they reflect the use of suppression with specific emotion types and specific social contexts. Given that cultural differences exist for the type of emotions that are valued (J. L. Tsai, Knutson, & Fung, 2006), there are likely differences in the relations between the suppression of specific emotions and health. Future research that includes social context (e.g., suppression with strangers vs. with family) as a moderator is needed. For instance, Zhou, Shang, and Wang (2016) found that the suppression of happiness was associated with greater depressive symptoms among close relationships (e.g., with family), but not among distant relationships (e.g., with strangers). Furthermore, more research among populations with chronic illness are needed because they often experience persistent emotional distress that stems from their diagnoses.

Fourth, the relations between emotion suppression and physical health consequences have largely been studied in the laboratory with lab-induced stimuli and stressors. We know less about cultural differences in the longer term physical health consequences of engaging in emotion suppression. If the wear and tear of emotion suppression leads to cardiovascular diseases (e.g., hypertension) among European Americans, is this disease pathway attenuated for Asian Americans? Furthermore, no studies on emotion suppression have included biomarkers such as salivary cortisol and alpha-amylase. Accordingly, the inclusion of these biomarkers in conjunction with measurement of the sympathetic nervous system is needed to understand the physical effects of emotion suppression.

Finally, more variety in methodology is needed. For example, experience sampling methodology (ESM) can further contribute to this literature. Through ESM, nuanced questions can be answered, such as for which emotion and under which context do individuals typically engage in emotion suppression? With ESM, researchers are not limited to between-person analyses and can investigate within-person processes (Scollon, Kim-Prieto, & Diener, 2009). Lastly, most of the reviewed literature has utilized cross-sectional designs. Longitudinal designs can provide clarity on the psychological and cultural factors that lead to the development of emotion control values and use of emotion suppression.

Through this review paper, we hope we have inspired readers to continue or begin this line of work. Basic research on culture provides the conceptual and theoretical framework for understanding the relations between emotion suppression and health. By systematically unpacking the cultural underpinnings of emotion suppression and its health consequences, we can begin to personalize and tailor interventions to be feasible, effective, and meaningful for everyone.
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