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Cultural Differences in Emotion Regulation and Social Support Seeking

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By

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Master's Thesis

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May 31st, 2021

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A Thesis
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The Faculty of
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Abstract

Given the negative influences of stress on health, it is important to examine beneficial processes like social support, which can promote greater health. However, the willingness to seek social support may be qualified by emotion regulation strategy. Research indicates that there are cultural differences in both social support seeking and emotion regulation processes. In this ecological momentary assessment design, participants ($N = 49$) reported on their daily stress, whether they sought social support during stressful times, and if they emotionally suppressed ($N = 913$). They also responded to individual differences measures, including interdependent cultural orientation and ethnicity. Multilevel modeling was used to test cultural differences in the association of emotional suppression mediating the link between stress and social support seeking. Although results did not suggest that emotional suppression mediated the link between stress and support seeking, after adjusting for emotional suppression, stress did predict social support seeking especially for Asian/Asian American participants. Stress predicted tangible but not emotional support. Furthermore, consistently across models, although stress did not predict emotional suppression, greater emotional suppression predicted greater social support seeking. Taken together, during stressful times, requesting particular types of support (e.g., tangible support) may be especially helpful. As culture influences social support processes, it is important to consider that different ethnicities tend to seek support differentially. Furthermore, emotional suppression may play an important role in social support processes. Overall, the complex interplay between stress, emotion regulation, and social support seeking have implications for support seeking in daily life.

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Cultural Differences in Emotion Regulation and Social Support Seeking

Daily pressures from work, family, and other obligations make coping with stress an inescapable everyday occurrence. Given the widely known negative effects of stress on health, it is important to investigate whether processes such as social support can help mitigate the negative effects of stress and promote greater health. Social support attenuates the negative effects of stress on both physical (Reblin & Uchino, 2008) and emotional health (Hill & Watkins, 2017). However, the willingness to seek out social support may be qualified by personal preferences for emotion regulation strategy. Research suggests that there are important differences in both social support and emotion regulation that can be attributed to culture (Sherman et al., 2009). Therefore, a cultural lens should be used when examining the role of emotion regulation and social support in shaping the lingering responses to stress.

Stress, Social Support, and Emotion Regulation

Stress is associated with greater risk for a range of negative health outcomes (e.g., Gianaros & Wager, 2015), including increased risk for cardiovascular disease (Kivimäki & Steptoe, 2018), depression (Hammen, 2005) and HIV/AIDS (Cohen et al., 2007). When stress is experienced, seeking out social support is one approach for coping with that stress (Dunkel Schetter et al., 1987). Social support can be thought of as the perception that one is cared for and has available a reliable social network (Cobb, 1976). Social support can help buffer the lingering negative effects of stress on health (Cohen & Wills, 1985; Reblin & Uchino, 2008). Social support predicts lower depressive symptoms (Alsubaie et al., 2019) and greater psychological well-being (Hill & Watkins, 2017).

Supportive social interactions are complex, and social support exchanges can be thought of as consisting of several points at which close others can either receive support or provide

support to one another (Bolger & Amarel, 2007). For example, in one social support exchange someone may receive support from a close other without explicitly asking for it, whereas in another exchange the stressor may be appraised as too much to handle alone and therefore support is explicitly requested (Bolger & Amarel, 2007). In this study, I examined the role of the social support seeking element of the social support process.

Social support seeking is an important but understudied part of the social support process. Studying social support seeking can help disentangle the benefits of social support. Some research on social support seeking uses developmental frameworks to predict or explain the association between stress and social support seeking (Collins & Feeney, 2000; Li & Yang, 2009). Other research examines social support seeking in the context of technology, and cyber spaces (Rife et al., 2016; Xie & Xie, 2019). Social support seeking has also been studied in patients with major illnesses. For example, women with cancer who solicited social support reported a greater quality of life and better mental health (Hill, 2016). A small but important area of social support seeking literature indicates that culture may contribute to the solicitation of social support (Campos & Kim, 2017). I expand on the cultural aspect of the social support seeking literature later in this introduction. Given the minimal literature on it, it is important to further examine social support seeking and in particular, how culture may affect the link between momentary stress and social support seeking.

The association between momentary stress and the willingness to seek social support may be qualified by differences in emotion regulation strategy. Emotion regulation can be thought of as the management of emotional responses to emotionally eliciting situations (Gross & John, 2003). Different individuals may use different emotion regulation strategies (M. Wang & Saudino, 2011). One of the most common emotion regulation strategies is reappraisal.

Reappraising entails attempting to change thoughts and thereby decrease the emotional impact of an emotionally eliciting situation. Successful reappraisal reduces negative emotions and promotes well-being (Gross & John, 2003; Gross & John, 1998). For example, not getting a desired job is likely upsetting. Reappraisal of this stressful event might involve changing thoughts about that negative feeling to something more positive, like prompting thoughts about how different jobs may be a better fit. Another common emotion regulation strategy is suppression. Suppression occurs when emotional expression is moderated (Gross & John, 2003). This strategy is often thought to be less beneficial to well-being (Gross & John, 1998). In the job example, someone suppressing emotions might not express signs of frustration or sadness when asked about the job interview.

Emotionally suppressing may limit the social costs of disclosing emotions (Greenaway & Kalokerinos, 2017). In theory, emotional suppression may help to explain why some refrain from seeking social support during times of stress. To better understand how emotional suppression may explain why some do not seek out social support during stress, we can examine reasons for suppressing negative emotions. One reason for suppressing negative emotions is a desire to avoid the negative consequences of expressing those emotions (Chiang, 2012). Other motivations may include the desire to have time to emotionally process the event, or to control impulses that might hurt others (Chiang, 2012). Furthermore, those who emotionally suppress may want to avoid burdening close others with their problems. This desire may be part of an effort to maintain group harmony (Chiang, 2012). Reaching out to others for social support and disclosing emotions could be harmful to interpersonal relationship harmony. Although this is not an exhaustive list of reasons for emotionally suppressing negative emotions, these reasons suggest that emotional suppression may help to explain why some tend to seek out social support less

than others. In fact, suppressing negative emotions is consistent with cultural norms demonstrated by those of more collectivistic cultural orientations (Wei et al., 2013).

Recent studies highlight cultural differences in emotion regulation strategies (Burns et al., 2007). In particular, those from Asian cultures are more likely to emotionally suppress (Butler et al., 2007), whereas those from Western places tend to reappraise (Kim & Sasaki, 2012). Not only are cultural differences apparent in emotion regulation strategies, but also in social support seeking. One line of research explores cultural variability in social support seeking (Kim et al., 2008; Taylor et al., 2004). I further explain these associations later in this introduction. Taken together, this research indicates that it is useful to examine both social support seeking and emotion regulation during moments of stress, and that to do so, we must use a cultural lens.

Therefore, in the present study, I studied emotional suppression as a potential explanation for why some may be less likely to seek out social support during times of stress. Further, I investigated the role of culture in moderating the association between momentary stress and social support seeking, as well as the association between momentary stress and emotional suppression.

Culture and Self-Construal

First, in discussing culture and its relation to social support and emotion regulation, it is helpful to understand how culture is conceptualized in psychological research. Culture shapes psychological processes and interpersonal relationships (Campos & Kim, 2017). One important premise of cross-cultural research is that there are cultural differences in self-construal, or how one views his or herself. Self-construal theory posits that those from Western, more individualistic societies tend to have a more independent self-construal, while those from Eastern, more collectivistic societies tend to have a more interdependent self-construal (Markus

& Kitayama, 2010; Markus & Kitayama, 1991). Those with more independent cultural orientations tend to value individuality and the pursuit of personal goals while those with more interdependent cultural orientations tend to emphasize not burdening their social groups, and prioritize maintenance of group harmony (Markus & Kitayama, 1991). This distinction can be useful for understanding cultural differences. When examining cultural differences, researchers sometimes apply the labels of *individualistic* and *collectivistic* instead of *independent* and *interdependent* (Markus & Kitayama, 1991). The underlying theory and conceptualization of both sets of terms is similar and therefore I use these terms interchangeably throughout this thesis.

Although the framework of self-construal is widespread among cultural researchers, it has received criticism because of a lack of consistency in whether cultures are deemed either individualistic or collectivistic. One of the main criticisms is rooted in the idea that a culture cannot simply be categorized as either individualistic or collectivistic (Vignoles, 2018). However, (Markus & Kitayama, 1991), originally known for using self-construal theory as a premise for examining cultural differences, argue that there is not complete homogeneity within either individualistic or collectivistic cultures. This is because important cultural differences that can be masked when examining culture using this binary categorization. For example, (Green et al., 2005) conducted a meta-analysis on different measures of individualism and collectivism and found that competitiveness, which had previously been thought of as a more independent dimension, was actually important for those from *both* relatively more individualistic and collectivistic cultures. Therefore, this theory indicates that when measuring culture, culture should be viewed on a relative spectrum, rather than by identifying a country or culture as solely individualistic or collectivistic.

An important point to consider is that although it may be theoretically imprecise to study country-level differences in self-construal, important comparisons can be made by examining self-construal among those from different ethnic backgrounds who live in the same country or community (Levine et al., 2003). It is possible to have a personal cultural orientation that is incongruent with the overall cultural orientation of one's country of origin. For example, it is possible to live in a country that is considered to be independent but have a more interdependent cultural orientation. In fact, results from a meta-analysis suggest consistency in self-construal in the expected directions when examining those of various ethnic backgrounds living in one country (Levine et al., 2003). Specifically, in the meta-analysis, for the studies that took place in the U.S., participants of Asian descent had more interdependent self-construal, whereas Caucasian participants had more independent self-construal (Lapinski & Levine, 2000; Singelis & Brown, 1995). This result is consistent with the notion that those from more collectivistic cultures tend to have more interdependent self-construal, whereas those from more individualistic cultures tend to have more independent self-construal. The meta-analysis therefore suggests that it is valuable to use self-construal as a theoretical framework for explaining cultural differences that emerge when examining those who live in the same place. In this thesis, I examined cultural differences within the U.S. Self-construal theory helps to explain cultural differences in social support seeking processes and emotion regulation during times of stress.

Cultural Influence on Social Support Seeking

The importance of culture also becomes apparent when examining social support seeking processes. Taylor et al. (2004) found that Koreans and Asians/Asian Americans in the U.S. reported using social support to cope less often than did European Americans. The authors

suggested that this pattern occurred because those from more interdependent cultures, such as those from Asian cultural backgrounds, tended to place value on not disrupting the balance of relationships by disclosing personal problems and burdening others. In fact, Asian Americans seek support less often than European Americans during stress (Mojaverian & Kim, 2013). In contrast, for those with more independent self-construal, seen more commonly among European Americans, it is more socially acceptable to reach out for help, because there are fewer social consequences of asking for support. Social support request by European Americans can produce positive outcomes for both the provider and the recipient (Kim et al., 2006).

The positive outcomes of soliciting social support among European Americans are not necessarily reproduced for Asians and Asian Americans. For example, when Asian Americans, who tend to be higher in interdependence, sought out social support, that support was less beneficial than it was for European Americans (Kim et al., 2006). Likewise, when Asians and Asian Americans were primed to think about close others and directed to seek out social support from them, they actually demonstrated greater stress, physiologically and psychologically, in comparison to when they did not solicit social support from their close others (Taylor et al., 2007). For Asians and Asian Americans, it may be less culturally normative to ask for help from others than it is for European Americans. Asians and Asian Americans may feel stressed when requesting social support because reaching out for support could surpass their comfort level and may be harmful to their interpersonal relationships. In fact, in conducting focus groups, Chang (2015) found that Asian American participants underutilized social support when they were stressed because they wanted to save face. They wanted to avoid feeling shame or being perceived as weak by their close others. They believed that bringing up problems would indicate to their close others that they were not capable of handling their problems on their own.

Therefore, participants relied on themselves to handle the burden of their stress (Chang, 2015). Ishii and colleagues (2017) similarly found that when Japanese participants sought implicit social support, relational concerns were significantly higher than for European Americans. All of these studies suggest that cultural differences should be considered when examining social support seeking.

Not only are cultural differences in social support seeking prevalent in laboratory settings, but they are mirrored in daily experiences as well. Using experience sampling methodology, S. Wang et al. (2010) found that during stressful events in daily life, Asian American students did not seek social support as often as European Americans. This result was explained by differences in cultural values, measured via a desire to maintain group harmony (S. Wang et al., 2010), a value more consistent with interdependent self-construal. This study illustrates the role of culture in shaping social support seeking processes during moments of stress. Taken together, culture could affect how social support functions as a buffer of the lingering effects of stress on health.

Cultural Influence on Emotion Regulation

Not only can culture affect the willingness to seek social support during times of stress but it can also influence emotion regulation strategy. Given that research on emotion regulation has mainly been conducted mostly in Western, or more independent cultural contexts, we cannot simply generalize findings from emotion regulation studies without taking cultural differences into consideration. Studies that have considered cultural differences suggest that emotional suppression is more common for those from more interdependent cultural contexts (Butler et al., 2007) because suppression more closely aligns with interdependent cultural norms (Ramzan & Amjad, 2017). Also, those with more interdependent orientations tend to suppress (Wei et al.,

2013) because they believe it helps to preserve relationships (Chiang, 2012). Additionally, (Huwaë & Schaafsma, 2018) found that in everyday interactions, those from more collectivistic backgrounds tended to suppress more than those from more individualistic backgrounds. These differences could be attributed to variations in self-construal (Huwaë & Schaafsma, 2018). Overall, these results suggest that those with more interdependent cultural orientations tended to suppress more than those with more independent cultural orientations.

Furthermore, those who manage their emotions in a way that most aligns with their culture tend to have healthier physiological responses to stress (Butler et al., 2009; Suchday & Larkin, 2004). For instance, for Asian Americans, greater emotional expression (i.e. less suppression) was associated with higher cardiovascular responses to stress, whereas for European Americans, greater emotional expression was associated with lower cardiovascular responses to stress. If it is more culturally normative to suppress, expressing emotions may exacerbate physiological stress responses, which is less healthy. Therefore, it is important that we consider cultural differences in emotion regulation that may emerge when examining the enduring effects of stress.

Stress, Social Support, Emotion Regulation, and Culture

Given that there are cultural differences in the way people seek out social support, as well as in emotion regulation, it seems important to examine these concepts together. Emotion regulation strategy may drive the desire to seek social support during times of stress. During these moments of stress, some may attempt to cope with the situation on their own through suppressing emotions. If this approach is not sufficient to lessen the emotional impact of the stress, they may seek out supportive others. However, if is not culturally normative to seek out help from others, that approach may be avoided, even if support could be beneficial. Specifically,

those with more interdependent orientations may not want to burden their social group by requesting social support. Differences in social support seeking are consistent with cultural differences in emotion regulation (Sherman et al., 2009). Specifically, the social costs that come with both the expression of emotions, and seeking social support are greater for those from more collectivistic backgrounds (Sherman et al., 2009). Said differently, suppressing emotions and seeking social support less frequently are both more likely for those with a more collectivistic orientation. Therefore, it is important to examine how culture may affect the relation between momentary stress and social support seeking, as well as momentary stress and emotion regulation. In particular, it may be useful to examine whether culture moderates the association between momentary stress and emotional suppression.

Current Study

In the present study, I examined emotional suppression as a potential explanation for why some may or may not seek out social support during times of stress. Further, I investigated the role of cultural orientation and ethnicity in moderating the association between momentary stress and social support seeking, as well as in the association between momentary stress and emotional suppression. To examine these constructs altogether, I proposed a moderated mediation model (see Figure 1). I first tested the mediation model without considering interdependent cultural orientation or ethnicity. Emotional suppression may drive the link between momentary stress and social support seeking and may explain why some seek out social support less frequently. I then investigated whether two of the mediation pathways were moderated by interdependent cultural orientation or ethnicity. Specifically, ample research examines the benefits of seeking social support during times of stress (Hill, 2016), and more recently, cultural differences in this process (Kim et al., 2008; Kim et al., 2006; Taylor et al., 2004). I expected that during times of stress,

those with more interdependent cultural orientations will seek out less social support than those with more independent cultural orientations. I also investigated the role of culture as a moderator of the association between momentary stress and emotional suppression. There are known cultural differences in emotion regulation during stress (Butler et al., 2007). Specifically, those from interdependent backgrounds tend to suppress more often (Chiang, 2012; Wei et al., 2013). I expected a similar pattern to emerge in the current study. I used experience sampling methodology to examine these associations. I hypothesized that during times of stress:

1) Social support would be pursued,

2) Those who emotionally suppress would not be as likely to seek social support,

3) Those with more interdependent cultural orientations would seek social support less than those with more independent cultural orientations, and

4) Those with more interdependent cultural orientations would suppress more than those with more independent cultural orientations.

Figure 1

Multilevel Moderated Mediation Model
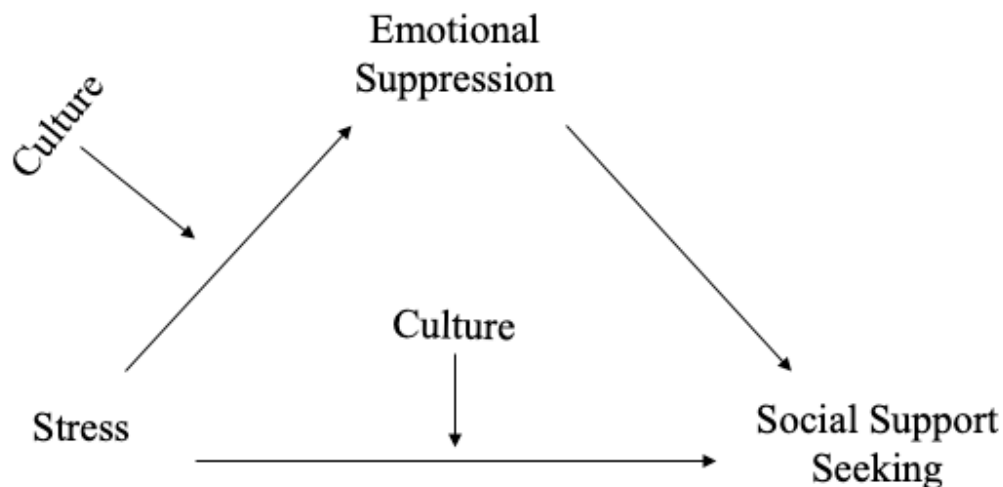
Method

Participants

 The current study included participants from Western Washington University's student subject pool (SONA) and through the online recruitment site Institute of Translational Health Sciences (ITHS; $N = 50$). All recruitment, consent, and interactions with participants were online, due to the current global pandemic. Participants recruited on SONA ($n = 23$) received course credit for compensation. Participants were compensated two credits for completing at least 16 daily entries and individual differences measures. Participants who completed all 24 entries and individual difference reports were compensated an extra one credit. Participants recruited via Institute of Translational Health Sciences (ITHS; $n = 27$) received monetary compensation in the form of an Amazon e-gift card. Participants were compensated $15 for completing at least 16 daily entries. Participants who completed all 24 entries and individual difference reports were compensated an extra $5.

 The sample consisted of a relatively even sample of Asian/Asian American identifying participants ($n = 23$) and White/European American identifying participants ($n = 27$). Two participants who identified as both Asian and White were analyzed with the group that identified as Asian/Asian American. This decision was based on timing of these participants' signups and verification of their scores on the interdependent cultural orientation scale. Specifically, these participants signed up when the study was open to only Asian/Asian American identifying individuals. Interdependent cultural orientation scores were either approximately the same as or above the mean of the sample, suggesting these participants leaned towards a more interdependent cultural orientation and could be included as part of the Asian/Asian American identifying group. Overall, the entire sample was 55% female-identifying, 35% male-identifying,

and 10% non-binary/identity not listed. The mean age was 22.69 years old ($SD = 6.48$). Ranging from first to fourth generation, the average generation status of the sample was 2.69 ($SD = 1.21$). The average subjective socioeconomic status was 5.60 ($SD = 1.63$) and ranged from two to eight. In other words, participants reported they were relatively in the middle of the social class ladder compared to others in their community.

I also examined sample demographics from each recruitment method. For the SONA sample, there were 10 Asian/Asian American participants (45.5%), and 12 White/European Americans (54.5%). One of the 23 Asian/Asian American participants was not included in analyses (see Preliminary Analyses in the Results). Of the 22 remaining participants, the average age was 20.27 years old ($SD = 4.33$), 50.0% female-identifying, 36.4% male-identifying, and 13.6% non-binary/identity not listed. Ranging from first to fourth generation, the average generation status of the SONA sample was 2.68 ($SD = 1.17$). The average subjective socioeconomic status was 5.19 ($SD = 1.75$) and ranged from two to eight, with one missing participant report.

For the ITHS sample, there were 12 Asian/Asian American participants (44.4%), and 15 White/European Americans (55.6%). Of those participants, the average age was 24.67 years old ($SD = 7.31$), 59.3% female-identifying, 33.3% male-identifying, and 7.4% non-binary/identity not listed. Ranging from first to fourth generation, the average generation status of the ITHS sample was 2.70 ($SD = 1.27$). The average subjective socioeconomic status was 5.96 ($SD = 1.49$) and ranged from two to eight.

Procedure

In this ecological momentary assessment design, participants were signaled eight times a day for three days. After the third day, participants completed the individual differences survey.

Initially, after meeting eligibility requirements of self-identifying as Asian, Asian American, White or European American, a research assistant met with participants via Zoom to obtain consent and to explain and answer any questions on the content structure of the daily entries. Participants were assigned a three-day period during the week, in which they were prompted to complete eight brief daily entries at random times throughout each of the days, during typical waking hours. We used the texting program, Survey Signal to trigger daily entries throughout the day. For each of the brief surveys, participants reported on whether they experienced stress between the time of their previous entry and the current one, and on how stressed they felt. They reported on how they coped with their stress by completing a brief set of momentary measures (see Momentary Measures in the Method, and in Appendices A-C, H). Participants were asked to complete seven entries throughout the day, and one final entry at the end of the day before they go to bed. The final entry was the same as the previous ones but also included an open-ended question asking participants to describe any stress they experienced that day. After the last day of daily entries, participants completed a questionnaire that consisted of individual difference measures, including interdependent cultural orientation, ethnicity, mental health, and extraversion. Other measures were taken but are not relevant to this thesis. Research assistants met with participants via Zoom for a final session to conduct the individual difference measures and debrief participants on the study. The participants were assigned into a breakout room to complete the individual difference survey, as to not feel that they were being watched while completing it. All surveys were conducted using Qualtrics and none of the Zoom sessions were recorded. Finally, participants received their course credit or Amazon e-gift card after the Zoom call.

Halfway through data collection, cancellation protocol was implemented. These procedures were implemented to increase data quality and provide clear standards for the minimum number of momentary assessments. Reminder emails were sent to participants prior to both the first session (two days before, as well as the day before) and the final session (the day before) to ensure attrition was minimized. If participants were projected to not meet the minimum requirement of 16 entries by the end of the third day of momentary assessment, their final Zoom session was cancelled. Participants were made aware that they would not have been compensated for not completing all parts of the study, and that we did not want to waste their time. This resulted in a total of 50 eligible participants. The average number of daily entries was 19.08 (SD = 5.46). After conducting independent samples t-tests, results suggested that participants recruited from SONA did not differ in most demographic variables (number of daily reports, subjective SES, gender, ethnicity, generation status) as compared to those recruited from ITHS, except for age.

Measures

Momentary Measures

Momentary Stress. To measure momentary stress, participants were prompted with the following paragraph defining "stress" at the start of each short survey.

> "In daily life, people experience stress and may define that stress in different ways. For this study, we will define "stress" as feeling emotionally or physically tense. That tension can come from an event or a thought that makes you feel overwhelmed, anxious, angry, or upset. It may happen when a coworker, friend, or family member does something that bothers you, either intentionally or unintentionally or, it could happen when you feel bogged down by all of your schoolwork. When you are stressed, you may feel like you

want to talk to others about how stressed you are, or you may feel like you need space

from others. Please use this definition of stress when answering this entry. Think about

the time since the last entry that you have experienced the most stress."

Participants then answered four questions about their stress. The first question was: "*How*

stressed did you feel since the last entry?" to assess the degree to which they felt stressed. The

last three questions were more specific regarding the stress they felt. The items were: "*How*

overwhelmed did you feel?" and "*How much control did you feel you had in the situation?*" and

"*How worried were you about others' reactions to you?*". These items were included to tap into

stress involving feelings of demand, control, and social evaluation, respectively. They answered

these four questions on a 7-point Likert scale ranging from 1 (*not at all*) to 7 (*very much*). The

control-related item was reverse scored, and averaged with the rest of the items, such that higher

scores indicated greater feelings of stress. Reliability was moderate to high ($\alpha = .82$) and the

intraclass correlation coefficient for this measure was .45 ($p < .05$).

  Emotional Suppression. In order to measure how individuals emotionally regulate

during stress, participants completed the 4-item Suppression subscale from the Emotion

Regulation Questionnaire (ERQ; Gross & John, 2003), which is used to measure levels of

emotional suppression. Participants responded to each statement on a 7-point Likert scale from 1

(*strongly disagree*) to 7 (*strongly agree*). Items included were: "*I kept my emotions to myself*",

"*When I felt positive emotions, I was careful not to express them*", "*I controlled my emotions by*

not expressing them" and "*When I felt negative emotions, I made sure not to express them*".

Items were averaged and higher scores indicated greater use of suppression as an emotion

regulation strategy during stress. Reliability was moderate to high, $\alpha = .84$. The intraclass

correlation coefficient for this measure was .48 ($p < .05$).

Social Support Seeking. To measure social support sought during stress, participants completed the 4-item Emotional Support and Instrumental Support Subscales of the Brief COPE (Carver, 1997), which measures the use of support coping strategies during stress. Participants responded to each statement on a 7-point Likert scale from 1 (*I didn't do this at all*) to 7 (*I did this very often*) regarding their stress. Items from the emotional support subscale were: "*I tried to get emotional support from others*" and "*I tried to get comfort and understanding from someone.*" Items from the instrumental support subscale were: "*I tried to get help and advice from other people*" and "*I tried to get advice or help from other people about what to do*". Participants responded to an additional item which assessed the extent to which the individual attempted to deal with the stress without seeking social support. Participants responded to this item on the same 7-point Likert scale: "*I tried to handle problems on my own*". This item was reversed score and combined with the other four items, so that higher scores indicated more social support seeking. Reliability was moderate (α = .80) and the intraclass correlation coefficient for this measure was .46 (p < .05).

Negative Affect. To assess negative affect, participants reported on three emotions, *ashamed, afraid,* and *sad* on a 7-point Likert scale from 1 (*not at all*) to 7 (*extremely*). Due to a large number of participants who reported the lowest possible score for negative affect, this variable was recoded into a dichotomous variable (no negative affect/negative affect). Reliability was high (α = .95), and the intraclass correlation coefficient for this measure was .45 (p < .05).

Attention Check. For every daily entry, participants answered a question to ensure that they were paying attention to their responses: "Did you read and intentionally answer each of the above questions?". Participants answered either yes (1) or no (0). All participants paid attention to all daily entries.

Individual Difference Measures

Interdependent Cultural Orientation. To measure interdependent cultural orientation, participants completed the 14-item Communal Orientation Scale (COS; M. Clark et al., 1987), which measures how much an individual believes that caring for others and their needs are important for social relationships, as well as how much they should help others. They responded to each item on a 7-point Likert scale ranging from 1 (*Extremely Uncharacteristic of Me)* to 7 (*Extremely Characteristic of Me)*. Example items included: "*I expect people I know to be responsive to my needs and feelings*" and "*I'm not the sort of person who often comes to the aid of others*". Seven items were reverse coded and averaged together with the remaining items. Higher scores indicated greater levels of interdependence. Reliability was high, $\alpha = .81$.

Ethnicity. To have a relatively more objective measure of culture, participants reported on their self-identified ethnic background. They were asked to fill in the following statement: "*In terms of ethnic group, I consider myself to be ____.*" (Phinney, 1992). Raw responses were examined. Participants were also asked to use a drop-down menu and choose one of the following ethnic backgrounds: Asian/Pacific Islander, Multiracial, White/European American, and Other Race Not Listed here. Asian/Pacific Islander was coded as 1, and White/European American was coded as 2.

Mental Health. To measure mental health, the Depression and Anxiety subscales of the Depression, Anxiety, Stress Scale (DASS-21; Lovibond & Lovibond, 1995) and the UCLA Loneliness Scale-3 (ULS-3; Hughes et al., 2004; Russell, 1996) were used. These scales are used to assess the emotional states of depression and anxiety, and loneliness, respectively. Participants reported on all items using a 4-point Likert scale. For the DASS-21, the scale ranged from 0 (*Did not apply to me at* all) to 3 (*Applied to me very much or most of the* time). For the ULS-3, the

scale ranged from 0 (*never*) to 3 (*always*). An example depression item included: "*I felt that life was meaningless*" and an example anxiety item included: "*I felt I was close to panic*". An example loneliness item included: "*How often do you feel isolated from others?*". Items from each scale were averaged, and the three averages were combined to create a mental health index. Greater scores indicated worse mental health. Reliability for each of the individual subscales was high ($\alpha = .91$, $\alpha = .88$, $\alpha = .85$, respectively), and for the combined mental health index was moderate, $\alpha = .70$.

Extraversion. To measure extraversion, participants completed the 8-item Extraversion subscale of the Big Five Inventory (BFI; John & Srivastava, 1999), which measures individuals' trait levels of extraversion. They responded to items on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Example items included: "*is full of energy*" and "*is outgoing, sociable*". Three items were reverse coded and combined with the other five items for an average extraversion score. Greater scores indicated greater levels of extraversion. Reliability was high, $\alpha = .87$.

Results

Data Analysis Overview

Preliminary Analyses

Data analyses for the current study were done in SPSS (ver. 27, IBM Chicago, IL, USA) and R (ver. 1.2.5). Before conducting any analyses, data cleaning procedures were conducted. First, I ensured that all participants identified with the ethnicities of interest. This step was necessary because during recruitment, particularly for ITHS, some people wanted to increase their likelihood of participating in the study and therefore completed the screening survey multiple times (with a different ethnicity each time) until they qualified to participate. Once this

was detected, more secure screening survey procedures were put in place to minimize ineligible participants from participating. This process identified eight participants who were truly ineligible for participation, leaving 50 eligible participants.

Next, I went through the data to ensure normality and identified any systematic missing data patterns. Due to the format of the stress slider scale on Qualtrics, there were missing data (N = 41 L1 observations) only for this measure. This occurred because the slider scale did not register the value "4" (neutral) unless participants clicked it or dragged the slider away then back to 4. I conducted the analyses both counting those values as missing and again counting them as 4. Results were similar regardless of whether the missing data was included or was not. Therefore, in this thesis reported results included missing data. Because a majority of one participant's reports on stress were missing, the final sample used for analyses consisted of 49 participants (n_{Asians} = 22, n_{Whites} = 27).

To detect for multivariate outliers prior to analyses, I created aggregate scores for participants' momentary measures (stress, emotional suppression, social support seeking, negative affect) and conducted Mahalanobis distance procedures (Tabachnick & Fidell, 2013) using stress, emotional suppression, social support seeking, and interdependent cultural orientation. No multivariate outliers were detected.

I then further examined the ways in which the various measures of culture related to one another. First, I examined the raw data to verify whether participants' open-ended ethnicity response matched the dropdown menu reported ethnicity. There were no discrepancies between participants' open-ended responses and the ethnicity they reported using a dropdown menu. Furthermore, I conducted a between-subject t-test to examine whether Asian/Asian American and White/European American participants differed in their scores of interdependent cultural

orientation. I found no statistically significant differences in ethnicity and interdependent cultural orientation ($t(46) = 0.95$, $p = .35$, 95%CI [-0.25, 0.69]). Therefore, I used both ethnicity and interdependent cultural orientation as indicators of culture.

Next, I tested associations between key variables of interest (momentary stress, emotional suppression, social support seeking, interdependent cultural orientation and ethnicity) and potential covariates (mental health index, extraversion, negative affect) using zero-order correlations. For these correlations I used the aggregated scores created for the momentary measures (See Table 3 for bivariate correlations). Covariates that were statistically significantly associated with key variables were included in the models. These bivariate correlations suggested that mental health was associated with stress, emotional suppression, interdependent cultural orientation and ethnicity. Extraversion and negative affect were both correlated with all variables of interest. Therefore, I included all covariates. I conducted the analyses of the models first without covariates and then again with covariates to see if the results were consistent. Analyses were consistent, and therefore, for simplicity, all reported results did not include covariates.

Data Analytic Plan

I used a multi-level modeling framework to test the main research questions of interest. Two-level models were used to account for the nonindependence of multiple observations provided by each participant. Two-level models were used because experience-level data (Level 1) were nested within individuals (Level 2). I was interested in the associations among experience-level variables, and how they may differ by culture, a Level 2 variable. Momentary readings of stress, emotional suppression, social support seeking, and negative affect were analyzed at Level 1, while differences in ethnicity, interdependent cultural orientation, mental

health, and extraversion were analyzed at Level 2. Level 1 variables were standardized based on

group means and standard deviations and estimated as random. Level 2 variables were grand-

mean centered. Stress and interdependent cultural orientation were both standardized. Emotional

suppression was standardized when it was the independent variable in the mediation and

moderated mediation models, but not when it was the outcome. Figure 1 is a representation of

the theoretical model I tested.

I drew on the work of Bauer et al. (2006) to conduct lower level multilevel mediation

analyses. I first tested the mediation model (emotional suppression explaining the link between

stress and social support seeking) without interdependent cultural orientation or ethnicity as a

part of the model. Then, to conduct the moderated mediation analyses, I included interdependent

cultural orientation and ethnicity as moderators into the mediation model. These moderated

mediations were conducted separately, for ethnicity and for interdependent cultural orientation.

Lastly, I tested the separate pathways in the mediation model as bivariate multi-level models, and

then considered moderators in those models.

Test of Mediation

Table 4 summarizes the test of mediation among stress, emotional suppression, and social

support seeking. The hypothesis that emotional suppression would mediate the relationship

between stress and social support seeking was not supported. Results suggested the *a* link, the

association between stress (X) and emotional suppression (M) was not statistically significant (b

$= 0.04$, SE $= 0.04$, $p = .34$, 95%CI [-0.04, 0.11]). However, the *b* link, between emotional

suppression (M) and social support seeking (Y) was significant ($b = -0.40$, SE $= 0.07$, $p < .001$,

95%CI [-0.55, -0.24]). Specifically, greater emotional suppression was associated with less

social support seeking, as anticipated. Lastly, the *c'* link was also statistically significant. Results

suggest that stress (X) predicted social support seeking (Y), after accounting for emotional suppression (M), such that greater stress was associated with greater social support seeking (b = 0.10, SE = 0.04, p = .01, 95%CI [0.02, 0.17]). The indirect effect was 0.01 (95%CI [-0.00, 0.03]) and the total effect was 0.05 (95%CI [-0.01, 0.12]). See Figure 2.

Tests of Moderated Mediations

Next, the moderators, cultural orientation and ethnicity were entered into the mediation model to examine whether the relationship between stress and social support seeking mediated by emotional suppression would vary for those who tend to have more interdependent cultural orientations (Asians/Asian Americans) compared to those who tend to have less interdependent cultural orientations (Whites/European Americans). These results are summarized in Table 5.

Interdependent Cultural Orientation

First, tests of whether interdependent cultural orientation would moderate the pathways among stress, emotional suppression and social support seeking were conducted. When interdependent cultural orientation was added to the mediation model of stress (X) predicting social support seeking (Y) mediated by emotional suppression (M), the strength of the *a* link remained the same (b = 0.04, SE = 0.04, p = .36, 95%CI [-0.04, 0.11]), as did the *c'* link (b = 0.10, SE = 0.04, p = .02, 95%CI [0.02,0.11]). Stress (X) predicted emotional suppression (M), and stress (X) predicted social support seeking (Y) after accounting for emotional suppression (M), respectively. However, the *b* link became slightly stronger. Greater emotional suppression was associated with less social support seeking (Y; b = -0.42, SE = 0.07, p < .001, 95%CI [-0.56, -0.26]). The hypothesized interactions of stress (X) and interdependent cultural orientation (W) on both emotional suppression *(b = -0.03, SE = 0.04, p = .45, 95%CI [-0.10, 0.05])* and social support seeking (b = 0.01, SE = 0.04, p = .87, 95%CI [-0.06, 0.08]) were not statistically

significant. See Figure 3. Therefore, there was no support for the hypothesis that during times of stress, those who tend to have more interdependent cultural orientations will emotionally suppress more, thereby seeking social support less.

Ethnicity

The tests of self-identified ethnicity moderating the pathways among stress, emotional suppression, and social support seeking was not supported. The association between stress (X) and emotional suppression (M), the *a* link, was still not statistically significant ($b = 0.07$, SE = 0.12, $p = .56$, 95%CI [-0.16, 0.30]). The *b* link, the path between emotional suppression (M) and social support seeking (Y) remained in the expected direction, and statistically significant ($b = -0.41$, SE = 0.07, $p < .001$, 95%CI [-0.55, -0.25]), with greater emotional suppression predicting less social support seeking. Furthermore, the *c'* link, the relationship between stress (X) and social support seeking (Y) after adjusting for emotional suppression (M), remained in the expected direction and significant ($b = 0.31$, SE = 0.07, $p = .01$, 95%CI [0.09, 0.54]). Specifically, greater stress was associated with greater social support seeking after accounting for emotional suppression. The interaction between stress (X) and ethnicity (W) on social support seeking (Y) after accounting for emotional suppression (M), was marginally significant ($b = -0.14$, SE = 0.07, $p = .06$, 95%CI [-0.28, -0.00]). Those who identified as Asian/Asian American, greater stress predicted greater social support seeking, after adjusting for emotional suppression (see Figure 4). This association was not present for those who identified as White/European American. This pattern was contrary to expectations. Furthermore, the interaction between stress and ethnicity on emotional suppression was not statistically significant ($b = -0.02$, SE = 0.07, $p = .77$, 95%CI [-0.16, 0.13]).

Analyses of Individual Model Pathways

Due to the surprising nature of the patterns that emerged in the multilevel mediation analyses, I used multilevel modeling framework to test individual pathways among stress, emotional suppression, and social support seeking (see Table 6). These analyses helped to isolate the role of emotional suppression as a suppressor variable. Moderators of interdependent cultural orientation and ethnicity were added into these associations to test whether they moderated both the *a* link and *c* link. Table 7 summarizes these associations.

Stress Predicting Emotional Suppression (a path)

The bivariate association between momentary stress (X) and emotional suppression (M) was not significant ($b = 0.04$, $SE = 0.04$, $p = .36$, 95%CI [-0.04, 0.11]). When the moderator of interdependent cultural orientation was added into the model, there was a main effect of interdependent cultural orientation, such that greater interdependent cultural orientation predicted *lower* emotional suppression ($b = -0.46$, $SE = 0.14$, $p = .00$, 95%CI [-0.74, -0.19]), contrary to expectations. There was no main effect of stress ($b = 0.04$, $SE = 0.04$, $p = .35$, 95%CI [-0.04, 0.11]), and the interaction between stress and interdependent cultural orientation on emotional suppression was not statistically significant ($b = -0.02$, $SE = 0.04$, $p = .67$, 95%CI [-0.09, 0.06]).

When the moderator of ethnicity was entered into the model of stress predicting emotional suppression, neither the main effect of stress ($b = 0.08$, $SE = 0.12$, $p = .52$, 95%CI [-0.16, 0.32]) nor ethnicity ($b = 0.32$, $SE = 0.32$, $p = .31$, 95%CI [-0.29, 0.94]) was significant. The interaction between stress and ethnicity was also not statistically significant ($b = -0.03$, $SE = 0.08$, $p = .71$, 95%CI [-0.18, 0.12]). In summary, stress, ethnicity, and the interaction between stress and ethnicity did not predict emotional suppression. Please see Table 7 for full details on of these analyses.

Emotional Suppression Predicting Social Support Seeking (b path)

The bivariate association between emotional suppression and social support seeking was negative, indicating that greater emotional suppression was associated with less social support seeking (b = -0.26, SE = 0.05, p < .001, 95%CI [-0.35, -0.17]), as expected. Moderation analyses were not conducted on this pathway, as they were not hypothesized.

Stress Predicting Social Support Seeking (c path)

As shown in Table 6, contrary to my hypothesis, stress did not directly predict social support seeking (b = 0.06, SE = 0.04, p = .17, 95%CI [-0.02, 0.15]) when used as the only predictor. The non-statistically significant link between stress and social support seeking remained consistent after interdependent cultural orientation as added a moderator of the association (b = 0.06, SE = 0.04, p = .17, 95%CI [-0.03, 0.15]). There was also no main effect of interdependent cultural orientation on social support seeking (b = -0.14, SE = 0.12, p = .24, 95%CI [-0.37, 0.09]). Furthermore, stress and interdependent cultural orientation did not interact to predict social support seeking (b = -0.00, SE = 0.04, p = .96, 95%CI [-0.09, 0.09]).

However, when ethnicity was entered into the model as a moderator, there was a marginally significant main effect of stress, such that greater stress was associated with greater social support seeking (b = 0.28, SE = 0.14, p = .048, 95%CI [0.01, 0.55]). Results did not suggest a main effect of ethnicity (b = 0.24, SE = 0.24, p = .33, 95%CI [-0.23, 0.71]), nor an interaction between stress and ethnicity to predict social support seeking (b = -0.14, SE = 0.09, p = .10, 95%CI [-0.31, 0.03]).

Although it is not an essential part of this thesis, social support seeking was also parsed out into tangible and emotional support seeking. I tested whether stress predicted either of these types of support seeking. Stress still did not predict emotional support seeking (b = 0.05, SE = 0.05, p = .30, 95%CI [-0.05, 0.15]) but did predict tangible support seeking (b = 0.14, SE = 0.05,

p = .01, 95%CI [0.03, 0.25]), with greater stress predicting greater tangible social support seeking.

Stress and Emotional Suppression Predicting Social Support Seeking (ab path)

Stress and emotional suppression were also entered into the model simultaneously to predict social support seeking. Results from this model suggest that greater stress was associated with greater social support seeking (*b* = 0.09, *SE* = 0.03, *p* = .02, 95%CI [0.02, 0.17]). Emotional suppression also predicted social support seeking, such that greater emotional suppression was associated with less social support seeking (*b* = -0.27, *SE* = 0.04, *p* < .001, 95%CI [-0.36, -0.18]), as expected. When interdependent cultural orientation was added to the model as a moderator, results suggested that there was a main effect of stress on social support seeking (*b* = 0.09, *SE* = 0.04, *p* = .02, 95%CI [0.02, 0.17]), with greater stress predicting greater social support seeking, as anticipated. Additionally, there was a main effect of emotional suppression on social support seeking (*b* = -0.27, *SE* = 0.04, *p* < .001, 95%CI [-0.35, -0.17]), such that greater emotional suppression predicted less social support seeking. However, the main effect of interdependent cultural orientation (*b* = -0.18, *SE* = 0.11, *p* = .13, 95%CI [-0.41, 0.05]), as well as the interaction between stress and interdependent cultural orientation *b* = 0.01, *SE* = 0.04, *p* = .78, 95%CI [-0.06, 0.09]) did not predict social support seeking. Tables 6 and 7 summarize these analyses.

Ethnicity was then entered in the model that used both stress and emotional suppression to predict social support seeking. Analyses suggested that greater stress predicted greater social support seeking (*b* = 0.30, *SE* = 0.12, *p* = .01, 95%CI [0.07, 0.53]). As expected, emotional suppression also predicted social support seeking, with greater emotional suppression predicting less social support seeking (*b* = -0.27, *SE* = 0.04, *p* < .001, 95%CI [-0.36, -0.17]). Although results did not suggest a main effect of ethnicity (*b* = 0.09, *SE* = 0.03, *p* = .02, 95%CI [0.02,

0.17]), the interaction between stress and ethnicity on social support seeking was worthy of further exploration (b = -0.14, SE = 0.07, p = .07, 95%CI [-0.28, 0.01]). Specifically, greater stress was more strongly associated with greater social support seeking among Asian/Asian American participants, whereas the association between stress and social support seeking was weaker among White/European American participants. See Figure 3.

Discussion

The goal of this thesis was to examine whether differences in emotion regulation, specifically, emotional suppression would explain why social support may or may not be sought during times of stress. It also investigated the role of interdependent cultural orientation and ethnicity in moderating the association between stress and social support seeking, as well as between stress and emotional suppression. There was no clear evidence of support for any of the four proposed hypotheses. However, other interesting patterns emerged. Evidence suggested that it is important to consider the type of social support sought. Specifically, tangible support may be more beneficial during certain times of stress. Results also indicated that after adjusting for emotional suppression, greater stress predicted greater social support seeking. This association also varied as a function of ethnicity, with Asian/Asian Americans reporting greater social support seeking during greater times of stress. Furthermore, greater emotional suppression consistently predicted less social support seeking. Lastly, higher levels of interdependence were associated with *lower* levels of emotional suppression.

Stress and Social Support Seeking

Contrary to expectations, the first hypothesis that stress would predict social support seeking was not supported. Exploring this further, greater stress predicted more tangible support seeking, but not emotional support seeking. It may be that the combined measure of social

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support seeking obscured the association between stress and support seeking. People may seek specific types of support to deal with their stress. Tangible support may be more beneficial because getting advice, for example, may feel especially helpful in certain types of stressful situations. This idea is supported by Åslund et al. (2014)'s study that found that tangible support buffered the negative effects of financial stress on psychological well-being. Furthermore, although it was not part of my thesis research, participants were asked to reflect on the stress they felt each day. Several participants described stress related to academics. Past work indicates that the link between academic stress and depression is attenuated for those who report more tangible support (Macgeorge et al., 2005), whereas other research suggests that academic stress for college students is not buffered by emotion-focused coping (Struthers et al., 2000). Participants in the current study may have felt that obtaining tangible assistance from close others in their moments of stress (e.g., academic stress) would be more helpful than obtaining comfort or understanding, and therefore participants may not have sought emotional support.

Emotional Suppression Mediating Stress and Social Support Seeking

Results also did not support the second hypothesis that during times of stress, those who emotionally suppress would be less likely to seek social support. However, upon further examination of the different paths within the mediation model, interesting patterns emerged both contrary to, and in line with, expectations. First, there was no influence of stress on emotional suppression, contrary to expectations. My hypotheses were based on the well-established literature that examines emotional suppression varying as a function of the individual rather than by situation. To my knowledge, emotional suppression has not typically been examined at the momentary level. Among the few studies that have examined emotion regulation in daily life, trait measures of emotion regulation tend to minimally correlate with momentary emotion

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regulation (Brockman et al., 2017). This inconsistency between trait and momentary emotion regulation suggests that emotional suppression may function differently in a situational context. This area of research should expand the use of ecological momentary assessment methods (Colombo et al., 2020). Given the important consequences of emotion regulation (Colombo et al., 2020), it may be important to test variation in emotional suppression between individuals as well as within person variation in everyday experiences.

Next, as expected, evidence emerged indicating that greater emotional suppression predicted less social support seeking, consistently across tests of the various models. Research suggests that when one suppresses their emotions, it may be to avoid the social costs of disclosing those emotions (Greenaway & Kalokerinos, 2017) such as avoidance of burdening others and maintenance of group harmony (Chiang, 2012). Participants may have suppressed their emotions, because they wanted to limit the social costs of seeking support and did not want to burden others.

Third, patterns suggested that greater stress predicted greater social support seeking, after taking emotional suppression into account. Similarly, when stress and emotional suppression were entered simultaneously, residual stress predicted greater support seeking. It seems as though emotional suppression has a great deal of explanatory power in social support processes. Once emotional suppression was accounted for, the residual variability in support seeking could be explained by stress. It may not be a case of whether emotional suppression *explains* the link between stress and support seeking, but rather *for whom* does this association occur. This would suggest that a moderation model may be more accurate. It could be that for those who suppress more, the magnitude of the relation between stress and social support seeking may be weaker than it is for those who suppress less. The tendency to suppress is linked with attachment

avoidance, or less of a desire to share and be close with others (Gross & John, 2003; Velotti et al., 2016). Those who habitually use suppression may not be willing to seek their close others and share their stress with them. Support seeking may undermine attempts to conceal affective states. Therefore, a moderation model may more accurately capture how these constructs relate to one another.

Furthermore, emotional suppression appears to be acting like a suppressor variable in this study. In the models without emotional suppression, stress does not predict social support seeking. However, when emotional suppression is included in the various models, stress *does* predict support seeking. This may be because social situations that promote emotional suppression may have commonly occurred in participants' lives. People tend to suppress their emotions in different social contexts in daily life (English et al., 2017). For example, social contexts in which others are present, or when instrumental goals are prioritized (English et al., 2017) may be more conducive to suppressing emotions. It could be that the participants in this thesis study experienced these situational contexts that promoted emotional suppression. Therefore, once emotional suppression was considered, then the relation between stress and social support seeking became clear. Emotional suppression may restrict our ability to understand the willingness to seek support, emphasizing the importance of considering the role of emotional suppression in support seeking processes.

Culture Moderations

There was no evidence for the third hypothesis that during times of stress, those with more interdependent cultural orientations would seek social support less than those with more independent cultural orientations. Likewise, contrary to the fourth hypothesis that during times of stress, those with more interdependent cultural orientations were not any more likely to suppress

than those with more independent cultural orientations. One plausible reason for these patterns could be that the analyses were underpowered to detect differences between participants. It is possible that the moderated mediations may have been supported if the sample was larger. Future analyses could also use more robust frameworks, such as Bayesian statistics. Bayesian statistics can produce more accurate estimates, especially among data with low variation in group-level variables (Gelman et al., 2012).

Although the moderated mediation models were not supported, greater stress did predict greater social support seeking after accounting for emotional suppression, but only for Asian/Asian Americans. It may be that Asian/Asian Americans forbear seeking social support when they are experiencing low, trivial stress, but rather seek it when experiencing more severe stress, or during more precarious situations. Because they appraise their stress to be important enough to ask for the help of others, they may not feel the need to "save face," or avoid feeling shame or being perceived as weak by their close others (Chiang, 2015). This could result in their seeking social support during more stressful times. On the other hand, this pattern among Asian/Asian Americans was not observed for those who identified as White/European American. White/European American participants reported relatively consistent levels of sought social support, regardless of the amount of stress they reported. White/European Americans may seek support for both trivial stressors and major stressors. Taken together, these results suggest that these two groups may lean on their supportive others differently, under different types of circumstances.

Another potential reason for why stress predicted support seeking among Asian/Asian American participants could be due to the circumstances during data collection. Since these data were obtained during the unprecedented COVID-19 pandemic, those from more collectivistic

cultures, such as Asian/Asian Americans, may be relying on their support system differently than prior to the pandemic. They may be severely worried that their loved ones may get sick from COVID-19, are sick from COVID-19, or that they may be harassed due to the increases in Asian/Asian American hate crimes (Tessler et al., 2020). It is possible that these participants may have felt the need to put aside their concerns about burdening others, or worries about "saving face", and instead seek out the support of their close others to deal with these extraordinary circumstances. Therefore, participants may have sought more social support when they felt greater stress.

Culture and Emotional Suppression

Contrary to expectations, those with more interdependent cultural orientations reported less momentary emotional suppression. This surprising result may be related in part to the Communal Orientation scale (M. Clark et al., 1987) that was used to measure interdependent cultural orientation. For example, in a different study using this same measure, greater communal orientation predicted more disposition to express emotions (M. S. Clark & Finkel, 2005). Those scoring higher in interdependence on this measure may feel safe and comfortable sharing their emotions with those around them because they believe that people should prioritize assisting each other. Participants who felt more oriented towards their community may have reported suppressing their emotions less because they believed that others should help them out in their times of stress.

Limitations and Future Directions

The findings of this study should be considered in light of a few limitations. First, the number of participants was relatively small. Although a multilevel modeling framework was used, allowing for more statistical power for within-person analyses, power was limited for

between-person level comparisons. The small sample size was especially limiting for the tests of the proposed moderated mediation models. Second, the data collection was conducted during the COVID-19 pandemic as well as the pivotal 2021 presidential inauguration. It may have been that these external events influenced levels of stress and perceptions of stress. Responses to those stressful events may have varied by ethnic group thereby differentially influencing the willingness to seek support. For example, during times of greater stress, Asian/Asian Americans may have sought support more than typical before the pandemic and government-mandated lockdowns, which could be attributed to the unprecedented nature of these stressful events. Third, all responses were self-reported. Due to structure of the study and the multiple measurements taken throughout the day, participants were likely highly conscious of their experiences (Conner & Lehman, 2012; Willett et al., Forthcoming), and this awareness can influence the salience of the tested constructs (Conner & Reid, 2012). Participants may also feel burdened by the abundance of reports taken throughout the day, which may lead to inaccuracies in responses (Conner & Lehman, 2012).

Although there were limitations of this study, there were also numerous strengths. First, this study used an experience sampling methodology that allowed for capturing of how real-time stress, social support seeking, and emotional suppression function in daily life as opposed to studies conducted in a laboratory setting. A second strength was approach used for participant recruitment. Although this study recruited college students, a relatively more diverse sample was obtained using the ITHS website. This approach increases the generalizability of the findings of this study, and allows us to better understand how stress, social support seeking, and emotional suppression function in daily life for both college students and other adults. A third strength was the use of multilevel modeling analyses. Given the nested structure of the data, this approach

allowed for tests of within person dynamics. Since stress, emotional suppression, and social support seeking were all measured at the experience-level, nested within each person, these analyses matched this type of data.

A few considerations should be made in future research. For example, researchers should draw on a larger sample to address the issue of statistical power to detect cultural differences. Studies should also include physiological measures of stress. Objective markers of stress allow for the examination of implicit stress responses which can provide insight into less biased reports of stress (Crano et al., 2014). For example, researchers could measure the body's stress response through cortisol levels. Testing within person associations of cortisol could give more insight into daily stress (Schlotz, 2019). Lastly, unfolding dynamics of social support seeking and emotional suppression over time should be examined. Stress spillover, or the idea that previous stress experiences may influence later experiences in different settings (Piotrkowski, 1979; Repetti & Wang, 2017) raise important questions that can be examined through experience sampling studies. Research indicates that stress spillover occurs in a variety of social interactions in daily life (Neff & Karney, 2004; Pourmand et al., under review). It may be that stress affects one's willingness to seek social support or desire to emotionally suppress. The choice to either suppress or seek support could have lingering effects over a day or week, thereby potentially reducing levels of stress at a later time. Therefore, the unfolding dynamics of these psychological processes should be further explored in future research.

Conclusions

Overall, this study expands our understanding of the psychological processes relevant to stress and social support in daily life. During stressful times, seeking particular types of support, such as tangible support, may feel especially useful. However, because culture can influence

social support request, ethnic groups, such as Asian/Asian Americans, may forbear seeking support for trivial stress but rather seek support for major stressful events. Furthermore, certain social contexts (e.g., others being physically present during stress) may be especially conducive to suppressing emotions and may limit our ability to understand times when social support is sought, highlighting the importance of considering the role of emotional suppression. Overall, these complex relationships between stress, emotion regulation, and social support seeking have implications for how people differentially seek support in their daily lives.

References

Alsubaie, M. M., Stain, H. J., Webster, L. A. D., & Wadman, R. (2019). The role of sources of social support on depression and quality of life for university students. *International Journal of Adolescence and Youth*, *24*(4), 484–496. https://doi.org/10.1080/02673843.2019.1568887

Åslund, C., Larm, P., Starrin, B., & Nilsson, K. W. (2014). The buffering effect of tangible social support on financial stress: Influence on psychological well-being and psychosomatic symptoms in a large sample of the adult general population. *International Journal for Equity in Health*, *13*(1), 85. https://doi.org/10.1186/s12939-014-0085-3

Bauer, D. J., Preacher, K. J., & Gil, K. M. (2006). Conceptualizing and testing random indirect effects and moderated mediation in multilevel models: New procedures and recommendations. *Psychological Methods*, *11*(2), 142–163. https://doi.org/10.1037/1082-989X.11.2.142

Bolger, N., & Amarel, D. (2007). Effects of social support visibility on adjustment to stress: Experimental evidence. *Journal of Personality and Social Psychology*, *92*(3), 458–475. https://doi.org/10.1037/0022-3514.92.3.458

Brockman, R., Ciarrochi, J., Parker, P., & Kashdan, T. (2017). Emotion regulation strategies in daily life: Mindfulness, cognitive reappraisal and emotion suppression. *Cognitive Behaviour Therapy*, *46*(2), 91–113. https://doi.org/10.1080/16506073.2016.1218926

Burns, J. W., Quartana, P. J., & Bruehl, S. (2007). Anger management style moderates effects of emotion suppression during initial stress on pain and cardiovascular responses during subsequent pain-induction. *Annals of Behavioral Medicine*, *34*(2), 154–165. https://doi.org/10.1007/BF02872670

Butler, E. A., Lee, T. L., & Gross, J. J. (2007). Emotion regulation and culture: Are the social

consequences of emotion suppression culture-specific? *Emotion*, *7*(1), 30–48.

https://doi.org/10.1037/1528-3542.7.1.30

Butler, E. A., Lee, T. L., & Gross, J. J. (2009). Does expressing your emotions raise or lower

your blood pressure?: The answer depends on cultural context. *Journal of Cross-Cultural*

Psychology, *40*(3), 510–517. https://doi.org/10.1177/0022022109332845

Campos, B., & Kim, H. S. (2017). Incorporating the cultural diversity of family and close

relationships into the study of health. *American Psychologist*, *72*(6), 543–554.

https://doi.org/10.1037/amp0000122

Carver, C. S. (1997). You want to measure coping but your protocol's too long: Consider the

brief COPE. *International Journal of Behavioral Medicine*, *4*(1), 92–100.

https://doi.org/10.1207/s15327558ijbm0401_6

Chang, J. (2015). The interplay between collectivism and social support processes among Asian

and Latino American College students. *Asian American Journal of Psychology*, *6*(1), 4–

14. https://doi.org/10.1037/a0035820

Chiang, W.-T. (2012). The suppression of emotional expression in interpersonal context. *Bulletin*

of Educational Psychology, *43*(3), 657–680.

Clark, M., Ouellette, R., Powell, M., & Milberg, S. (1987). Recipient's mood, relationship type,

and helping. *Journal of Personality and Social Psychology*, *53*, 94–103.

https://doi.org/10.1016/j.gloplacha.2017.08.018

Clark, M. S., & Finkel, E. J. (2005). Willingness to express emotion: The impact of relationship

type, communal orientation, and their interaction. *Personal Relationships*, *12*(2), 169–

180. https://doi.org/10.1111/j.1350-4126.2005.00109.x

Cobb, S. (1976). Social support as a moderator of life stress. *Psychosomatic Medicine*, *38*, 300–314.

Cohen, S., Janicki-Deverts, D., & Miller, G. E. (2007). Psychological stress and disease. *JAMA*, *298*(14), 1685–1687. https://doi.org/10.1001/jama.298.14.1685

Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis: A theoretical analysis. *Psychological Bulletin*, *98*(2), 310–357.

Collins, N. L., & Feeney, B. C. (2000). A safe haven: An attachment theory perspective on support seeking and caregiving in intimate relationships. *Journal of Personality and Social Psychology*, *78*(6), 1053–1073. https://doi.org/10.1037/0022-3514.78.6.1053

Colombo, D., Fernández-Álvarez, J., Suso-Ribera, C., Cipresso, P., Valev, H., Leufkens, T., Sas, C., Garcia-Palacios, A., Riva, G., & Botella, C. (2020). The need for change: Understanding emotion regulation antecedents and consequences using ecological momentary assessment. *Emotion*, *20*(1), 30–36. https://doi.org/10.1037/emo0000671

Conner, T. S., & Reid, K. A. (2012). Effects of intensive mobile happiness reporting in daily life. *Social Psychological and Personality Science*, *3*(3), 315–323. https://doi.org/10.1177/1948550611419677

Crano, W. D., Brewer, M. B., & Lac, A. (2014). *Principles and methods of social research* (Third edition). Routledge.

Dunkel Schetter, C., Folkman, S., & Lazarus, R. S. (1987). Correlates of social support receipt. *Journal of Personality and Social Psychology*, *53*(1), 71.

English, T., Lee, I. A., John, O. P., & Gross, J. J. (2017). Emotion regulation strategy selection in daily life: The role of social context and goals. *Motivation and Emotion*, *41*(2), 230–242. https://doi.org/10.1007/s11031-016-9597-z

Gelman, A., Hill, J., & Yajima, M. (2012). Why we (usually) don't have to worry about multiple

   comparisons. *Journal of Research on Educational Effectiveness*, *5*(2), 189–211.

   https://doi.org/10.1080/19345747.2011.618213

Gianaros, P. J., & Wager, T. D. (2015). Brain-body pathways linking psychological stress and

   physical health. *Current Directions in Psychological Science*, *24*(4), 313–321.

   https://doi.org/10.1177/0963721415581476

Green, E. G. T., Deschamps, J. C., & Páez, D. (2005). Variation of individualism and

   collectivism within and between 20 countries: A typological analysis. *Journal of Cross-*

   Cultural Psychology, *36*(3), 321–339. https://doi.org/10.1177/0022022104273654

Greenaway, K. H., & Kalokerinos, E. K. (2017). Suppress for success? Exploring the contexts in

   which expressing positive emotion can have social costs. *European Review of Social*

   Psychology, *28*(1), 134–174. https://doi.org/10.1080/10463283.2017.1331874

Gross, J. J., & John, O. P. (1998). Mapping the domain of expressivity: Multimethod evidence

   for a hierarchical model. *Journal of Personality and Social Psychology*, *74*(1), 170–191.

   https://doi.org/10.1037/0022-3514.74.1.170

Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes:

   Implications for affect, relationships, and well-being. *Journal of Personality and Social*

   Psychology, *85*(2), 348–362. https://doi.org/10.1037/0022-3514.85.2.348

Hammen, C. (2005). Stress and depression. *Annual Review of Clinical Psychology*, *1*, 293–319.

   https://doi.org/10.1146/annurev.clinpsy.1.102803.143938

Hill, E. M. (2016). Quality of life and mental health among women with ovarian cancer:

   Examining the role of emotional and instrumental social support seeking. *Psychology,*

   Health and Medicine, *21*(5), 551–561. https://doi.org/10.1080/13548506.2015.1109674

Hill, E. M., & Watkins, K. (2017). Women with Ovarian cancer: Examining the role of social

    support and rumination in posttraumatic growth, psychological distress, and

    psychological well-being. *Journal of Clinical Psychology in Medical Settings*, *24*(1), 47–

    58. https://doi.org/10.1007/s10880-016-9482-7

Hughes, M. E., Waite, L. J., Hawkley, L. C., & Cacioppo, J. T. (2004). A short scale for

    measuring loneliness in large surveys: Results from two population-based studies. In

    Research on Aging (Vol. 26, Issue 6, pp. 655–672). NIH Public Access.

    https://doi.org/10.1177/0164027504268574

Huwaë, S., & Schaafsma, J. (2018). Cross-cultural differences in emotion suppression in

    everyday interactions. *International Journal of Psychology*, *53*(3), 176–183.

    https://doi.org/10.1002/ijop.12283

Ishii, K., Mojaverian, T., Masuno, K., & Kim, H. S. (2017). Cultural differences in motivation

    for seeking social support and the emotional consequences of receiving support: The role

    of influence and adjustment goals. *Journal of Cross-Cultural Psychology*, *48*(9), 1442–

    1456. https://doi.org/10.1177/0022022117731091

John, O. P., & Srivastava, S. (1999). *The Big-Five trait taxonomy: History, measurement, and*

    theoretical perspectives (Vol. 2, pp. 102–138). Berkeley: University of California.

Kim, H. S., & Sasaki, J. Y. (2012). Emotion regulation: The interplay of culture and genes.

    Social and Personality Psychology Compass, *6*(12), 865–877.

    https://doi.org/10.1111/spc3.12003

Kim, H. S., Sherman, D. K., Ko, D., & Taylor, S. E. (2006). Pursuit of comfort and pursuit of

    harmony: Culture, relationships, and social support seeking. *Personality and Social*

    Psychology Bulletin, *32*(12), 1595–1607. https://doi.org/10.1177/0146167206291991

Kim, H. S., Sherman, D. K., & Taylor, S. E. (2008). Culture and social support. *American Psychologist*, *63*(6), 518–526. https://doi.org/10.1037/0003-066X

Kivimäki, M., & Steptoe, A. (2018). Contribution of stress to the aetiology and prognosis of cardiovascular disease. *Nature Reviews Cardiology*, *15*(4), 215.

Lapinski, M. K., & Levine, T. R. (2000). Culture and information manipulation theory: The effects of self-construal and locus of benefit on information manipulation. *Communication Studies*, *51*(1), 55–73. https://doi.org/10.1080/10510970009388509

Levine, T. R., Bresnahan, M. J., Park, H. S., Lapinski, M. K., Wittenbaum, G. M., Shearman, S. M., Lee, S. Y., Chung, D., & Ohashi, R. (2003). Self-construal scales lack validity. *Human Communication Research*, *29*(2), 210–252. https://doi.org/10.1093/hcr/29.2.210

Li, M. hui, & Yang, Y. (2009). Determinants of problem solving, social support seeking, and avoidance: A path analytic model. *International Journal of Stress Management*, *16*(3), 155–176. https://doi.org/10.1037/a0016844

Lovibond, P. F., & Lovibond, S. H. (1995). The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. *Behaviour Research and Therapy*, *33*(3), 335–343. https://doi.org/10.1016/0005-7967(94)00075-U

Macgeorge, E. L., Samter, W., & Gillihan, S. J. (2005). Academic stress, supportive communication, and health. *Communication Education*, *54*(4), 365–372. https://doi.org/10.1080/03634520500442236

Markus, H. R., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review*, *98*(2), 224–253. https://doi.org/10.1037/0033-295X.98.2.224

Markus, H. R., & Kitayama, S. (2010). Cultures and selves: A cycle of mutual constitution.

    Perspectives on Psychological Science, *5*(4), 420–430.

    https://doi.org/10.1177/1745691610375557

Mojaverian, T., & Kim, H. S. (2013). Interpreting a helping dand: Cultural variation in the

    effectiveness of solicited and unsolicited social support. *Personality and Social*

    Psychology Bulletin, *39*(1), 88–99. https://doi.org/10.1177/0146167212465319

Neff, L. A., & Karney, B. R. (2004). How does context affect intimate relationships? Linking

    external stress and cognitive processes within marriage. *Personality and Social*

    Psychology Bulletin, *30*(2), 134–148. https://doi.org/10.1177/0146167203255984

Phinney, J. S. (1992). The mulitgroup ethnic identity measure: A new scale for use with diverse

    groups. *Journal of Adolescent Research*, *7*(2), 156–176.

Piotrkowski, C.S. (1979). *Work and the family system: A naturalistic study of working-class and*

    lower middle-class families. New York: Free Press.

Pourmand, V., Lawley, K. A., & Lehman, B. J. (under review). *Cultural differences in stress and*

    affection following social support receipt.

Ramzan, N., & Amjad, N. (2017). Cross cultural variation in emotion: A review. *Annals of*

    KEMU, *23*(1), 77–90.

Reblin, M., & Uchino, B. N. (2008). Social and emotional support and its implication for health.

    International Journal of Behavioural and Healthcare Research, *21*(2), 201–205.

    https://doi.org/10.1097/YCO.0b013e3282f3ad89.Social

Repetti, R., & Wang, S. (2017). Effects of job stress on family relationships. *Current Opinion in*

    Psychology, *13*, 15–18. https://doi.org/10.1016/j.copsyc.2016.03.010

Rife, S. C., Kerns, K. A., & Updegraff, J. A. (2016). Seeking support in response to social and

    achievement stressors: A multivenue analysis. *Personal Relationships*, *23*(2), 364–379.

    https://doi.org/10.1111/pere.12130

Russell, D. W. (1996). UCLA Loneliness Scale (Version 3): Reliability, validity, and factor

    structure. *Journal of Personality Assessment*, *66*(1), 20–40.

    https://doi.org/10.1207/s15327752jpa6601_2

Schlotz, W. (2019). Investigating associations between momentary stress and cortisol in daily

    life: What have we learned so far? *Psychoneuroendocrinology*, *105*, 105–116.

    https://doi.org/10.1016/j.psyneuen.2018.11.038

Sherman, D. K., Kim, H. S., & Taylor, S. E. (2009). Culture and social support: Neural bases and

    biological impact. In *Progress in Brain Research* (Vol. 178, Issue C). Elsevier.

    https://doi.org/10.1016/S0079-6123(09)17816-0

Singelis, T. M., & Brown, W. J. (1995). Culture, self, and collectivist communication linking

    culture to individual behavior. *Human Communication Research*, *21*(3), 354–389.

    https://doi.org/10.1111/j.1468-2958.1995.tb00351.x

Struthers, C. W., Perry, R. P., & Menec, V. H. (2000). *An examination of the relationship among*

    academic stress, coping, motivation, and performance in college. *41*(5), 581–592.

Suchday, S., & Larkin, K. T. (2004). Psychophysiological responses to anger provocation among

    Asian Indian and White men. *International Journal of Behavioral Medicine*, *11*(2), 71–

    80. https://doi.org/10.1207/s15327558ijbm1102_2

Taylor, S. E., Sherman, D. K., Kim, H. S., Jarcho, J., Takagi, K., & Dunagan, M. S. (2004).

    Culture and social support: Who seeks it and why? *Journal of Personality and Social*

    Psychology, *87*(3), 354–362. https://doi.org/10.1037/0022-3514.87.3.354

Taylor, S. E., Welch, W. T., Kim, H. S., & Sherman, D. K. (2007). Cultural differences in the

impact of social support on psychological and biological stress responses. *Psychological

Science*, *18*(9), 831–837. https://doi.org/10.1111/j.1467-9280.2007.01987.x

Tessler, H., Choi, M., & Kao, G. (2020). The anxiety of being Asian American: Hate crimes and

negative biases during the COVID-19 pandemic. *American Journal of Criminal Justice*,

45(4), 636–646. https://doi.org/10.1007/s12103-020-09541-5

Velotti, P., Balzarotti, S., Tagliabue, S., English, T., Zavattini, G. C., & Gross, J. J. (2016).

Emotional suppression in early marriage: Actor, partner, and similarity effects on marital

quality. *Journal of Social and Personal Relationships*, *33*(3), 277–302.

https://doi.org/10.1177/0265407515574466

Vignoles, V. L. (2018). The "common view", the "cultural binary", and how to move forward.

Asian Journal of Social Psychology, *21*(4), 336–345. https://doi.org/10.1111/ajsp.12346

Wang, M., & Saudino, K. J. (2011). Emotion regulation and stress. *Journal of Adult

Development*, *18*(2), 95–103. https://doi.org/10.1007/s10804-010-9114-7

Wang, S., Shih, J. H., Hu, A. W., Louie, J. Y., & Lau, A. S. (2010). Cultural differences in daily

support experiences. *Cultural Diversity and Ethnic Minority Psychology*, *16*(3), 413–420.

https://doi.org/10.1037/a0019885

Wei, M., Carrera, S., Su, J. C., Lin, S. P., & Yi, F. (2013). Suppression and interpersonal

harmony: A cross-cultural comparison between Chinese and European Americans.

Journal of Counseling Psychology, *60*(4), 625–633. https://doi.org/10.1037/a0033413

Willett, Z. Z., Lawley, K. A., Lehman, B. J., & Scollon, C. N. (Forthcoming). Methodologies for

cross-cultural comparisons of subjective experiences: Addressing responses biases. In

Cultural Methodologies in Psychology: Capturing and Transforming Cultures. Kate C.

McLean.

Xie, D., & Xie, Z. (2019). Adolescents' online anger and aggressive behavior: Moderating effect

of seeking social support. *Social Behavior and Personality*, *47*(6), 1–10.

https://doi.org/10.2224/sbp.7976

Tables and Figures

Table 1. Descriptive Statistics of Variables of Interest

	N	*M*	*SD*	*Range (min, max)*
Extraversion	49	3.13	0.96	(1.13, 4.88)
Negative Affect	913	1.64	0.48	(1.00, 2.00)
Mental Health Index	49	1.17	0.57	(0.11, 2.38)
Stress	913	3.08	1.32	(1.00, 7.00)
Emotional Suppression	913	4.12	1.32	(1.00, 7.00)
Social Support Seeking	913	2.28	1.17	(1.05, 6.80)
Interdependent Cultural Orientation	49	4.95	0.80	(3.21, 6.57)

Note. Overall means are reported in the table above. Negative affect is a dichotomous variable.

Table 2. Descriptive Statistics of Demographic Variables

	N	*M/%*	*SD*	*Range (min, max)*
Age	49	22.69	6.48	(18.00, 48.00)
Subjective SES	48	5.60	1.63	(2.00, 8.00)
Generation status	49	2.69	1.21	(1st gen, 4th gen)
# of Daily Reports	913	19.08	5.46	(4.00, 26.00)
Gender				
Female	27	55%		
Male	17	35%		
Non-binary/Identity not listed	5	10%		
Recruitment Location				
SONA	22	45%		
ITHS	27	55%		
Ethnicity				
Asian/Pacific Islander	22	45%		
White/European American	27	55%		

Note. SONA = WWU University Subject Pool, ITHS = Institute of Translational Health Sciences online recruitment website. Average number of daily reports is the average number of reports per participant.

Table 3. Zero-Order Correlations Among Aggregated Variables of Interest (*N* = 49)

	Extrav	NA	MH	Stress	ES	SS	Culture	Ethnicity
1. Extraversion (Extrav)	--							
2. Negative Affect (NA)	-.27	--						
3. Mental Health index (MH)	-.44**	.65**	--					
4. Stress	-.22	.63**	.52**	--				
5. Emotional Suppression (ES)	-.16	.28	.36*	.09	--			
6. Social Support Seeking (SS)	.16	.39**	.17	**.45****	-.26	--		
7. Interdependent Cultural Orientation (Culture)	.29*	-.47**	-.32*	-.18	**-.44****	-.18	--	
8. Ethnicity	-.08	.20	.34*	.04	.19	.18	-.10	--

Note: All level 1 variables (negative affect, stress, emotional suppression, social support seeking) are averaged scores on those variables for each participant. Bolded correlations indicate a significant association between key variables in mediation and/or moderated mediation models. **p < 0.01, *p < 0.05.

Table 4. Tests of Multilevel Mediation

Model	a coefficient (SE)	b coefficient (SE)	c' coefficient (SE)	Indirect effect	95%CI	Total effect	95%CI
Stress → Emotional Suppression → SS Seeking	0.04 (0.04)	-0.40*** (0.07)	0.10* (0.04)	0.01	[-0.00, 0.03]	0.05	[-0.01, 0.12]

*Note. The table above includes missing data and does not include covariates. *p<.05, ***p<.001*

Table 5. Tests of Multilevel Moderated Mediation

Model	a coefficient (SE)	b coefficient (SE)	c' coefficient (SE)
1. Interdependent Cultural Orientation Stress → Emotional Suppression → SS Seeking	0.04 (0.04)	-0.42*** (0.07)	0.10* (0.04)
2. Ethnicity Stress → Emotional Suppression → SS Seeking	0.07 (0.12)	-0.41*** (0.07)	**0.31*** **(0.07)**

*Note. The table above includes missing data and does not include covariates. Bolded coefficient indicates the path moderated by ethnicity. *p<.05, ***p<.001.*

Table 6. Tests of Individual Pathways of Overall Model ($N_{L1} = 913$, $N_{L2} = 49$)

Model	Pseudo R²	b	SE	p value	95%CI
a. Stress → Emotional Suppression	0.64	0.04	0.04	.36	[-0.04, 0.11]
b. Emotional Suppression → Social Support Seeking	0.55	**-0.26***	0.05	<.001	[-0.35, -0.17]
c. Stress → Social Support Seeking	0.49	0.06	0.04	.17	[-0.02, 0.15]
ab. Stress + Emotional Suppression → Social Support Seeking	0.58	**0.09*, -0.27***	0.03, 0.04	.02, <.001	[0.02, 0.17], [-0.36, -0.18]

Note. In model ab, stress and emotional suppression are entered into the model simultaneously. Coefficients, standard errors, p values, and confidence intervals are for stress and emotional suppression, respectively. *p<.10, **p<.01, ***p<.001.

**Table 7. Tests of Moderation of Individual Model Pathways ($N_{L1} = 913$, $N_{L2} = 49$)**

Model		Pseudo R^2	b	SE	p value	95%CI
a.	**Stress → Emotional Suppression**					
i.	Stress		0.04	0.04	.35	[-0.04, 0.11]
ii.	Cultural Orientation		**-0.46****	0.14	.00	[-0.74, -0.19]
iii.	Stress X Cultural Orientation	0.65	-0.02	0.04	.67	[-0.09, 0.06]
i.	Stress		0.08	0.12	.52	[-0.16, 0.32]
ii.	Ethnicity		0.32	0.32	.31	[-0.29, 0.94]
iii.	Stress X Ethnicity	0.65	-0.03	0.08	.71	[-0.18, 0.12]
b.	**Emotional Suppression → Social Support Seeking**	0.55	**-0.26*****	0.05	<.001	[-0.35, -0.17]
c.	**Stress → Social Support Seeking**					
i.	Stress		0.06	0.04	.17	[-0.03, 0.15]
ii.	Cultural Orientation		-0.14	0.12	.24	[-0.37, 0.09]
iii.	Stress X Cultural Orientation	0.50	-0.00	0.04	.96	[-0.09, 0.09]
i.	Stress		**0.28***	0.14	.05	[0.01, 0.55]
ii.	Ethnicity		0.24	0.24	.33	[-0.23, 0.71]
iii.	Stress X Ethnicity	0.50	-0.14	0.09	.10	[-0.31, 0.03]
ab.	**Stress + Emotional Suppression → Social Support Seeking**					
i.	Stress		**0.09***	0.04	.02	[0.02, 0.17]
ii.	Emotional Suppression		**-0.27*****	0.04	<.001	[-0.35, -0.17]
iii.	Cultural Orientation		-0.18	0.11	.13	[-0.41, 0.05]
iv.	Stress X Cultural Orientation	0.59	0.01	0.04	.78	[-0.06, 0.09]
i.	Stress		**0.30***	0.12	.01	[0.07, 0.53]
ii.	Emotional Suppression		**-0.27*****	0.04	<.001	[-0.36, -0.17]
iii.	Ethnicity		0.24	0.24	.32	[-0.22, 0.70]
iv.	Stress X Ethnicity	0.58	**-0.14***	0.07	.07	[-0.28, 0.01]

Note. Stress, emotional suppression, and cultural orientation are standardized. Ethnicity is a dichotomous variable. No moderation of the b path was hypothesized. The table above includes missing data and does not include covariates. *p<.10, **p<.01, ***p<.001.
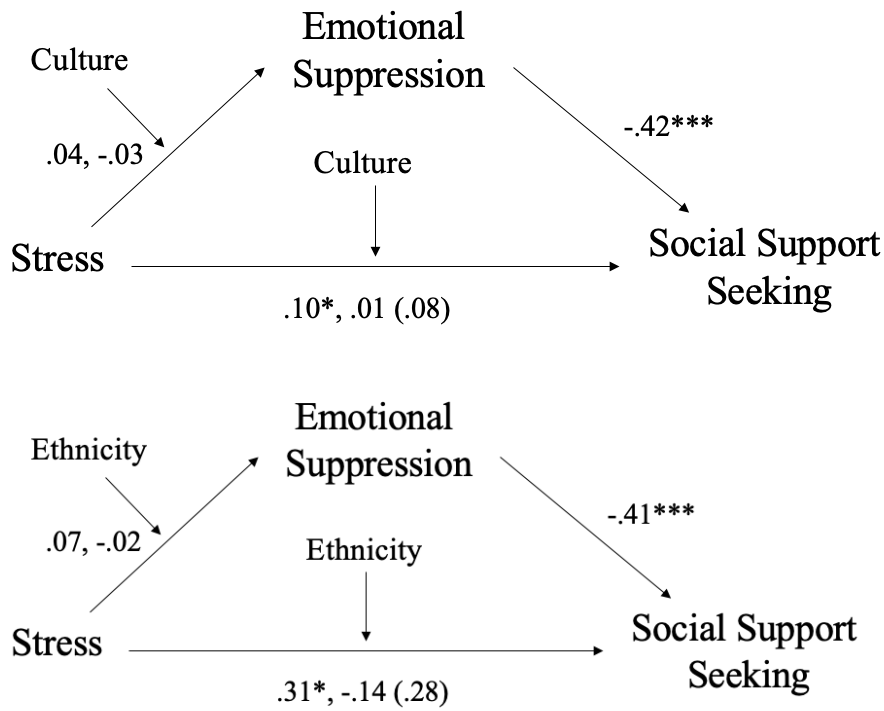
Figure 2.

Mediation Model with Coefficients
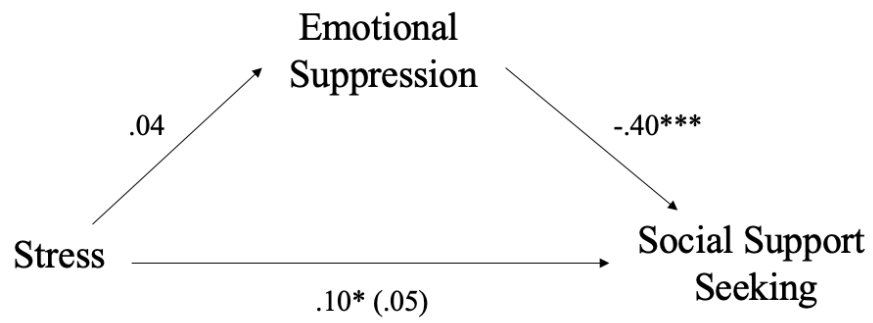
Note. The figure above includes the mediation model with the respective pathway coefficients.

Figure 3.

Moderated Mediation Models with Coefficients

Culture

Emotional
Suppression

-.42***

.04, -.03

Culture

Stress

Social Support
Seeking

.10*, .01 (.08)

Ethnicity

Emotional
Suppression

-.41***

.07, -.02

Ethnicity

Stress

Social Support
Seeking

.31*, -.14 (.28)

Note: The above figures include the moderated mediation models with respective pathway coefficients. Where two coefficients are separated by a comma, the first number indicates the effect of the stress without considering ethnicity/interdependent cultural orientation, and the second number indicates the effect of stress as a function of ethnicity/interdependent cultural orientation.

Figure 4.

The Effects of Stress on Social Support Seeking as a Function of Ethnicity
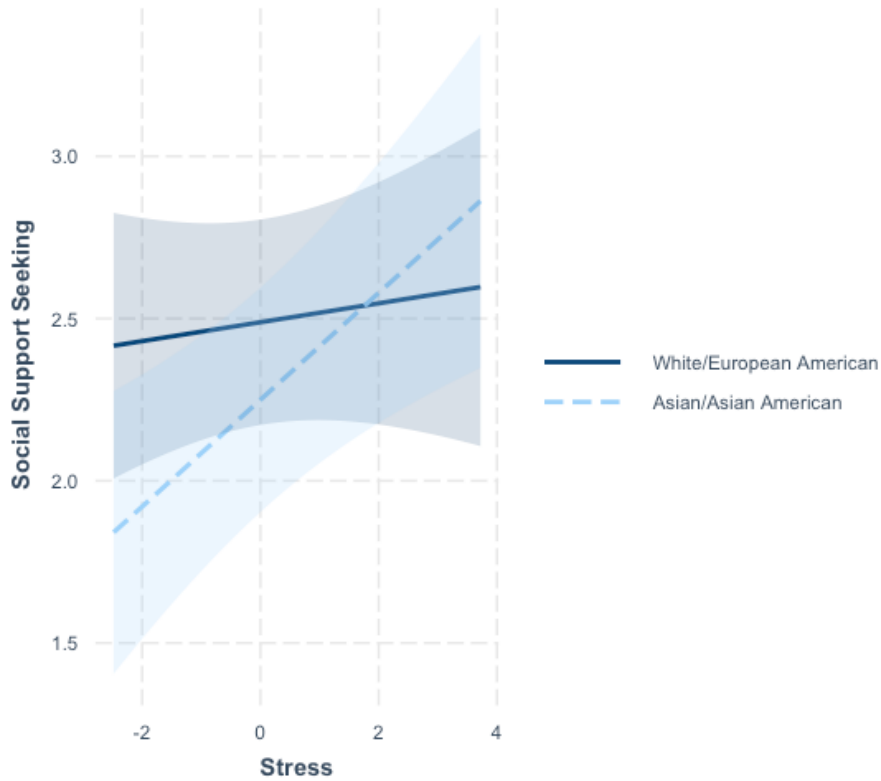
Note. Because the findings of the simultaneously estimated moderated mediation analyses and the separate test of ethnicity as a moderator of the link between stress and social support seeking after accounting for emotional suppression were very similar, the figure above represents estimates derived from the latter model.

Momentary Stress

Daily Entries

Prompt: In daily life, people experience stress and may define that stress in different ways. For this study, we will define "stress" as a feeling when you feel emotionally or physically tense. That tension can come from an event or a thought that makes you feel overwhelmed, anxious, angry, or upset. It may happen when a coworker, friend or family member does something that bother you, either intentionally or unintentionally. Or, it could happen when you feel bogged down by all your schoolwork. When you are stressed, you may feel like you want to talk to others about how stressed you are, or you may feel like you need space from others. Please use this definition of stress when answering this entry. Think about the time since the last entry that you have experienced the most stress.

Please answer the questions below using the following scale: 1 (not at all) to 7 (a great deal).

1. How stressed did you feel since the last entry?
2. How overwhelmed did you feel?
3. How much control did you feel you had in the situation?
4. Were you worried about others' reactions to you?

Last Entry of the Day

Prompt: In daily life, people experience stress and may define that stress in different ways. For this study, we will define "stress" as a feeling when you feel emotionally or physically tense. That tension can come from an event or a thought that makes you feel overwhelmed, anxious, angry, or upset. It may happen when a coworker, friend or family member does something that bother you, either intentionally or unintentionally. Or, it could happen when you feel bogged down by all your schoolwork. When you are stressed, you may feel like you want to talk to others about how stressed you are, or you may feel like you need space from others. Please use this definition of stress when answering this entry. Think about the time since the last entry that you have experienced the most stress.

Please answer the questions below using the following scale: 1 (not at all) to 7 (a great deal).

1. How stressed did you feel since the last entry?
2. How overwhelmed did you feel?
3. How much control did you feel you had in the situation?
4. Were you worried about others' reactions to you?

In the box below, and in no less than three sentences, please describe the stress you have experienced today.

Social Support Seeking

Please report if you have done any of the following since the last entry.

1 (I didn't do this at all) to 7 (I did this very often)

1. I tried to get emotional support from others.

2. I tried to get help and advice from other people.

3. I tried to get comfort and understanding from someone.

4. I tried to get advice or help from other people about what to do.

5. I tried to handle problems on my own.

Emotional Suppression

We would like to ask you some questions about your emotional life, in particular, how you controlled (that is, regulate and manage) your emotions since the last entry. Although some of the following questions may seem similar to one another, they differ in important ways. For each item, please answer using the following scale:

1	*2*	*3*	*4*	*5*	*6*	*7*
strongly disagree			*neutral*			*strongly agree*

1. _____ I kept my emotions to myself.

2. _____ When I felt positive emotions, I was careful not to express them.

3. _____ I controlled my emotions by not expressing them.

4. _____ When I felt negative emotions, I was sure not to express them.

Appendix D

Interdependent Cultural Orientation

Please respond to the items below, on the following scale:

1 (Extremely uncharacteristic of me) to 7 (Extremely characteristic of me)

1. It bothers me when other people neglect my needs.
2. When making a decision, I take other people's needs and feelings into account.
3. I'm not especially sensitive to other people's feelings.
4. I don't consider myself to be a particularly helpful person.
5. I believe people should go out of their way to be helpful.
6. I don't especially enjoy giving others aid.
7. I expect people I know to be responsive to my needs and feelings.
8. I often go out of my way to help another person.
9. I believe it's best not to get involved in taking care of other people's personal needs.
10. I'm not the sort of person who often comes to the aid of others.
11. When I have a need, I turn to others I know for help.
12. When people get emotionally upset, I tend to avoid them.
13. People should keep their troubles to themselves.
14. When I have a need that others ignore, I'm hurt.

Appendix E

Ethnicity

1. *Please fill in the following statement.*
   a. In terms of ethnic group, I consider myself to be ____ .
2. *What is your race? Please select from the drop-down menu.*
   a. [Asian/Pacific Islander, White/European American, Multiracial, Other ethnicity not listed here]

Appendix F

Extraversion

Here are a number of characteristics that may or may not apply to you. For example, do you agree that you are someone who likes to spend time with others? Please write a number next to each statement to indicate the extent to which you agree or disagree with that statement.

Disagree strongly Disagree a little Neither agree nor disagree Agree a little Agree Strongly
1   2   3   4   5

I see Myself as Someone Who...
____1. Is talkative
____2. Is reserved
____3. Is full of energy
____4. Generates a lot of enthusiasm
____5. Tends to be quiet
____6. Has an assertive personality
____7. Is sometimes shy, inhibited
____8. Is outgoing, sociable

Appendix G

Mental Health

Depression and Anxiety

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

0 Did not apply to me at all
1 Applied to me to some degree, or some of the time
2 Applied to me to a considerable degree or a good part of time
3 Applied to me very much or most of the time

1. I was aware of dryness of my mouth.
2. I couldn't seem to experience any positive feeling at all.
3. I experienced breathing difficulty (e.g. excessively rapid breathing, breathlessness in the absence of physical exertion).
4. I found it difficult to work up the initiative to do things.
5. I experienced trembling (e.g. in the hands).
6. I was worried about situations in which I might panic and make a fool of myself.
7. I felt that I had nothing to look forward to.
8. I felt down-hearted and blue.
9. I felt I was close to panic.
10. I was unable to become enthusiastic about anything.
11. I felt I wasn't worth much as a person.
12. I was aware of the action of my heart in the absence of physical exertion (e.g. sense of heart rate increase, heart missing a beat).
13. I felt scared without any good reason.
14. I felt that life was meaningless.

Loneliness

Indicate how often each of the statements below is descriptive of you. Scale of 0 (never) to 3 (always)

1. How often do you feel left out?
2. How often do you feel isolated from others?
3. How often do you feel that you lack companionship?

Negative Affect

Please indicate the extent you feel this emotion RIGHT NOW. 1 (not at all) to 7 (extremely).

1. Ashamed
2. Afraid
3. Sad