Emotion expressivity, suicidal ideation, and explanatory factors:
Differences by Asian American subgroups compared to White emerging adults

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Abstract

Objectives. The relationship between emotion expressivity and psychological symptoms varies by race/ethnicity, and reduced expression of emotions has been implicated in risk for suicidal ideation. The present study examined differences in the relation between emotion expressivity and suicidal ideation through well-documented correlates of suicide risk (i.e., hopelessness, depressive symptoms) among Asian American subgroups, compared to White emerging adults.

Methods. A sample of 829 emerging adults, ages 18-28, identifying as Asian American (27% East Asian, 18% South Asian, 11% Southeast Asian) or White (44%) completed measures of emotion expressivity, hopelessness, depressive symptoms, and suicidal ideation. Results. Lower emotion expressivity was statistically associated with higher levels of suicidal ideation, via hopelessness and depressive symptoms, among White, East Asian, and South Asian American emerging adults, but not among Southeast Asian Americans, though this difference in mediation was not statistically significant. Conclusions. A focus on Asian Americans as a homogenous group occludes important ethnic differences in the relation between emotion expressivity and vulnerability to suicidal ideation. Ethnic differences in the function of emotion expressivity should be considered in suicide prevention and interventions among Asian American emerging adults.

Key words: suicidal ideation, emotion expressivity, hopelessness, depression, Asian American
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Differences by Asian American subgroups compared to White emerging adults

Asian Americans are the fastest growing racial and ethnic group in the United States (Colby & Orman, 2015), and suicide is the 2nd leading cause of death among Asian Americans ages 18-24 years old (Centers for Disease Control and Prevention, 2017). This age group also accounts for the highest proportion of suicide deaths, compared to other age groups, across all Asian Americans. Further, rates of lifetime suicidal ideation (SI) and suicide attempts (SA) are higher among Asian American emerging adults ages 18-24 (13% and 4%, respectively), than among older Asian American adults (4-8% and 1-2%, respectively), in the last national assessment conducted in 2002-2003 (Cheng et al., 2010). Thus, emerging adulthood, or the developmental period characterized by late adolescence and young adulthood (Arnett, 2000), is a vulnerable period for suicidal behavior among Asian Americans. In addition, a national college survey reported higher rates of suicidal ideation among Asian American students compared to their White counterparts (Kisch et al., 2005). Unfortunately, research on suicidal behavior among Asian Americans subgroups, particularly emerging adults, remains limited and has largely focused on East Asian populations (for a review, see Leong, Leach, Yeh & Chou, 2007). The current study sought to fill this gap in knowledge by examining racial/ethnic differences in correlates of SI among Asian American emerging adults across subgroups and compared to White emerging adults, as this information would improve the cultural sensitivity of prevention and intervention efforts for reducing suicidal behavior among Asian American emerging adults.

Suicide-related Risk in a Cultural Context
A framework that may offer some insight into the racial and ethnic disparity in suicidal behavior among emerging adults is provided by Chu and colleagues’ (2010) Cultural Theory and Model of Suicide, which suggests that cultural experiences impact risk for suicide through various avenues, including exposure to unique culturally-specific stressors, the manifestation, expression of, and response to psychological pain, and cultural meanings ascribed to and the expression of suicidal thoughts and behavior. Thus, culturally-informed values, practices, and beliefs may impact appraisal of stressful events, normative expressions and responses to distress, and attitudes toward suicide. For instance, Southeast Asian countries with strong religious identities (e.g., Buddhism in Thailand; Catholicism in the Philippines) have among the lowest suicide rates in Asia (Chen et al., 2011). This may be due, in part, to religious beliefs that promote negative attitudes toward suicide that protect against suicidal behavior. Meanwhile, the highest suicide rates are observed in East Asian countries (e.g., Korea, Japan), and researchers have cited shame, saving face, and maintaining a family’s honor as culturally-sanctioned motivators for suicide among these populations (Leong et al., 2007). Thus, the suicidal process may reflect cross-cultural differences in the pathway to suicide-related risk within Asian American populations.

**Correlates of Suicide-related Risk Among Asian American Populations**

Hopelessness and depression are among the most reliable and well-documented predictors of suicidal behavior (Miranda et al., 2008; Nock et al., 2008; Smith, Alloy & Abramson, 2006), including among Asian Americans (Cheng et al., 2010; Choi & Rogers, 2010; Lau et al., 2002; Stewart et al., 2005; Chu et al., 2018). Hopelessness, a maladaptive thought pattern characterized by a pessimistic outlook (Abramson et al., 1989), is associated with depressive symptoms and SI among adolescents in Hong Kong and Asian American adolescents.
(Stewart et al., 2005), and with a history of SI and SA among Asian American college students (Choi & Rogers, 2010). This suggests that hopelessness may be a reliable predictor of suicide-related risk among Asian American emerging adults.

Similarly, a lifetime depressive disorder was associated with close to 4 times higher odds of endorsing lifetime SI and close to 9 times higher odds of reporting a lifetime SA among Asian American adults (Cheng et al, 2010), though research on the prevalence of depression among Asian Americans has been mixed (see Kalibatseva & Leong, 2011). For instance, one study found higher rates among Asian Americans compared to European Americans (Takeuchi et al., 1998), while another found lower rates (Jackson et al., 2011), and still other studies reported no racial disparity (Austin & Chorpita, 2004; Chang et al., 2005). This may be due, in part, to within-group differences (e.g., age, ethnicity). For instance, one study found that Filipino Americans reported lower lifetime rates of depression compared to Chinese American, Vietnamese American, and other Asian American individuals (Jackson et al., 2011). It remains unclear whether differences in hopelessness and depressive symptoms, as they relate to suicide risk, would account for the racial disparity in suicidal behavior among Asian American emerging adults, relative to White emerging adults. Thus, this study aimed to examine, in part, whether the relation between correlates of SI (i.e., hopelessness, depressive symptoms) differed in their relation to SI between Asian and White American emerging adults.

**Emotion Expressivity and Suicide-related Risk**

While evidence supporting hopelessness and depressive symptoms as risk factors for suicidal behavior remains unequivocal, less information is known about underlying mechanisms that may yield hopelessness and depressive symptoms to increase vulnerability for SI or SAs. Recent research, however, has identified difficulties in regulating emotions as a potential
mechanism with empirical support (Forkmann, et al., 2014; Jacobson et al., 2011; Kaplow et al., 2014). According to Gross (2002), suppression of emotions, or a conscious inhibition of overt expressions of emotions, is a maladaptive emotion regulation strategy that requires significant cognitive resources, and there is evidence that suppression of emotions is associated with negative mental health outcomes (Gross & John, 2003). Greater difficulty in understanding and expressing emotions was associated with likelihood of reporting SI and attempts among adolescents (Jacobson et al., 2011), and adverse life events were linked to increases in SI and SA among adolescents to the degree that they increased emotion suppression (Kaplow et al., 2014). Moreover, perceived difficulty regulating emotions was associated with increased severity of SI through increases in hopelessness, even adjusting for depressive symptoms (Miranda, Tsypes, Gallagher, & Rajappa, 2013). Considering the literature on emotion regulation has largely focused on suppression, less is known about the relation between actual expression of emotions and suicide-related risk. Perhaps difficulties in emotion regulation, as manifest in reduced expression of emotions, may impact risk for SI via increases in hopelessness and depressive symptoms. Emotion expressivity may facilitate communication of emotions and enable people to obtain feedback from others to challenge the maladaptive thought patterns that maintain the hopeless thinking and depressed mood that subsequently yield suicidal thinking.

Though some research suggests that suppression of emotions is maladaptive, given its positive association with psychological symptoms, this relation may be culturally modulated (Butler et al., 2007; Kwon et al., 2013; Matsumoto et al., 2008; Morelen et al., 2013; Soto et al., 2011). For instance, women with predominantly European values (e.g., independence) were found to suppress emotions less frequently in daily life than women with Asian values (e.g., interdependence), and emotion suppression was associated with negative emotions among
women with European values but not among women with Asian values (Butler et al., 2007). Additionally, while Asian American young adults reported lower positive emotion expressivity in their families than did Black and White young adults, low positive emotion expressivity was associated with psychopathology among Black and White young adults but not among Asian American young adults (Morelen et al., 2013). This is consistent with the cultural norm hypothesis, which suggests that cultural environments engender emotional experiences and expressions unique to their social norms to impact symptom presentation (Chentsova-Dutton et al., 2007).

Whereas European American values promote independence, autonomy, and expression of emotions to fulfill individual needs, Asian American values promote interdependence, unity, and expression of emotions for the benefit of the collective group (Matsumoto et al., 2008). For instance, in a clinical sample of European American and Asian American adults, Chentsova-Dutton and colleagues (2007) found greater expression of sadness (via behavioral observation and self-report) in depressed (v. non-depressed) Asian Americans, but lower expressions of sadness in depressed (v. non-depressed) European Americans. Taken together, these findings suggest that race/ethnicity-bound cultural norms may moderate the impact of emotion expressivity on SI. Thus, the relation between emotion expressivity and risk for suicidal behavior may not only vary between White and Asian American emerging adults, but also within Asian American subgroups. Specifically, the relationship may either be attenuated among certain Asian American subgroups, or risk may increase as a function of reduced emotion expressivity.

**Suicide-related Risk Across Asian American Subgroups**

Much of the literature on suicide risk among Asian Americans has focused on East Asian populations, such as Chinese and Japanese individuals, given their longer immigration history in
the U.S. (Leong, Leach, & Kalibatseva, 2013). Unfortunately, suicide-related findings are too often generalized to Asian Americans as a homogenous group, but there is growing evidence of Asian subgroup differences in suicidal behavior (Supple et al., 2013; Lane, Cheref & Miranda, 2016; Wong et al., 2014). Indeed, some evidence suggests certain Asian American subgroups may be at elevated risk for suicidal behavior, though findings have been mixed. For instance, Chinese-Americans and Japanese-Americans have higher rates of suicide deaths compared to Filipino-Americans (Lester, 1994). Unfortunately, these are the most recent data available on national-level suicide deaths across Asian American subgroups. In a nationally representative sample of Asian American adults in the U.S., Japanese American (8%) and Korean American adults (10%) were more likely, whereas Indian American adults (1%) were less likely, to report lifetime SI (Wong et al., 2014). In contrast, using another nationally representative sample of Asian American adults in the U.S., Cheng and colleagues (2010) found higher rates of SA and SI in Chinese-Americans than Vietnamese-Americans, though not statistically significant. In contrast, one study found that Southeast Asian American adolescents (i.e., Cambodia, Hmong, Thailand, and Vietnam) were more likely to report SI than South Asian American (i.e., India) and East Asian American (i.e., China, Korea) adolescents and also more than White adolescents in the U.S. (Supple et al., 2013). Thus, there are very critical gaps in our knowledge of suicide-related risk among Asian American subgroups.

Recent research suggests group differences in the relation between well-documented correlated of suicide-related risk. For instance, one study found a stronger relation between hopelessness and SI among Indian American compared to Pakistani and Bengali American college students (Lane et al., 2016). Thus, we might expect differences in the relation between emotion expressivity and correlates of SI, such as depressive symptoms and hopelessness, not
only between White and Asian American individuals, but by Asian American subgroup. Given the shared geographic, economic, social, and political locations of the subregions of Asian countries (World Health Organization, 2018), the Asian subgroups examined in this study were as follows: East Asia, South Asia, and Southeast Asia.

**Current Study**

No research, of which we are aware, has examined the relation between emotion expressivity and SI, nor whether hopelessness and depressive symptoms help explain this relation by Asian American subgroup, in comparison to their White peers. The present study examined the relation between comfort expressing emotions and SI through hopelessness and depressive symptoms among East, South, and Southeast Asian American emerging adults, compared to White emerging adults. We hypothesized that Asian American emerging adults, particularly East Asian Americans, would report lower comfort expressing emotions, and higher levels of hopelessness, depressive symptoms, and SI compared to White emerging adults. Given previous evidence of cultural differences in expression of emotions and its impact on mental health outcomes (Chentsova-Dutton et al., 2007; Kwon et al., 2013; Morelen et al., 2013; Soto et al., 2011), we hypothesized that there would be a significant relation between emotion expressivity and SI, and that this relation would be explained by hopelessness and depressive symptoms, particularly among White emerging adults, and to a lesser extent among Asian American subgroups.

**Methods**

**Participants**

Participants were 829 emerging adults (68% females, 64% U.S.-born), ages 18-28 (\(M = 18.83, SD = 1.55\)) from a public commuter college in a large metropolitan area in the Northeast
U.S. participating in a larger study of cognitive risk for suicidal behavior among young adults (see Cheref et al., 2015; Lane et al., 2016; Polanco-Roman et al., 2018), and who identified as Asian \((n = 463; 56\%) – 48\%\) as East Asian (e.g., China, Korea, Taiwan), 33\% South Asian (e.g., Pakistan, India, Bangladesh), and 19\% as Southeast Asian (e.g., Thailand, Philippines, Vietnam) – or White \((n = 366; 44\%)\). Three percent who identified as other race/ethnicity and five participants 30 years old or older were excluded from data analysis. Asian American subgroups were categorized following guidelines outlined for Asian subregions by the World Health Organization (WHO, 2018). For more information on sample characteristics, see Table 1.

Measures

*Emotion Expressivity.*1 The Measure of Verbally Expressed Emotion (MoVEE; Jacobson, Hill, Petit, & Miranda 2015) is a 19-item self-report questionnaire assessing the ease with which individuals intentionally express to others their feelings of love, happiness, anger, and sadness (e.g., “I find it easy to show I am happy”). Participants responded to each item on a Likert-type scale ranging from 1 (strongly agree) to 4 (strongly disagree). A mean score was computed, with a higher score denoting greater levels of comfort in expression of emotions. There was strong internal consistency reliability in the present sample \((\alpha = 0.87)\), overall, and across the four subscales: love \((\alpha = 0.89)\), happiness \((\alpha = 0.83)\), anger \((\alpha = 0.84)\), and sadness \((\alpha = 0.68)\).

*Hopelessness.* The Beck Hopelessness Scale is a 20-item true/false self-report questionnaire that measures negative expectations about the self, world, and future (BHS; Beck & Steer, 1988). A total score was calculated by summing each ‘yes’ response to a negative expectation and each ‘no’ response to a positive expectation (each coded as ‘1’), with higher scores indicating higher levels of hopelessness. There was good internal consistency reliability in this study \((\alpha = 0.84)\).
Depressive symptoms. The Beck Depression Inventory-II is a 21-item self-report questionnaire assessing the presence and severity of depressive symptoms experienced in the previous two weeks (BDI-II; Beck et al., 1996). Items are rated on a Likert-type scale ranging from 0 to 3. A summation of each item response was used to compute a total score, with higher scores representing greater severity of symptom presentation. The scale scores demonstrated high internal consistency reliability ($\alpha = 0.90$) in the present sample.

Suicide Ideation. The Beck Scale for Suicide Ideation is a 21-item self-report questionnaire assessing passive versus active suicidal thoughts in the previous week. Items were rated on a Likert-type scale ranging from 0 (absent) to 2 (severe). A total score was generated by summing items 1-19 (BSS; Beck & Steer, 1993), with higher scores representing greater severity of suicidal thoughts. There was strong internal consistency reliability in this study ($\alpha = 0.89$).

Procedures

Participants completed questionnaires and received either credit toward an Introduction to Psychology research requirement or $25. Study procedures received Institutional Review Board approval.

Data Analysis

Missing data were excluded from analysis using listwise deletion, resulting in the exclusion of 5 participants. Continuous variables were centered around their respective means prior to computing interactions terms to reduce multicollinearity (Jaccard & Turisi, 2003). Racial/ethnic group differences were examined via one-way ANOVA with post-hoc Bonferroni-corrected t-tests. Differences across gender and nativity were examined using independent sample t-tests. Pearson correlations were computed to examine the associations between emotion expressivity and other study variables across racial/ethnic groups. Correlation coefficients were
transformed to z-scores via Fisher’s r-to-z transformation to compare bivariate relations across race/ethnic groups.

Separate hierarchical linear regression models were constructed to examine the relation between emotion expressivity and SI, accounting for hopelessness and depressive symptoms, with race/ethnicity entered as a moderator. Race/ethnicity was dummy coded, with White entered as the reference groups. Gender and nativity status were entered as covariates. To further probe significant interactions and to examine direct and indirect effects of emotion expressivity on SI through hopelessness and depressive symptoms, moderated by race/ethnicity, an integrated hierarchical linear regression analysis was conducted via three models, adjusting for age, gender, and nativity status, using bootstrapping procedures with 5,000 resampled distributions via PROCESS (version 3.1, model 92), a statistical computational tool for SPSS (Hayes, 2018). Statistically significant effects were those whose 95% confidence intervals did not include zero. Model 1 included emotion expressivity, and the interactions between race/ethnicity and emotion expressivity were entered in predicting hopelessness. Model 2 included emotion expressivity, hopelessness, the interactions between race/ethnicity and emotion expressivity, and the interactions between race/ethnicity and hopelessness, in predicting depressive symptoms. Model 3 included the aforementioned main effects, and interaction effects were entered, along with depressive symptoms and interaction terms between race/ethnicity and depressive symptoms, in predicting SI. An index of moderated mediation was used to formally test the conditional direct and indirect effects of emotion expressivity on suicidal ideation through hopelessness and depressive symptoms, across race/ethnic groups.

**Results**

*Descriptive and Correlation Analyses*
There were statistically significant racial/ethnic group differences in emotion expressivity, hopelessness, and depressive symptoms, but not in suicidal ideation (SI). East Asian and South Asian emerging adults reported lower levels of emotion expressivity than White emerging adults. East Asian emerging adults and Southeast Asian emerging adults reported greater hopelessness than White emerging adults. Finally, Southeast Asian emerging adults reported greater depressive symptoms than White emerging adults. There were no significant differences across Asian subgroups in any of the variables examined. There were significant gender differences in emotion expressivity, as males reported lower emotion expressivity than females. There were also significant differences by nativity in emotion expressivity. Thus, gender and nativity were entered as covariates in the regression models. For more details, see Table 1.

Emotion expressivity was negatively associated with hopelessness, depressive symptoms, and SI. There were positive relationships between emotion expressivity and both hopelessness and depressive symptoms, with no significant differences across racial/ethnic groups. There was also a positive relationship between emotion expressivity and SI across racial/ethnic groups. The correlation between emotion expressivity and SI was significantly stronger among White than among East Asian and South Asian emerging adults, $Z = 2.36$ and 2.38, respectively, $p < .05$, but was not significantly stronger than the corresponding correlation among Southeast Asian emerging adults and did not differ by Asian subgroup, $Zs < 1$. See Table 2 for more details on bivariate analyses.

_Race/Ethnicity Moderates the Relation Between Emotion Expressivity, Hopelessness, Depressive Symptoms, and Suicidal Ideation_
In model 1, emotion expressivity and interaction terms with race/ethnicity accounted for 21% of the variance in hopelessness, $R^2 = .22$, $F(10, 818) = 22.78$, $p < .001$. There was a significant main effect of emotion expressivity, $b = -3.91$, 95% CI = -4.74 – (-3.08), Southeast Asian ethnicity, $b = 1.60$, 95% CI = 0.75 – 2.45, and East Asian ethnicity, $b = 0.80$, 95% CI = 0.18 – 1.42, on hopelessness. No other main or interaction effect was significant. In model 2, emotion expressivity, hopelessness, and their respective interactions with race/ethnicity accounted for 48% of the variance in depressive symptoms, $R^2 = .48$, $F(14, 814) = 53.76$, $p < .001$. There was a significant main effect of emotion expressive expressivity, $b = -3.32$, 95% CI = -4.98 – (-1.65), and hopelessness, $b = 1.34$, 95% CI = 1.14 - 1.54, on depressive symptoms. There were no significant main effects of race/ethnicity or interactions between emotion expressivity and race/ethnicity, nor between hopelessness and race/ethnicity. In model 3, emotion expressivity, hopelessness, depressive symptoms, and their respective interaction terms with race/ethnicity accounted for 36% of the variance in SI, $R^2 = .36$, $F(18, 810) = 25.29$, $p < .001$. There was a significant main effect of hopelessness, $b = 0.33$, 95% CI = 0.22 - 0.43, depressive symptoms, $b = 0.13$, 95% CI = 0.08 - 0.17, and South Asian ethnicity, $b = -0.75$, 95% CI = -1.31 – (-0.19), on SI. There was also a significant interaction effect between hopelessness and Southeast Asian ethnicity, $b = -0.25$, 95% CI = -0.48 – (-0.01), $p = .04$. There was no significant main effect of emotion expressivity, East Asian ethnicity, or South Asian ethnicity. There was no other statistically significant interaction effect. For more details on the main and interactive effects of emotion expressivity, hopelessness, depressive symptoms, and SI by race/ethnicity, see Table 3.

*Direct and Indirect Effects of Emotion Expressivity on Suicidal Ideation Through Hopelessness and Depressive Symptoms Across Race/Ethnicity*
Among East Asian emerging adults, there was no significant direct effect of emotion expressivity on SI, $b = -0.65$, 95% C.I. = -0.32 – 1.62. However, there was a significant indirect effect through hopelessness, $b = -1.13$, 95% C.I. = -2.38 – (-0.19), through depressive symptoms, $b = -0.50$, 95% C.I. = -1.00 – (-0.11), and through hopelessness to depressive symptoms, $b = -0.74$, 95% C.I. = -1.45 – (-0.24). For more details, see Figure 1.

Among South Asian emerging adults, there was no significant direct effect of emotion expressivity on SI, $b = 0.52$, 95% C.I. = -0.55 – 1.60. The indirect effect through hopelessness was not significant, $b = -0.73$, 95% C.I. = -1.74 – 0.001). However, there was a significant indirect effect through depressive symptoms, $b = -0.29$, 95% C.I. = -0.65 – (-0.05), and through hopelessness to depressive symptoms, $b = -0.29$, 95% C.I. = -0.69 – (-0.05). For more details, see Figure 2.

Among Southeast Asian emerging adults, there was no direct effect of emotion expressivity on SI, $b = -0.77$, 95% C.I. = -2.41 – 0.87. Additionally, there was no indirect effect through hopelessness, $b = -0.41$, 95% C.I. = -1.97 – 0.88, or depressive symptoms, $b = -0.20$, 95% C.I. = -1.07 – 0.41). However, there was a significant indirect effect through hopelessness to depressive symptoms, $b = -1.15$, 95% C.I. = -2.52 – (-0.17). For more details, see Figure 3.

Among White emerging adults, there was no direct effect of emotion expressivity on SI, $b = -0.51$, 95% C.I. = -1.24 – 0.22. However, there was a significant indirect effect through hopelessness, $b = -1.28$, 95% C.I. = -2.05 – (-0.61), depressive symptoms, $b = -0.43$, 95% C.I. = -0.75 – (-0.17), and through hopelessness to depressive symptoms, $b = -0.67$, 95% C.I. = -1.18 – (-0.30). For more details, see Figure 4.

Although there was a significant indirect effect of emotion expressivity on SI through hopelessness among White and East Asian emerging adults, but not among South Asian or
Southeast Asian emerging adults, the latter effects were not significantly different from White emerging adults, $b = 0.55$, 95% CI = -0.65 – 1.63, and, $b = 0.87$, 95% CI = -0.84 – 2.34, respectively. Similarly, although there was a significant indirect effect of emotion expressivity on SI through depressive symptoms among White, East Asian, and South Asian emerging adults, but not among Southeast Asian emerging adults, the latter was not significantly different from White emerging adults, $b = 0.22$, 95% CI = -0.68 – 0.88.

**Discussion**

The present study examined the direct and indirect relation between emotion expressivity and suicidal ideation (SI) through hopelessness and depressive symptoms, and whether this relation was moderated by race/ethnicity across Asian American subgroups and White emerging adults. While no racial/ethnic group differences were found in SI, there were group differences in correlates of SI. Specifically, Southeast Asian American emerging adults reported more depressive symptoms than their White counterparts, though no difference emerged across Asian American subgroups. Southeast Asian American and East Asian American emerging adults also reported greater hopelessness, compared to White individuals. Furthermore, East Asian and South Asian American emerging adults, but not Southeast Asian American emerging adults, reported lower levels of emotion expressivity than White emerging adults. This may be due, in part, to within-group differences among Southeast Asian Americans, as previous research found that Filipino Americans show less adherence to emotional self-control than Chinese, Japanese, and Korean Americans (Kim et al., 2001). Our hypothesis was partially supported, in that there was an indirect relation between emotion expressivity and SI through hopelessness and depressive symptoms, particularly among White emerging adults and, to varying degrees, across Asian American subgroups. Specifically, hopelessness was a statistically reliable explanatory
factor among White and East Asian emerging adults independently of, and in conjunction, with depressive symptoms. Meanwhile, depressive symptoms, but not hopelessness, was an explanatory factor among South Asian emerging adults. Lastly, whereas hopelessness and depressive symptoms did not independently explain the relation among Southeast Asian American emerging adults, the serial relation of emotion expressivity to suicidal ideation through hopelessness to depressive symptoms was statistically reliable.

The present findings are consistent with previous research suggesting that reduced expression of emotions is associated with elevated depressive symptoms and a higher likelihood of reporting SI (Jacobson et al., 2011), which may extend to Asian American subpopulations. This helps clarify previous findings demonstrating that reduced expression of emotions was not associated with psychological maladjustment among Asian Americans (Butler et al., 2007; Kwon et al., 2013; Morelen et al., 2013; Soto et al., 2011), to suggest that the relation between reduced emotion expressivity and psychological symptoms like SI is nuanced and likely influenced by within-group differences. Specifically, reduced emotion expressivity may increase SI risk among White and Asian American subgroups, though the role of hopelessness and depressive symptoms varies across groups. Whereas hopelessness may be a reliable predictor of SI risk among White and East Asian Americans with reduced emotion expressivity, depressive symptoms is also a reliable risk factor among White, East, and South Asian American emerging adults. Meanwhile, among Southeast Asian American emerging adults, hopelessness and depressive symptoms are less robust when independent of one another. However, as observed among White, East Asian, and South Asian American emerging adults, reduced emotion expressivity may increase SI risk to the degree that it increases hopelessness, and in turn, increases depressive symptoms. Thus, reduced emotion expressivity may differentially impact risk for SI among White and across
Asian American emerging adults, as hopelessness and depressive symptoms differentially help explain this relation across groups.

The present findings support the existing literature demonstrating ethnic differences in the expression of emotions (Matsumoto et al., 2008), particularly as it relates to mental health outcomes (Chentsova-Dutton et al., 2007). It is worth noting that Southeast Asian individuals in the present sample have a greater representation of foreign-born (v. U.S.-born) emerging adults than do the other subgroups, which may have contributed to the findings. This is important, as research has also identified specific sociocultural factors that may impact risk for suicidal behavior among Asian Americans, including acculturation and acculturative stress, experiences of discrimination, and ethnic identity (Cheng et al., 2010; Chu et al., 2014; Duldulao et al., 2009; Hwang & Goto, 2008; Ting & Hwang, 2009; Leong, Leach, Yeh & Chou, 2007; Wong et al., 2011; Wong et al., 2014). Indeed, Chu and colleagues (2018) found culture-specific factors (i.e., minority stress, social discord, idioms of distress, attitudes toward suicide) associated with suicide-related risk in a community sample of Asian American adults above and beyond more traditional risk factors (e.g., hopelessness, depression). Nevertheless, ethnic differences in cultural norms related to emotion expressivity might explain the differential relationship between emotion expressivity and SI among Asian American subgroups, as reduced emotion expressivity may differentially confer risk for suicidal thinking across Asian American subgroups. Additionally, the mechanism of risk for SI (and suicide attempts) may differ among Southeast Asian Americans emerging adults, compared to South and East Asian Americans. Future research should thus investigate how sociocultural factors may differentially impact suicide-related risk across Asian American subgroups, and how the expression of emotions may impact
risk for suicidal ideation and attempts in the context of stressors related to race, ethnicity, and immigration.

The present findings also lend support to the cultural theory and model of suicide by Chu and colleagues (2010), which proposes that racial/ethnic differences in suicidal thoughts and behavior may be due, in part, to culture-specific influences in exposures to distress and the manifestation and expression of suicidal behavior. It further highlights the need to better understand racial/ethnic differences in risk for suicidal behavior to accurately identify individuals at greatest risk and to provide a culturally sensitive standard of care. Further exacerbating risk is the lack of mental health service use or perception of need for services among Asian American populations endorsing suicidal thoughts and behaviors (Chu et al., 2011), though it is unclear if these findings generalize across Asian American subgroups and warrant further examination. Contrary to what was expected, there were no ethnic differences in reported SI – neither by nativity nor across subgroups. This could be due, in part, to hidden ideation, as Asian Americans may be unlikely to disclose their suicidal distress (Chu et al., 2018). In this context, reduced emotion expressivity may increase risk for suicidal behavior, particularly in East and South Asian American emerging adults, to the extent that it contributes to hidden ideation. Further, hidden ideation has not only been linked to increased severity of suicidal distress (Chu et al., 2018), but also to culture-specific factors (e.g., minority stress, idioms of distress, attitudes toward suicide, social discord). No ethnic differences in SI in the present sample could also be due, in part, to differences in level of acculturation. For instance, Wong and colleagues (2014) found a stronger relation between SI and acculturation (as measured by proportion of time in the U.S.) among Indian Americans, and a weaker relation among Chinese, Japanese, Korean, and Vietnamese Americans. Thus, further research is
warranted on the relation between emotion expressivity and disclosure of suicidal ideation across Asian American subgroups and the extent to which acculturation impacts disclosure.

There is also evidence that the valence of the emotion expressed may differentially impact risk for suicidal thoughts (Polanco-Roman et al., 2018), and may be differentially culturally modulated (Chentsova-Dutton et al., 2007; Morelen et al., 2013). For instance, while expression of sadness has been found to differ between Asian American (v. White) depressed adults in response to a sad prompt, but not in response to an amusement prompt. Further, another study reported that expression of love, in particular, but not happiness, sadness or anger, partially mediated the relation between emotion reactivity and suicidal ideation (Polanco-Roman et al., 2018). This was not examined across racial/ethnic groups, so it is unclear whether the finding generalizes across White and Asian American subgroups. Perhaps the expression of love serves to protect against suicide risk by fostering social connections and access to social support to varying degrees across Asian American subgroups. Examining the differential impact of the valence of emotion expressed was beyond the scope of the present study, and thus, further research is warranted to determine whether the valence (i.e., positive versus negative) of the emotion expressed differentially impacts risk for engaging in suicidal behavior.

Strengths and Limitations

Strengths of his study include the diversity of the sample and its examination of a gap in knowledge about suicide-related risk among Asian American emerging adults. Despite similarities within the various Asian American subgroups examined, they are not homogenous within themselves. There may be variability in factors that were not accounted for in the analyses (e.g., SES, acculturation). The present study highlights the need to account for sociocultural factors in our understanding of suicide risk. Study limitations include reliance on self-report that
is subject to social desirability bias and respondent variance. This is particularly the case in Asian American populations, who are unlikely to disclose suicidal ideation, further increasing risk for suicide-related behaviors (Chu et al., 2018). Thus, our assessment of SI in the present sample may be a conservative estimate and underreported. Another limitation is the cross-sectional design, which compromises inferences of causality. Finally, the study consisted of a non-clinical, predominantly female sample of college students, and findings may not generalize to emerging adults in the larger community or capture more acute symptoms.

Clinical Implications

There are several clinical implications of the present findings. First, prevention efforts targeted at reducing risk for suicide among Asian American emerging adults should recognize the variation in risk profile for suicide-related risk across Asian American subgroups and account for ethnic differences in emotion expressivity as well as correlates of suicidal behavior such as hopelessness and depressive symptoms. Additionally, interventions and treatments centered around emotion expressivity should address individuals’ expression of emotions as one potential avenue to decrease vulnerability to SI, via reductions in hopelessness and depressive symptoms. Taken together, these steps would help improve identification of individuals at risk, facilitate outreach and prevention efforts, and strengthen the cultural sensitivity of mental health services targeted at reducing suicide-related risk, particularly among Asian American emerging adults.

Conclusion

This study suggests both variation and similarities in the pathway of vulnerability to SI across Asian American subgroups, compared to White emerging adults – specifically, in the relation between emotion expressivity through hopelessness and depressive symptoms. Future research should investigate how variation in sociocultural factors and norms differentially impact
emotion expressivity and its sequelae among Asian American subgroups. Given that Asian Americans are a growing racial/ethnic population in the United States, more research should focus on examining ethnic differences within subgroups to provide prevention and intervention services tailored to this diverse population. Thus, suicide prevention programs and treatments should consider unique cultural beliefs, values, and experiences of different Asian American subgroups in understanding the various pathways of suicide risk that may make individuals more prone to thinking about or attempting suicide.
References


Footnotes

1 Measurement invariance was examined across racial/ethnic groups via several indices of model fit, with RMSEA = 0.07, CFI = .01, TLI = .90, and SRMR = .06. Residuals and modification indices indicated no ill-fit in the model. Among the East Asian subgroup, all items loaded onto a component at values of .40 or above, except for one item on the sadness subscale ("Expressing sadness makes me feel anxious/nervous"). Among the Southeast Asian subgroup, all items loaded onto a component at values of .40 or above, except for two items on the love subscale ("I would not want to tell someone that I love them" and "I do not want someone I love to know that I love them"), one item on the happiness subscale ("I find it difficult to show when I am happy"), and two items on the sadness subscale ("I am embarrassed to tell a person I am sad" and "Expressing sadness makes me feel anxious/nervous").
Table 1

Sample characteristics and racial/ethnic group differences in emotion expressivity, hopelessness, depressive symptoms and suicidal ideation.

<table>
<thead>
<tr>
<th>Demographics</th>
<th>White (n = 366)</th>
<th>East Asian (n = 221)</th>
<th>South Asian (n = 152)</th>
<th>Southeast Asian (n = 90)</th>
<th>F/X²</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>19.10 (1.91)</td>
<td>18.79 (1.25)</td>
<td>18.52 (1.19)</td>
<td>18.37 (0.78)</td>
<td>8.52**</td>
<td>&lt; .01</td>
</tr>
<tr>
<td>Female</td>
<td>251 (69%)</td>
<td>146 (66%)</td>
<td>100 (66%)</td>
<td>63 (70%)</td>
<td>0.86</td>
<td>.84</td>
</tr>
<tr>
<td>U.S.-born</td>
<td>273 (74%)</td>
<td>130 (59%)</td>
<td>67 (44%)</td>
<td>59 (64%)</td>
<td>45.37**</td>
<td>&lt; .01</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variables</th>
<th>White (n = 366)</th>
<th>East Asian (n = 221)</th>
<th>South Asian (n = 152)</th>
<th>Southeast Asian (n = 90)</th>
<th>F/X²</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>MoVEE</td>
<td>3.03 (0.45)</td>
<td>2.88 (0.42)</td>
<td>2.87 (0.48)</td>
<td>2.98 (0.39)</td>
<td>7.83**</td>
<td>&lt; .01</td>
</tr>
<tr>
<td>BHS</td>
<td>3.77 (3.77)</td>
<td>5.15 (4.06)</td>
<td>4.41 (4.27)</td>
<td>5.58 (4.33)</td>
<td>8.16**</td>
<td>&lt; .01</td>
</tr>
<tr>
<td>BDI</td>
<td>10.71 (8.68)</td>
<td>12.52 (8.87)</td>
<td>12.68 (9.26)</td>
<td>14.12 (8.55)</td>
<td>4.89**</td>
<td>&lt; .01</td>
</tr>
<tr>
<td>BSS</td>
<td>1.05 (3.52)</td>
<td>1.31 (3.85)</td>
<td>0.68 (2.38)</td>
<td>1.56 (3.46)</td>
<td>1.60</td>
<td>.19</td>
</tr>
</tbody>
</table>

Note. MoVEE = Emotions expressivity; BHS = Hopelessness; BDI = Depressive symptoms; BSS = Suicidal Ideation.

+ p < .10; * p < .05; ** p < .01. a,b group comparisons were significantly different
Table 2

Correlations for emotion expressivity, hopelessness, depressive symptoms and suicidal ideation across racial/ethnic groups.

<table>
<thead>
<tr>
<th></th>
<th>White/ East Asian</th>
<th></th>
<th>South Asian/ Southeast Asian</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>1. MoVEE</td>
<td></td>
<td>-.47**</td>
<td>-.44**</td>
<td>.37**</td>
</tr>
<tr>
<td>2. BHS</td>
<td>.40**</td>
<td></td>
<td>.65**</td>
<td>.59**</td>
</tr>
<tr>
<td>3. BDI</td>
<td>.37**</td>
<td>.63**</td>
<td></td>
<td>.57**</td>
</tr>
<tr>
<td>4. BSS</td>
<td>.19**</td>
<td>.50**</td>
<td>.52**</td>
<td></td>
</tr>
</tbody>
</table>

Note. Correlations are displayed above the diagonal for White and South Asian individuals and below the diagonal for East Asian and Southeast Asian individuals. MoVEE = Emotion expressivity; BHS = Hopelessness; BDI = Depressive symptoms; BSS = Suicidal Ideation. ^ p < .10; * p = .05 ** p < .01.
Table 3

Hierarchical linear regression models with emotion expressivity predicting hopelessness (model 1); emotion expressivity and hopelessness predicting depressive symptoms (model 2); emotion expressivity, hopelessness, and depressive symptoms predicting suicidal ideation (model 3) with respective interaction terms with race/ethnicity, adjusting for age, gender, and nativity

<table>
<thead>
<tr>
<th></th>
<th>$b_1$</th>
<th>SE</th>
<th>$p$</th>
<th>Adj. $R^2$</th>
<th>$b_2$</th>
<th>SE</th>
<th>$p$</th>
<th>Adj. $R^2$</th>
<th>$b_3$</th>
<th>SE</th>
<th>$p$</th>
<th>Adj. $R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-0.05</td>
<td>0.08</td>
<td>.58</td>
<td>.22*</td>
<td>-0.14</td>
<td>0.15</td>
<td>.36</td>
<td>.48*</td>
<td>0.09</td>
<td>0.06</td>
<td>.17</td>
<td>0.36*</td>
</tr>
<tr>
<td>Female</td>
<td>-0.16</td>
<td>0.27</td>
<td>.58</td>
<td>2.04</td>
<td>0.48</td>
<td>&lt;.01**</td>
<td>0.45</td>
<td>0.21</td>
<td>0.03*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>U.S.-born</td>
<td>0.16</td>
<td>0.27</td>
<td>.55</td>
<td>-0.19</td>
<td>0.49</td>
<td>.69</td>
<td>-0.00</td>
<td>0.21</td>
<td>.99</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>East Asian</td>
<td>0.80</td>
<td>0.32</td>
<td>.01*</td>
<td>-0.50</td>
<td>0.57</td>
<td>.38</td>
<td>-0.39</td>
<td>0.25</td>
<td>.11</td>
<td></td>
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<tr>
<td>South Asian</td>
<td>0.03</td>
<td>0.39</td>
<td>.94</td>
<td>0.37</td>
<td>0.66</td>
<td>.58</td>
<td>-0.75</td>
<td>0.29</td>
<td>&lt;.01*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Southeast Asian</td>
<td>1.60</td>
<td>0.43</td>
<td>&lt;.01**</td>
<td>0.55</td>
<td>0.80</td>
<td>.49</td>
<td>-0.29</td>
<td>0.25</td>
<td>.17</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MoVEE</td>
<td>-3.91</td>
<td>0.42</td>
<td>&lt;.01**</td>
<td>-3.32</td>
<td>0.85</td>
<td>&lt;.01**</td>
<td>-0.52</td>
<td>0.37</td>
<td>.17</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MoVEE X East Asian</td>
<td>0.07</td>
<td>0.72</td>
<td>.91</td>
<td>0.03</td>
<td>1.42</td>
<td>.98</td>
<td>1.17</td>
<td>0.62</td>
<td>.06*</td>
<td></td>
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</tr>
<tr>
<td>MoVEE X South Asian</td>
<td>0.05</td>
<td>0.75</td>
<td>.95</td>
<td>-1.39</td>
<td>1.49</td>
<td>.35</td>
<td>1.04</td>
<td>0.66</td>
<td>.12</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>MoVEE X Southeast Asian</td>
<td>-1.05</td>
<td>1.06</td>
<td>.32</td>
<td>2.13</td>
<td>2.12</td>
<td>.32</td>
<td>-0.26</td>
<td>0.92</td>
<td>.78</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>BHS</td>
<td>1.34</td>
<td>0.10</td>
<td>&lt;.01**</td>
<td>0.33</td>
<td>0.05</td>
<td>&lt;.01*</td>
<td>0.13</td>
<td>0.02</td>
<td>&lt;.01**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BHS X East Asian</td>
<td>-0.08</td>
<td>0.16</td>
<td>.61</td>
<td>-0.04</td>
<td>0.08</td>
<td>.59</td>
<td>0.03</td>
<td>0.04</td>
<td>.43</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BHS X South Asian</td>
<td>-0.11</td>
<td>0.17</td>
<td>.51</td>
<td>-0.14</td>
<td>0.09</td>
<td>.12</td>
<td>-0.07</td>
<td>0.04</td>
<td>.11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BHS X Southeast Asian</td>
<td>0.06</td>
<td>0.20</td>
<td>.77</td>
<td>-0.25</td>
<td>0.12</td>
<td>.04*</td>
<td>0.04</td>
<td>0.06</td>
<td>.48</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. White is the reference racial/ethnic group. MoVEE = Emotion expressivity; BHS = Hopelessness; BDI = Depressive symptoms; BSS = Suicidal Ideation. *p < .10; *p < .05; **p < .01.
Figure 1

Direct and indirect effect of emotion expressivity on suicidal ideation through hopelessness and depressive symptoms in East Asian emerging adults, adjusting for age, gender, and nativity (*p < .05)

- Emotion Expressivity → Hopelessness: $b = 1.27$, 95% CI = 1.02, 1.50*
- Emotion Expressivity → Depressive Symptoms: $b = 0.15$, 95% CI = 0.09, 0.21*
- Hopelessness → Suicidal Ideation: $b = -1.13$, 95% CI = -2.38, -0.19 (Indirect effect through hopelessness)*
- Depression → Suicidal Ideation: $b = -0.50$, 95% CI = -1.00, -0.11 (Indirect effect through depression)*
- Hopelessness → Depression: $b = -3.21$, 95% CI = -5.56, -0.84*
- Depressive Symptoms → Suicidal Ideation: $b = 0.30$, 95% CI = 0.16, 0.44*
- Emotion Expressivity → Depressive Symptoms: $b = 0.65$, 95% CI = -0.32, 1.62
Figure 2

Direct and indirect effect of emotion expressivity on suicidal ideation through hopelessness and depressive symptoms in South Asian emerging adults, adjusting for age, gender, and nativity (*p < .05)

Emotion Expressivity → Hopelessness

b = -0.52, 95% CI = -0.55, 1.60

Hopelessness → Depressive Symptoms

b = -4.81, 95% CI = -7.25, -2.37*

b = -3.89, 95% CI = -5.21, -2.57*

Depressive Symptoms → Suicidal Ideation

b = 0.19, 95% CI = 0.08, 0.30*

b = 0.06, 95% CI = 0.004, 0.11*

Emotion Expressivity → Suicidal Ideation

b = -0.73, 95% CI = -1.74, 0.00 (Indirect effect through hopelessness)

b = -0.29, 95% CI = -0.65, -0.05 (Indirect effect through depression) *

b = -0.29, 95% CI = -0.69, -0.05 (Indirect effect through hopelessness to depression) *
Figure 3

Direct and indirect effect of emotion expressivity on suicidal ideation through hopelessness and depressive symptoms in Southeast Asian emerging adults, adjusting for age, gender, and nativity (*p < .05)

**Emotion Expressivity**

**Hopelessness**

$b = 1.39,$

$95\% \text{ CI} = 1.08, 1.69^*$

**Depressive Symptoms**

$b = 0.18,$

$95\% \text{ CI} = 0.07, 0.30^*$

$b = -0.77,$

$95\% \text{ CI} = -2.41, 0.87$

$b = -0.41, 95\% \text{ CI} = -1.97, 0.88$ (Indirect effect through hopelessness)

$b = -0.20, 95\% \text{ CI} = -1.07, 0.41$ (Indirect effect through depression)

$b = -1.15, 95\% \text{ CI} = -2.52, -0.17$ (Indirect effect through hopelessness to depression)$^*$
Figure 4

Direct and indirect effect of emotion expressivity on suicidal ideation through hopelessness and depressive symptoms in White emerging adults, adjusting for age, gender, and nativity (*p < .05)

Emotion Expressivity

Emotion Expressivity

Hopelessness

Hopelessness

Depressive Symptoms

Depressive Symptoms

Suicidal Ideation

Suicidal Ideation

b = 1.32,
95% CI = 1.12, 1.52*

b = -1.28, 95% CI = -2.05, -0.61 (Indirect effect through hopelessness)*

b = -0.43, 95% CI = -0.75, -0.17 (Indirect effect through depression)*

b = -0.67, 95% CI = -1.17, -0.30 (Indirect effect through hopelessness to depression)*

b = -0.51,
95% CI = -1.24, 0.22

b = -3.29,
95% CI = -4.96, -1.63*

b = 0.32,
95% CI = 0.09, 0.17*

b = -0.43,
95% CI = -0.75, -0.17 (Indirect effect through depression)*

b = -0.67, 95% CI = -1.17, -0.30 (Indirect effect through hopelessness to depression)*

b = -3.85,
95% CI = -4.61, -3.09*

b = -3.29,
95% CI = -4.96, -1.63*

b = 0.13,
95% CI = 0.09, 0.17*