Ethnoracial Group Differences in the Effects of Rumination on Psychological Well-being

Yikai Xu[1] and William Tsai[1]

[1]New York University

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Abstract

Background: Is rumination always associated with poorer mental health? Although some work suggests that the answer to this question is "yes", some studies suggest that there are adaptive and maladaptive types of rumination that have distinct influences on mental health. Moreover, a growing number of studies have now shown rumination to have weaker maladaptive effects among individuals from interdependent cultural contexts (e.g., Asian Americans). The current study examined ethnoracial group differences in the use and associations of rumination types (i.e., brooding, casual analysis, reflective pondering, and problem-solving analysis) with depressive symptoms and life satisfaction among a diverse sample of Asian Americans, Latinx Americans, and European Americans. **Methods:** 198 Asian Americans, 168 Latinx Americans, and 235 European Americans recruited from Amazon Mechanical Turk completed an online cross-sectional survey. **Results:** Controlling for other rumination types, brooding emerged as a maladaptive type of rumination with strong associations with greater depressive symptoms and lower life satisfaction among all ethnoracial groups. In contrast, problem-solving analysis emerged as an adaptive type of rumination with associations with lower depressive symptoms and greater life satisfaction among Asian and Latinx Americans only, whereas this relationship was not significant among European Americans. **Discussion**: Findings suggest the importance of considering culture in distinguishing between adaptive versus maladaptive types of rumination. The strength of the association of rumination types with psychological well-being varied by ethnoracial group in theoretically expected ways. Implications for culturally sensitive interventions are discussed.

Introduction

Rumination has been characterized by a tendency to repetitively focus on the causes, symptoms, and consequences of one's sad moods or negative experiences (Watkins et al., 2020). A large body of research has found rumination to be associated with higher levels of depressive and anxiety symptoms (Calmes & Roberts, 2007; Nolen-Hoeksema, 2000; Watkins, 2008), lower life satisfaction (Sütterlin et al., 2012; Zheng et al., 2019), and impaired ability to solve problems (Hong, 2007; Watkins et al., 2020). Although these studies point to a strong relationship between rumination and psychopathology (Aldao et al., 2010), rumination has been conceptualized as a multidimensional construct with both adaptive and maladaptive qualities (Andrews & Thomson, 2009; Barbic et al., 2014; Sevcikova et al., 2020; Smith & Alloy, 2009; Watkins, 2008). For instance, positing rumination as a solely detrimental process would minimize its role in the problem-solving process. Rumination may be instrumental for gaining insight into one's problems to resolve unattained goals. However, attempts at understanding which types of rumination may be adaptive while others are maladaptive have largely been conducted within Western contexts among European Americans. There is a growing body of research that suggests that rumination may be more adaptive among individuals from collectivistic cultures due to cross-cultural differences in how people internalize and make sense of negative emotions and experiences (De Vaus et al., 2018; Chang et al., 2010; Choi & Miyamoto, 2022). Thus, the present study contributes to the literature by examining cross-cultural differences in which rumination types may be adaptive or maladaptive for mental health. The present study is the first to our knowledge to examine the influence

of rumination types on psychological well-being among three ethnoracial groups (i.e., European Americans, Asian Americans, and Latinx Americans).

Adaptive and Maladaptive Types of Rumination

Conceptualizing rumination as a multidimensional construct allows us to identify which types of rumination may be adaptive or maladaptive. This multidimensional conceptualization helps explain contradictory and mixed findings regarding the role of rumination in problem-solving and their effects on depressive symptoms and depression (Joormann et al., 2006). Trapnell and Campbell (1999) were among the first to distinguish between adaptive versus maladaptive types of rumination. Based on the motivation and five-factor model of personality, self-rumination was identified as a type of maladaptive rumination that is characterized by a negative, chronic, and repetitive self-focus that is motivated by losses and threats to the self. In contrast, self-reflection was identified as a type of adaptive rumination that is characterized by openness to experiences and motivated by curiosity. Consistent with these views, self-rumination was associated with higher levels of depression and increased reactivity to negative interpersonal experiences, whereas self-reflection was associated with greater happiness and lower levels of depression (Trapnell & Campbell, 1999; Elliott & Coker, 2008; Takano & Tanno, 2009).

In line with Trapnell and Campbell's (1999) conceptualization of rumination, *brooding* and *reflective pondering* have also been examined as maladaptive and adaptive types of rumination, respectively (Treynor et al., 2003). Like self-rumination, brooding is characterized by a repetitive passive self-focus on failures and motivated by self-criticism and has been consistently linked with maladaptive outcomes, including associations with depressive and anxiety symptoms (Cox et al., 2012; Treynor et al., 2003, Moulds et al., 2007) and greater suicidal ideation (Miranda & Nolen-Hoeksema, 2007). Conversely, like self-reflection, reflective pondering is characterized by a purposeful self-focus on identifying potential solutions and overcoming problems. However, whether reflective pondering can be unequivocally conceptualized as an adaptive type of rumination is still inconclusive as findings have been mixed. In some studies, reflective pondering has been shown to be adaptive with associations with lower depressive symptoms and a lack of associations with anxiety and self-esteem (Treynor et al., 2003; Takano & Tanno, 2009; Joormann et al., 2006). Among other studies, reflective pondering has been associated with maladaptive outcomes, such as greater depressive symptoms and suicide ideation (Rude et al., 2007; Miranda & Nolen-Hoeksema, 2007).

Another distinction between types of rumination involved with depression was made by Andrews and Thomson (2009), who hypothesized that *causal analysis* and *problem-solving analysis* are distinct cognitive processes that unfold during rumination. Causal analysis is characterized by sustained attempts to understand one's causal involvement and the casual networks in negative experiences, and often results in feelings of self-blame. Findings on the maladaptive effects of causal analysis on mental health are mixed, with positive associations with depressive symptoms among a few studies (Bartoskova et al., 2018; Maslej et al., 2020), but also no associations with depressive symptoms among a sample of clinically depressed individuals (Sevcikova et al., 2020). Problem-solving analysis has been characterized as analytical attempts to identify ways to improve the situation or to identify ways to prevent a similar problem in the future (Andrews & Thomson, 2009; Barbic et al., 2014; Sevcikova et al., 2020). There is some evidence that problem-solving analysis is an adaptive type of rumination, with negative associations with depressive symptoms among clinical and non-clinical samples (Bartoskova et al., 2018; Sevcikova et al., 2020).

The mixed findings in the literature about which rumination type is adaptive or maladaptive are likely due to the overlapping and reciprocal nature of the rumination process (Joormann et al., 2006; Miranda & Nolen-Hoeksema, 2007; Takano & Tanno, 2009). When individuals attempt to understand themselves and their problems by ruminating, insights and potential solutions that are generated by adaptive types of rumination (e.g., reflective pondering or problem-solving analysis) may be overshadowed or intruded upon by feelings of self-blame and negative affect that are generated by maladaptive types of rumination (e.g., brooding). As such, the present study aims to investigate the unique predictive validity of four types of rumination (i.e., brooding, reflective pondering, causal analysis, problem-solving analysis) on depressive symptoms and life satisfaction to clarify which types of rumination may be adaptive while others are maladaptive.

Cultural Influences on Rumination

While most of the theoretical and empirical work on rumination and mental health has been conducted within independent cultures (e.g., the United States), a growing number of studies have found cultural differences in the extent to which rumination is associated with maladaptive outcomes (Chang et al., 2010; Choi & Miyamoto, 2022; Grossmann & Kross, 2010; Kwon et al., 2013). For example, the associations between rumination and depressive symptoms and anxiety were weaker among Asian Americans than their European American counterparts (Chang et al., 2010; Choi & Miyamoto, 2022). Moreover, Russian individuals displayed less distress and a more adaptive pattern of self-reflection after engaging in rumination (Grossmann & Kross, 2010). These cross-cultural differences can be understood in light of the cultural fit hypothesis, which suggests that how well one's behavior or thoughts fit cultural expectations and norms can influence what is adaptive for psychological well-being (Tsai & Lu, 2018; Kitayama et al., 2010; De Leersnyder et al., 2014; Friedman et al., 2010).

Cross-cultural differences in the maladaptive effects of rumination may stem from cultural variations in dialectical views of emotions (Miyamoto & Ryff, 2011). In independent cultures such as the United States, the pursuit of positive emotions is valued and encouraged whereas negative emotions are avoided and discouraged (Miyamoto et al., 2017). In independent contexts, high levels of negative emotions are viewed as a signal of personal failure and an inability to take care of one's difficulties (Barr-Zisowitz, 2000). By contrast, in interdependent cultures such as Japan, beliefs about positive and negative emotions are rooted in dialecticism (Spencer-Rodgers et al., 2010), which is characterized by expectation and acceptance of contradiction (Peng & Nisbett, 1999). Dialectical beliefs about emotion suggest that positive and negative emotions are mutually connected and thus can co-exist and co-occur. It points to the value of attending to *positive* aspects of negative emotions and *negative* aspects of positive emotions. Under this dialectic view, negative emotions are accepted and even believed to be necessary for self-improvement (Heine et al., 1999). Consistent with these views, prior cross-cultural research has shown that Japanese individuals were more likely than Americans to perceive positive features of negative emotions, and value negative emotions as important motivations for improving the self (Uchida & Kitayama, 2009). Even more, individuals with high dialectical views displayed a preference for negative self-verifying feedback compared with those with lower dialectical views (Chen et al., 2006). These cross-cultural differences in desirability and motivational utility of negative emotions may explain why rumination is less maladaptive among individuals from interdependent contexts. That is, among individuals from interdependent contexts, even when rumination generates negative moods, these negative emotions may not be as *threatening* to the self, which thus allows for insight-generation and problem-solving to be better facilitated by adaptive types of rumination. However, whether cultural differences will emerge among all rumination types is not yet clear.

To our knowledge, prior work on cross-cultural differences in the maladaptive effects of rumination on mental health has largely compared Asian/Asian Americans and European Americans (Chang et al., 2010; Choi & Miyamoto, 2022; Kwon et al., 2013). However, scholars have increasingly argued that examining the East-West dichotomy is insufficient as it does not capture the full range of ways that cultural variations in psychological processes exist (Campos & Kim, 2017; Okazaki, 2018). Thus, the present study aimed to contribute to this literature by also examining the influence of rumination on psychological well-being among Latinx Americans. Like Asian Americans, Latinx cultural contexts emphasize interdependent self-views and value close supportive family relationships. However, more similar to independent cultural contexts, positive emotions are highly desired and negative emotions are viewed as relatively inappropriate and undesirable among Latinx Americans (Senft et al., 2022; Ramirez-Espaza et al., 2019). Thus, a central question is whether cross-cultural differences in the maladaptive effects of rumination on mental health found between Asian Americans and European Americans in prior work will generalize to Latinx Americans.

The Current Study

The present study aimed to clarify which rumination types, for which ethnoracial group, were adaptive or maladaptive for psychological well-being by examining the predictive validity of four rumination types (i.e., brooding, casual analysis, reflective pondering, and problem-solving analysis) on depressive symptoms

and life satisfaction among Asian Americans, Latinx Americans, and European Americans. Based on extant literature, we hypothesized that brooding would be associated with greater depressive symptoms and lower life satisfaction for all ethnoracial groups, but the magnitude would be weaker among Asian Americans. We also hypothesized that problem-solving analysis and reflective pondering would not be associated with depressive symptoms, or even be negatively associated with depressive symptoms. Given the relatively fewer and mixed findings on causal analysis in prior work, our hypotheses were exploratory. Finally, our hypotheses for Latinx Americans were exploratory given the limited studies that have examined cross-cultural differences in the effects of rumination on psychological well-being among this group.

Method

Participants & Procedure

The present study involves secondary analysis of a larger study with the aim of validating a novel multidimensional emotion scale with 56 items. The sample size was determined with the recommended sample size of 10 participants per survey item (Clark & Watson, 1995). A total of 235 European Americans (60.43% female; $M_{\text{age}} = 42.81, SD = 13$), 198 Asian Americans (54.55% female; $M_{\text{age}} = 34.58$, $SD = 10.27$), and 168 Latinx Americans (55.95% female; $M_{\text{age}} = 33.56, SD = 10.03$) were recruited from Amazon Mechanical Turk. Participants completed a cross-sectional online survey hosted on the Qualtrics platform and received $3.50 as compensation for participating in the study. Among the participants, 47.09% reported their highest education level to be college, followed by some college education (24.96%) and a graduate or professional degree (17.64%).

Measures

Types of Rumination

Brooding and reflective pondering were assessed by the 10-item brooding and reflective pondering subscales of the Ruminative Responses Scale (RRS; Nolen-Hoeksema & Morrow, 1991; Treynor et al., 2003). The RRS is a self-report measure that assessed the individual tendencies to ruminate and is rated on a 4-point Likert-type scale ranging from 1 (Almost never) to 4 (Almost always). The brooding subscale assessed one's cognitive tendencies to critically question their negative experiences (e.g., "What am I doing to deserve this?"). The reflective pondering subscale measures the extent to which one generally reflects on oneself (e.g., "Go someplace alone to think about your feelings.") and cognitively attempts to overcome the problems (e.g., "Analyze recent events to try to understand why you are depressed"). In the current sample, internal reliabilities were adequate for both brooding (Cronbach's $\alpha = .87$) and reflective pondering (Cronbach's $\alpha = .80$). Higher scores reflect a greater tendency to engage in brooding and reflective pondering.

Causal analysis and problem-solving analysis were assessed by the causal analysis and problem-solving analysis subscale of the Analytical Rumination Questionnaire (ARQ; Barbic et al., 2014; Bartoskova et al., 2018). The casual analysis subscale contained 3 items (e.g., "I tried to figure out what I had done wrong") and each item was rated on a 4-point Likert-type scale ranging from 1 (Never) to 4 (All the time). The problem-solving analysis subscale contained 3 items (e.g., "I tried to learn from my mistakes") and each was also rated on the same 4-point Likert-type scale. The internal reliability for both casual analysis and problem-solving analysis subscale were adequate in the present study (Cronbach's $\alpha = .86$ and .79). Higher scores reflected greater use of casual analysis and problem-solving analysis.

Depressive Symptoms

Depressive symptoms were assessed by the 20-item Center for Epidemiological Study – Depression scale (CES-D; Radloff, 1977). The CES-D assessed the cognitive, emotional, and behavioral symptoms associated with major depression. The participants rated the frequency of their symptoms on a 4-point Likert-type scale ranging from 1 (Rarely or none of the time) to 4 (Most or All of the time). The internal reliability for CES-D in the current sample was adequate (Cronbach's alpha = .94). Higher score indicated greater endorsement of depressive symptoms.

Life Satisfaction

Life satisfaction was measured by the 5-item Satisfaction with Life Scale (SWLS; Diener et al., 1985). The scale included items such as "I am satisfied with my life." Participants rated the items on a 7-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree). The internal consistency was adequate for the current sample (Cronbach's alpha = .93). Higher score indicated greater life satisfaction.

Transparency and Openness

Study data and research materials are available upon request. The study's design and its analysis were not pre-registered.

Analytic Plan

Analyses were conducted using STATA version 17. First, we conducted descriptive statistics and bivariate correlations of study variables. Then, we examined whether there were ethnoracial group differences in the frequency of rumination types by conducting a series of one-way ANOVAs. Finally, we conducted hierarchical regression analyses separately by each ethnoracial group to examine whether the various rumination types incrementally accounted for variance in psychological well-being. The set of covariates (i.e., age and gender), brooding, and causal analysis was entered in Step 1, followed by reflective pondering and problem-solving analysis in Step 2.

Results

Bivariate correlations and descriptive statistics for study variables by ethnoracial groups are reported in Table 1. A series of one-way ANOVAs revealed that Latinx Americans endorsed greater use of causal analysis than European Americans. Latinx Americans also reported greater use of problem-solving analysis than Asian Americans (see Table 1). There were no other group differences in the use of rumination types.

Ethnoracial Group Differences in Rumination

We conducted a series of hierarchical regression analyses to examine ethnoracial group differences in the relationship between rumination types and psychological well-being (see Table 2). Given the moderate associations between the rumination types, we checked for multicollinearity in each hierarchical regression model. In each model, the variance inflation factor (VIF) was all below 4, suggesting the absence of multicollinearity.

Asian Americans

First, we examined the incremental influence of rumination types on depressive symptoms. In Step 1, brooding was associated with higher depressive symptoms ($\beta = .55$, $p < .001$), whereas casual analysis was not significantly associated with depressive symptoms. In the next step, the inclusion of problem-solving analysis and reflective pondering accounted for an additional 6.4% variance in depressive symptoms, F (2, 191) = 10.45, $p < .001$. Problem-solving analysis was associated with lower depressive symptoms (β = -.37, $p < .001$), whereas brooding ($\beta = .47, p < .001$) and causal analysis ($\beta = .23$, $p = .01$) were associated with greater depressive symptoms. Reflective pondering was not associated with depressive symptoms controlling for the influence of brooding, causal analysis, and problem-solving analysis.

Next, we examined the incremental contribution of rumination types on life satisfaction. In Step 1, causal analysis was associated with greater life satisfaction ($\beta = .17$, $p = .02$), whereas brooding was associated with lower life satisfaction (β = -.43, $p <$ .001). In Step 2, the addition of problem-solving analysis and reflective pondering accounted for an additional 6.8% variance in life satisfaction, F (2, 191) = 8.52, $p <$ .001. Problem-solving analysis was associated with greater life satisfaction ($\beta = .34$, $p < .001$), whereas brooding ($\beta = -.44, p < .001$) was associated with lower life satisfaction. Causal analysis and reflective pondering were not associated with life satisfaction, controlling for brooding and problem-solving analysis.

Latinx Americans

In Step 1, brooding was associated with higher depressive symptoms ($\beta = .63$, $p < .001$). Casual analysis was not associated with depressive symptoms. In Step 2, the addition of problem-solving analysis and reflective pondering accounted for an additional 4% variance in depressive symptoms, F (2, 161) = 5.73 , $p < .001$. Problem-solving analysis was associated with lower depressive symptoms (β = -.22, $p = .004$), whereas brooding ($\beta = .50$,$p < .001$) and causal analysis ($\beta = .16$, $p = .04$) were associated with greater depressive symptoms. Reflective pondering was not associated with depressive symptoms, controlling for the influence of brooding, causal analysis, and problem-solving analysis.

Next, we examined the influence of rumination types on life satisfaction. In Step 1, brooding was associated with lower life satisfaction (β = -.52, $p < .001$), whereas causal analysis was not associated with life satisfaction. In Step 2, the inclusion of problem-solving analysis and reflective pondering accounted for an additional 1.9% variance in life satisfaction, F (2, 161) = 2.11, $p = .13$. Problem-solving analysis was associated with greater life satisfaction ($\beta = .18$, $p = .04$), whereas brooding (β = -.50, $p < .001$) was associated with lower life satisfaction. Casual analysis and reflective pondering were not associated with life satisfaction, controlling for the influence of brooding and problem-solving analysis.

European Americans

Next, we examined the influence of rumination types on depressive symptoms. In Step 1, brooding was associated with higher depressive symptoms ($\beta = .75$, $p < .001$). Casual analysis was not associated with depressive symptoms. In Step 2, the inclusion of problem-solving analysis and reflective pondering accounted for a 0.3% of additional variance in depressive symptoms, F (2, 226) = 0.63,$p = .54$. Reflective pondering and problem-solving analysis were not associated with depressive symptoms, controlling for the influence of brooding and causal analysis.

Finally, we examined the influence of rumination types on life satisfaction. In Step 1, brooding was associated with lower life satisfaction (β = -.47, $p < .001$), whereas casual analysis was associated with greater life satisfaction ($\beta = .15$,$p = .03$). In Step 2, the inclusion of problem-solving analysis and reflective pondering accounted for a 2% of additional variance in life satisfaction, F (2, 226) = 3.16, $p = .05$. Causal analysis, problem-solving analysis, and reflective pondering were not associated with life satisfaction, controlling for the influence of brooding.

Discussion

Rumination has been conceptualized as a multidimensional construct with both adaptive and maladaptive qualities (Smith & Alloy, 2009), but empirical findings on which rumination type is adaptive or maladaptive have often been mixed. A growing number of studies have also shown that the relationships between rumination and maladjustment vary by culture (Chang et al., 2010; Choi & Miyamoto 2022; Kwon et al., 2013), but prior efforts to understand cross-cultural differences in rumination have largely compared Asian Americans with European Americans. As such, the current study aimed to clarify which rumination type is adaptive or maladaptive for mental health by examining ethnoracial group differences in the utilization and function of four rumination types on depressive symptoms and life satisfaction among three ethnoracial groups (i.e., Asian, Latinx, and European Americans).

Overall, there were few ethnoracial group differences in the utilization of rumination types. The exceptions were that Latinx Americans endorsed greater use of causal analysis than European Americans and greater use of problem-solving analysis than Asian Americans. No other ethnoracial group differences were found, which was inconsistent with prior research showing that Asian Americans reported higher levels of rumination compared to European Americans (e.g., Chang et al., 2010; Choi & Miyamoto, 2022; Kwon et al., 2013). Nonetheless, the current study extended prior findings on cross-cultural differences in the utilization of rumination by showing that cross-cultural differences in the effects of rumination on psychological well-being also exist between Latinx Americans and European Americans.

We did not find ethnoracial group differences in the relationship between brooding and psychological well-being. Brooding was strongly associated with greater depressive symptoms and lower life satisfaction for

all ethnoracial groups, both in the bivariate associations and also after controlling for other rumination types. These findings are consistent with prior research indicating the robust association of brooding with negative mood and prolonging depressive episodes (Nolen-Hoeksema et al., 2008; Treynor et al., 2003). It is interesting to note that brooding was the only significant predictor of depressive symptoms and life satisfaction among European Americans after controlling for other rumination types, suggesting that the shared variance between rumination types on depressive symptoms and life satisfaction is almost entirely explained by brooding. By contrast, problem-solving analysis was associated with the unique variance of depressive symptoms and life satisfaction among Asian and Latinx Americans, above and beyond the variance explained by brooding.

Ethnoracial group differences emerged for causal analysis. Controlling for other rumination types, causal analysis was associated with higher levels of depressive symptoms among Asian and Latinx Americans but not among European Americans. Although causal analysis was associated with depressive symptoms, causal analysis is characterized as a type of rumination that is focused on understanding why negative events happen and what could be done to prevent them (Andrews & Thomson, 2009; Barbic et al., 2014). Indeed, Tsai and Lau (2013) found that Asian Americans who experienced higher levels of negative affect following a negative self-reflection task also experienced higher levels of insight into their negative experiences. Although speculative, it may be that the higher levels of depressive symptoms associated with causal analysis among Asian and Latinx Americans may not be detrimental in the long term, but rather required for problem-solving and insight-finding in the long term. Future research using a longitudinal design is needed to explore this possibility.

The strength of the association of problem-solving analysis with psychological well-being varied by ethnoracial group in theoretically expected ways. Controlling for other rumination types, problem-solving analysis was associated with lower depressive symptoms and greater life satisfaction among Asian and Latinx Americans, but not among European Americans. As described in the introduction, this may be explained by cultural differences in dialectical views of emotions (Miyamoto & Ryff, 2011). Prior work found that Asian and Latinx Americans endorse more dialectical self-views and beliefs about emotions than European Americans (Ji et al., 2001; Lechuga et al., 2012; Nisbett et al., 2001; Peng & Nisbett, 1999; de Oliveira & Nisbett, 2017). This may have allowed them to better tolerate negative emotions that are generated from rumination as they also engaged in resolving the issues that prompted the ruminative process.

Interestingly, reflective pondering was not associated with psychological well-being after controlling for other rumination types for all ethnoracial groups. While one possibility may be due to the variance in psychological well-being being better explained by problem-solving analysis, the small bivariate associations between reflective pondering and problem-solving analysis (r s ranging from .19 to .32) suggest that these two "adaptive" rumination types may be more distinct than similar. Future research is needed to clarify how problem-solving analysis might differ from reflective pondering to identify the key "ingredient" for adaptive self-reflection.

Finally, our findings have several clinical implications. First, clinicians should recognize that rumination is a multidimensional construct with both adaptive and maladaptive qualities. Second, our findings suggest that clinicians may benefit from assessing their client's level of brooding and whether it may be associated with depressive symptoms. Third, our findings illustrated the importance of considering ethnoracial group differences in the motivation behind rumination and its function. Specifically, among individuals from interdependent contexts, negative self-reflection may be motivated by self-improvement orientations and attempts to resolve problems. When assessing clients' use of rumination, it may be helpful to clarify the motivation behind its use.

There are several limitations in the present study that are worth noting. First, the cross-sectional design of the study limits us from making temporal conclusions. Thus, it would be important for future studies to use longitudinal designs to further examine the temporal directions and experimental designs to examine casual associations. Second, survey data only reflects dispositional rumination traits and their associations with psychological well-being. Given the complexity of the rumination process, creativity in research design and methods is needed to better capture and understand this psychological construct. For example, facilitating

different types of rumination by asking participants to complete specific writing prompts may be an effective way to capture rumination as it unfolds in the mind (e.g., see Tsai et al., 2016, for an example). Third, the present study examined ethnoracial group membership as a proxy for cultural differences. Future research that directly assesses cultural values, such as dialectical beliefs for negative emotions, is needed to provide stronger theoretical evidence of the culturally based findings.

Despite these limitations, our findings increase our understanding of ethonracial group differences in the effects of rumination types on psychological well-being. Consistent with our hypotheses, brooding was associated with greater depressive symptoms and lower life satisfaction for all ethnoracial groups. We found evidence suggesting that problem-solving analysis was an adaptive type of rumination with positive associations with psychological well-being for Asian Americans and Latinx Americans, but not among European Americans. Our findings provide a starting point for research to examine which type of rumination, for who and what type of people, is adaptive or maladaptive for psychological well-being.

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Table 1

Descriptive Statistics and Zero-order Correlations among Study Variables (Asian/Latinx/European Americans)

Study Variables	1.	2.	3.	4.
1. Brooding	–			
2. Reflective Pondering	.64***/.74***/.59***	–		
3. Casual Analysis	.37***/.38***/.45***	.41***/.35***/.43***	–	
4. Problem-solving Analysis	.14/.17*/.10	.32***/.19*/.25***	.70***/.61***/.52***	–
5. Depressive Symptoms	.57***/.65***/.73***	.35***/.55***/.40***	.17*/.27***/.28***	-.13/-.00/-.00
6. Life Satisfaction	-.37***/-.51***/-.37***	-.12/-.37***/-0.08	.02/-.17*/-.03	.24***/.03/.11
Mean	11.04/11.20 /10.53	10.41/10.48 /10.17	7.83 /8.31[a] /7.60[a]	8.25[a] /8.83[a] /8.56

Study Variables	1.	2.	3.	4.
SD	3.72/4.45/4.11	3.58/3.71/3.36	2.38/2.45/2.51	2.38/2.25/2.17

Note . *p <.05. **p < .01. ***p < .001. Correlations and Means are for Asian Americans, Latinx Americans, and European Americans respectively. The same superscript letter indicates significant group differences.

Table 2

Hierarchical Regression Analyses of Reflective Pondering and Problem-solving Analysis by Ethnoracial groups

Depressive Symptoms	Asian Americans β	Asian Americans R^2	Asian Americans ΔR^2	Asian Americans df	Asian Americans *F*
Step 1		.35	–	(4, 193)	25.78***
Age	-.16**				
Gender	-.03				
Brooding	.55***				
Casual Analysis	-.04				
Step 2		.41	.06	(2, 191)	10.45***
Age	-.16**				
Gender	-.04				
Brooding	.47***				
Casual Analysis	.23**				
Reflective Pondering	.05				
Problem-solving Analysis	-.37***				

Life Satisfaction	β	R^2	ΔR^2	df	*F*	β	R^2	ΔR^2	df	*F*	β
Step 1		.17	–	(4, 193)	10.05***		.26	–	(4, 163)	14.45***	
Age	.05					.03					-.14*
Gender	.06					.02					.05
Brooding	-.43***					-.52***					-.47***
Casual Analysis	.17*					.02					.15*
Step 2		.24	.07	(2, 191)	8.52***		.28	.02	(2, 161)	2.11	
Age	.06					.03					-.14*
Gender	.06					-.01					.04
Brooding	-.44***					-.50***					-.53***
Casual Analysis	-.10					-.09					.06
Reflective Pondering	.09					.01					.15
Problem-solving Analysis	.34***					.18*					.10

Note . *p <.05. **p < .01. ***p < .001.