

Emotion Regulation and Culture: The Case of Substance Use

by

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## **DEDICATION**

This work is dedicated to my husband, my parents, my dog, and my two rats, without whom my sanity surely would have been lost.

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## TABLE OF CONTENTS

<b>DEDICATION .....</b>	<b>ii</b>
<b>ACKNOWLEDGEMENTS .....</b>	<b>iii</b>
<b>LIST OF TABLES .....</b>	<b>vii</b>
<b>LIST OF FIGURES .....</b>	<b>viii</b>
<b>ABSTRACT .....</b>	<b>ix</b>
<b>1. Introduction.....</b>	<b>1</b>
1.1    Emotion regulation.....	1
1.2    Culture and emotion regulation .....	4
1.3    Substance use as an emotion regulation strategy .....	6
1.3.1    Alcohol expectancies .....	8
1.3.2    Motivational model of substance use.....	9
1.3.3    Combining expectancies, the motivational model, and culture .....	11
1.4    Specific aims.....	15
<b>2. Alcohol Use and Social Anxiety in Asian Americans.....</b>	<b>17</b>
2.1    Abstract.....	17
2.2    Introduction.....	19
2.2.1    Sub-threshold social anxiety and alcohol use .....	19
2.2.2    Asian Americans and alcohol .....	20
2.3    Methods.....	23
2.3.1    Data and participants.....	23
2.3.2    Measures .....	23
2.3.3    Analyses.....	24
2.4    Results.....	25
2.4.1    Demographics .....	25
2.4.2    Drinks per week .....	26

2.4.3	Alcohol use disorders.....	27
2.5	Discussion.....	31
2.5.1	Limitations and Future Directions .....	32
<b>3.</b>	<b>Psychosocial Correlates of Substance Use in the Unemployed with Social Anxiety.....</b>	<b>34</b>
3.1	Abstract.....	34
3.2	Introduction.....	36
3.2.1	Work-Related Cognitive Behavioral Therapy (WCBT).....	37
3.3	Methods.....	38
3.3.1	Data.....	38
3.3.2	Measures .....	38
3.3.3	Analyses.....	39
3.4	Results.....	41
3.4.1	Demographics and rates of substance use.....	41
3.4.2	ASSIST global risk score.....	42
3.4.3	Tobacco.....	42
3.4.4	Alcohol.....	42
3.4.5	Cannabis.....	43
3.5	Discussion.....	45
<b>4.</b>	<b>Stressors and Emotion regulation Strategies for International Students in Japan During the COVID-19 Pandemic.....</b>	<b>48</b>
4.1	Abstract.....	48
4.2	Introduction.....	50
4.2.1	International student mental health.....	50
4.2.2	International students in Japan.....	52
4.2.2.1	Educational institutions that accept international students .....	53
4.2.2.2	The effect of the COVID-19 pandemic .....	54
4.2.3	Aims.....	55
4.3	Methods.....	56
4.3.1	Sample.....	57
4.3.2	Data collection .....	57

4.3.3	Data analysis .....	58
4.4	Results.....	61
4.4.1	Causes of stress .....	62
4.4.1.1	Feeling stuck.....	62
4.4.1.2	Running out.....	66
4.4.1.3	Isolation and loneliness.....	68
4.4.1.4	No stress.....	71
4.4.2	Emotion regulation strategies .....	72
4.4.2.1	Problem solving strategies .....	72
4.4.2.2	Emotion focused strategies .....	73
4.4.2.3	Social strategies .....	76
4.5	Discussion.....	80
4.5.1	Implications.....	82
4.5.2	Limitations and future directions .....	83
<b>5.</b>	<b>Conclusion .....</b>	<b>85</b>
5.1	Overall discussion.....	85
5.1.1	Implications.....	86
5.1.2	Limitations .....	89
5.1.3	Future directions .....	90
5.1.4	Conclusion .....	92
<b>References.....</b>		<b>93</b>

## LIST OF TABLES

Table 1.1 Commonly studied emotion regulation strategies (adapted from Gross, 2015) .....	2
Table 2.1 Population demographic characteristics, social anxiety (SAD and sub-threshold), and alcohol use (AUDs and drinking frequency) by race.....	25
Table 2.2 Weighted Poisson regression analysis predicting number of drinks consumed per week .....	26
Table 2.3 Weighted logistic regression analysis predicting odds of having an AUD .....	28
Table 2.4 Adjusted predictions of number of drinks per week / odds of AUD .....	30
Table 3.1 Percentage of participants falling into each ASSIST risk category per substance .....	41
Table 3.2 Results of multinomial logistic regression analyses on correlates of ASSIST substance use risk categories .....	44
Table 4.1 Sample characteristics (n = 16).....	61



## LIST OF FIGURES

Figure 1.1 The Process Model of Emotion Regulation (adapted from Gross, 2015) .....	2
Figure 1.2 Motivations for alcohol use by valence and source of effect (adapted from Kuntsche et al., 2015) .....	11
Figure 2.1 Predicted number of drinks per week by race and social anxiety level.....	27
Figure 2.2 Predicted probability of having an AUD by race and social anxiety level .....	30
Figure 4.1 Causes of stress for international students in Japan during COVID-19.....	62
Figure 4.2 Emotion regulation strategies used by international students in Japan during COVID-19.....	72

## ABSTRACT

People often engage in substance use with the objective of regulating their emotions – either heightening positive feelings, or dampening negative ones. Due to this behavior’s negative impact on health, including the possibility of developing a Substance Use Disorder (SUD), substance use is largely considered a maladaptive emotion regulation strategy (Sher & Grekin, 2007). However, recent work on emotion regulation suggests that the adaptiveness of a given strategy is actually not universal, but highly dependent on specific characteristics of the individual and situation (Aldao, Sheppes, & Gross, 2015). These individual and situational factors have not yet been fully considered in the case of substance use. One such factor that is of particular note in the case of substance use is culture, which influences many aspects of the behavior, including the availability of various substances and common contexts for their use. In Chapter 1, we give an overview of existing work on the role of culture within theories of substance use as a emotion regulation strategy. In Chapter 2, we examine data from an epidemiological survey on psychiatric conditions, and find that there may be differences in the relationship between social anxiety levels and alcohol use between Asian Americans and non-Hispanic White Americans. We discuss how this may relate to cultural differences in the association between drinking and socializing. In Chapter 3, we analyze risk factors for substance use in a sample of unemployed individuals with Social Anxiety Disorder, and find that race and ethnicity is one factor associated with riskier substance use, but that this varies considerably

depending on the substance in question. In Chapter 4, we present results from an interview study of international students living in Japan during the COVID-19 pandemic, which revealed that participants had a generally negative view of solitary substance use, but expressed a desire to engage in social substance use for emotion regulation purposes. In Chapter 5, we explore the overall implications of this work on our understanding of substance use as an emotion regulation strategy across cultures.

## CHAPTER 1

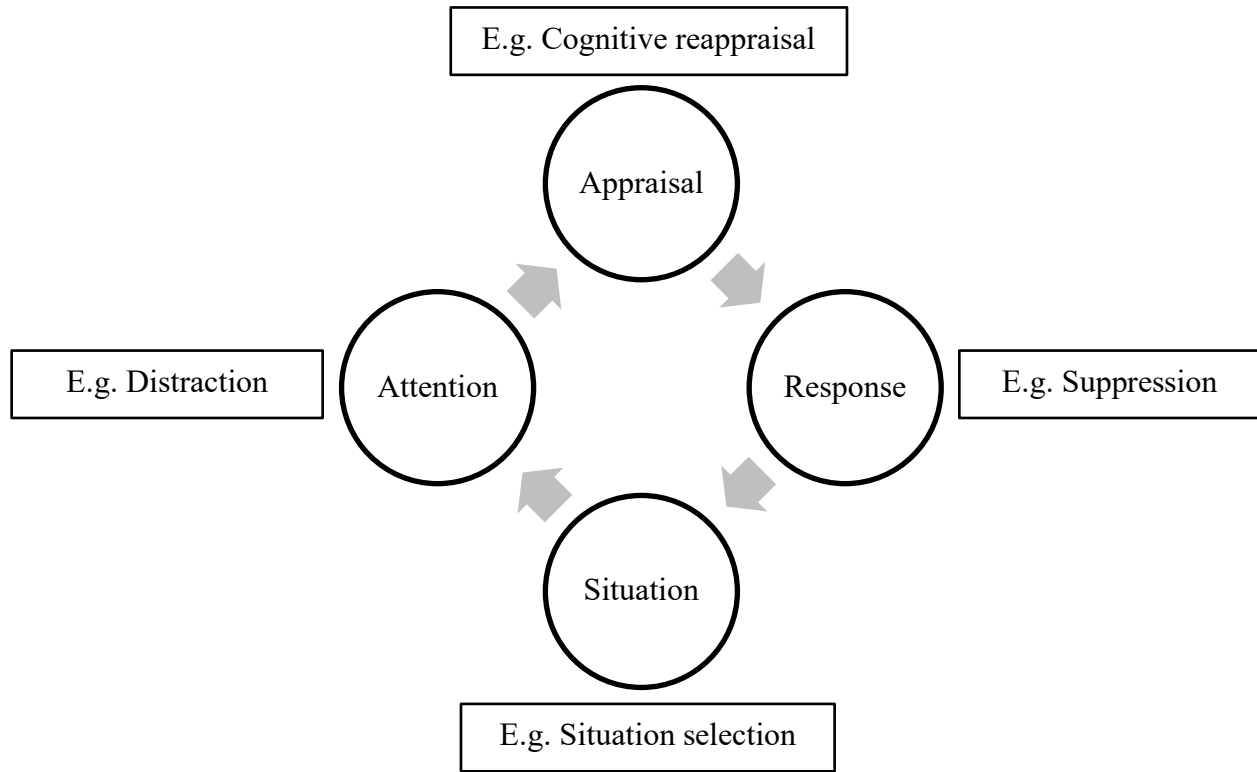
### Introduction

#### 1.1 Emotion regulation

Emotion regulation refers to the act of purposefully “up- or down-regulat[ing] either the magnitude or duration of [an] emotional response” (Gross, 2013). In many cases, people use strategies in order to dampen unwanted negative emotions, such as anxiety and depression. To achieve this goal, they might use the emotion regulation strategy of *distraction* by watching a movie, thus taking their mind off their distress. Psychologists have catalogued many commonly used emotion regulation strategies according to a variety of taxonomies, one being Gross’ Process Model of Emotion Regulation, which categorizes strategies depending on which stage in the cyclical emotion-generative process it occurs (Gross, 1998a): (1) An individual is in a given *situation* (which includes internal states as well as external circumstances), (2) *attention* is focused on an aspect of the situation, (3) the individual mentally *appraises* this aspect, (4) then *responds* to it, thus changing the situation, and the cycle repeats. A simplified version of the Process Model with strategies that fit into each stage is shown in Figure 1.1, and descriptions and examples of these strategies are given in Table 1.1.

**Figure 1.1**

*The Process Model of Emotion Regulation (adapted from Gross, 2015)*



**Table 1.1**

*Commonly studied emotion regulation strategies (adapted from Gross, 2015)*

<b>Strategy</b>	<b>Description and example</b>
Situation selection	Taking actions to increase chances of being in a situation favorable to one's desired emotional state <i>Example:</i> Avoiding an unpleasant task
Distraction	Redirecting attention within or away from the current situation <i>Example:</i> Watching a movie with friends
Cognitive reappraisal	Modifying appraisal of a situation to change its emotional impact <i>Example:</i> Thinking about the positives rather than the negatives
Suppression	Inhibiting one's expression or experience of emotions <i>Example:</i> Not showing any emotions in one's facial expression

Researchers have extensively studied which strategies for managing emotion tend to be adaptive versus maladaptive, in part for the purposes of developing and tailoring interventions for mental health and psychological wellbeing. A strategy's adaptiveness can refer to its effectiveness in regulating the emotion in question, and/or whatever outcomes arise from its repeated use. For example, early research on emotion regulation suggested that cognitive reappraisal is generally more effective at dampening negative emotions than simply suppressing them, and regular use of the former is affiliated with better cognitive and social consequences (Gross, 2002).

One common emotion regulation strategy that is generally thought to be maladaptive is the use of psychoactive substances such as alcohol, tobacco, illicit drugs, and prescription medications. Psychoactive substances can be used at the *response* stage of the Process Model to stifle negative emotions such as depression, and enhance positive ones, like sociability (Cooper et al., 1995). They can also be used at the *attention* stage in order to draw focus away from a distressing situation.

Risky substance use is linked to a host of negative physical, mental, and societal consequences, ranging in severity from hangovers to death by overdose. These negative outcomes can occur even when the user does not meet diagnostic criteria for a substance use disorder. Further, using substances for reasons related to emotion is associated with negative outcomes even more so than using substances for other purposes (Sher & Grekin, 2007). Despite these clear drawbacks to substance use, however, it may be premature to conclude that it is thus a universally maladaptive emotion regulation strategy.

## 1.2 Culture and emotion regulation

More recent work has revealed that the picture is much more complicated than emotion regulation strategies simply being either adaptive and maladaptive. Rather, there is an interplay between strategy, situation, and person, such that the most adaptive approach to emotion regulation is flexibly switching between strategies that are appropriate for that individual, depending on the specific context (Aldao, Sheppes, & Gross, 2015). For example, although cognitive reappraisal is considered a generally healthy form of emotion regulation, it is not necessarily the best choice of strategy when one has a higher degree of control over the stress-inducing situation, making it unnecessary to change one's thinking about it (Troy, Shallcross, & Mauss, 2013). In fact, it may even be considered a poor strategy if it prevents the individual from taking beneficial actions to resolve a problem directly.

Culture is one significant variable that influences strategy effectiveness. The word "culture" here is used to indicate meaningful "patterns of ideas, practices, institutions, products, and artifacts" within a shared context, such as place of origin, a hobby, or a religion (Markus & Kitayama, 2010). However, it is most often used in relation to beliefs and behaviors shared by nations or ethnic groups. For example, much cross-cultural research has broadly compared "Western" countries, such as the United States and the United Kingdom, against "Eastern" countries, such as Japan and China. While this research has found many shared psychological tendencies around the world, it has also found interesting variations in what one may assume are universal processes, such as emotion.

For instance, in their research on what different cultures consider to be "ideal" emotional states, Tsai and colleagues found that people from Western cultures tend to value high-intensity

positive emotions, like joy, whereas those from Eastern cultures tend to value low-intensity positive emotions, like tranquility (Tsai & Clobert, 2019). One possibility raised by this finding is that generally, Easterners and Westerners have different end-goals in mind when engaging in emotion regulation to begin with.

If the desired emotional end-goals are different, there is also much variation in what are considered the most effective strategies used to reach them. Indeed, research comparing non-Hispanic White Americans and Asian Americans found that the negative effects of emotional suppression were reduced for the latter group (Butler, Lee, & Gross, 2007). This may be due to the fact that being unexpressive is more common and acceptable in several Asian cultures, whereas it may be perceived it as an expression of hostility in some Western cultures. Note that in this study and several others, comparisons were made across races (or ethnicities) rather than across nationalities, under the assumption that the differences (e.g. between East Asians and non-Hispanic White Americans) would be, for most part, retained even when examining racial/ethnic groups within a single country.

Little work so far, however, has examined cultural differences in the use of substances to regulate emotion, even though practices relating to substance use itself, independent of emotion regulation motives, vary heavily by culture. On the most fundamental level, there is a distinction to be made between “wet” and “dry” countries, at least in the case of alcohol. In “wet” countries, such as many countries in the Mediterranean, access to alcohol is easy and it is incorporated into many aspects of daily life, whereas “dry” countries are those where alcohol is banned, like many Islamic countries, or where abstinence is relatively common (Bloomfield et al., 2003). There is also wide cultural variation in the social acceptability of substances. For example, marijuana is



becoming increasingly acceptable to use medically and recreationally in the United States, making it a more viable means of emotion regulation, whereas it remains illicit and heavily stigmatized in other countries (Pacula & Smart, 2017). Clearly, the legal availability and social acceptability of a substance would impact people's decision to use it as an emotion regulation tool.

Given these cultural differences in the base rates of substance use as well as the norms and customs surrounding them, it would be unsurprising if there were differences in how people from different cultures engage in substance use specifically with the motive of regulating emotion. To determine if this is the case, it is first necessary to understand the psychological processes by which substance use acts as an emotion regulation strategy more generally.

### **1.3 Substance use as an emotion regulation strategy**

Although any psychoactive substance can be used to regulate emotion, this section will focus on alcohol due to its ubiquity and potential for harm – alcohol use is currently the cause of 5.3% of all deaths worldwide, and responsible for 5.1% of the global burden of disease and injury (World Health Organization, 2022). As with other substances, alcohol use is generally considered an unhealthy emotion regulation strategy. To this point, habitual alcohol use as an emotion regulation strategy is linked with greater incidence of adverse consequences, such as physical injuries and academic problems (Wicki et al., 2017). There is also evidence for long-term effects, such as neuropharmacological changes that lead to greater anxiety and depression (Sher & Grekin, 2007). Further, the use of alcohol to regulate emotion implies that other, possibly more adaptive strategies are being neglected. For example, if someone attempts to deal with the emotional turmoil from an interpersonal conflict by drinking, this may mean that they

are not taking the opportunity to better resolve the issue with internal reflection and communication. There is indeed an association between alcohol use and having trouble with emotion regulation, suggesting that drinking is being used as an alternative to other strategies (Dvorak et al., 2014).

Several theories have been proposed to explain why and how alcohol use is selected as a method of regulating emotions. Notably, *tension reduction theory* states that alcohol use is a reinforced behavior that people seek in order to diminish negative emotions like anxiety, i.e. reduce emotional tension (Greeley & Oei, 1999). In other words, alcohol is used as an emotion regulation strategy because people can reliably attain certain effects on their mood by drinking. Similarly, the *self-medication hypothesis* suggests that individuals use substances to reduce psychological distress because of the substance's specific psychopharmacological effects – for example, someone with anxiety might wish to take advantage of alcohol's sedative effects (Khantzian, 1997).

Although the concept of reinforcement and substances' pharmacological effects are not to be ignored, there are limitations to these theories that focus on the immediate physiological effects of drinking. First, they are geared towards situations in which alcohol is used to down-regulate negative emotions, even though it is known that it is used to up-regulate positive ones as well - for example, to induce feelings of sociability. Second, laboratory studies show that the pharmacological effect of alcohol alone is insufficient to explain its effects on emotion. Specifically, in multiple experiments in which participants consume either an alcoholic or placebo drink before engaging in an anxiety-provoking task, placebo drinks have been found to have anxiety-reducing effects, regardless of the absence of any pharmacological effects (e.g.

Himle et al., 1999; see Battista, Stewart, & Ham, 2010 for review). The fact that a non-alcoholic drink can induce reductions in anxiety suggests that the *belief* that one is consuming alcohol contributes significantly to its psychological effects.

In contrast, the theory of *alcohol expectancies* proposes that the psychological impact of alcohol consumption is partially dependent on what the individual expects its effects to be (Brown, Christiansen, & Gold, 1987). Expectancies, and the *motivational model of alcohol use* (Cox & Klinger, 1988), together provide a more complete explanation of the ways in which alcohol is used to regulate emotion.

### **1.3.1 Alcohol expectancies**

Alcohol expectancies refer to an individual's beliefs regarding the effects of alcohol consumption, ranging from immediate physiological, cognitive, or emotional changes to more downstream consequences. These expectancies can be positive – such as the belief that alcohol consumption increases sociability – or negative – such as the belief that alcohol consumption will result in headaches and nausea. Expectancies are known to significantly impact drinking behavior. For instance, as one might expect, having positive expectancies regarding alcohol use is associated with more drinking: A longitudinal study found that those with more positive alcohol expectancies at age 16 reported more alcohol use, a greater increase in alcohol use over time, and a greater likelihood of experiencing alcohol-related problems later on (Patrick et al., 2010). Based on the widely used Alcohol Expectancies Questionnaire (Brown, Christiansen, & Gold, 1988), alcohol expectancies for adults can be categorized into six types: global positive changes, sexual enhancement, physical/social pleasure, increased social assertiveness, tension reduction, and arousal/aggression.

### 1.3.2 Motivational model of substance use

The *motivational model of alcohol use* posits that the most proximate predictors of alcohol use are the individual's underlying motives for drinking, or "drinking motives" (Cox & Klinger, 1988). According to this framework, alcohol use is goal-driven; for the most part, people drink in order to fulfill specific needs or desires (Cooper et al., 1995). Fulfilling these goals is linked to concurrent or subsequent up-regulation of positive affect, or down-regulation of negative affect. For example, a student at a party may drink to relieve their social anxiety (down-regulation of negative affect), which may then lead them to socialize effectively and make more friends (up-regulation of positive affect). These decisions are not necessarily made consciously, and are embedded in various environmental, historical, and psychological antecedents (Kuntsche et al., 2005; Ostafin & Brooks, 2011). Alcohol expectancies are one part of these antecedents, i.e. an individual's expectancies is one of the factors that make up the decision to use alcohol in a certain situation.

Drinking motives may be categorized based on two dimensions: the valence of the expected effect (enhancement of positive affect or reduction of negative affect), and the source of the outcome (internal or external; Hasking, Lyvers, & Carliopo, 2011). As displayed below in Figure 1.2, the resulting four categories of motives are: enhancement (positive/internal, e.g. "feeling good"), social (positive/external, e.g. "making friends"), coping (negative/internal, e.g. "reducing depression"), and conformity (negative/external, e.g. "wanting to fit in"). More recently, scholars have suggested that these motives could be broken down even further, such as by distinguishing between coping with anxiety and coping with depression (Mezquita et al.,

2015). These distinctions enable the motivational model to more precisely predict outcomes based on the specific motivations behind drinking.

Studies show that these drinking motives are each associated with different outcomes. On the whole, having more drinking motives, regardless of type, is linked with more drinking and more alcohol-related problems, possibly because having more drinking motives means that there are more situations in which alcohol would be sought to fulfill a specific goal (Mezquita et al., 2015). More specifically, both enhancement and coping motives are linked with greater incidence of alcohol-related problems, although enhancement motives are thought to indirectly lead to these problems via increased drinking, rather than as a result of the motives themselves (Stewart & Devine, 2000). These “alcohol-related problems” also vary in nature depending on the motive involved. It has been found that coping motives are more likely to lead to academic problems and risky sexual behavior, whereas enhancement motives have been linked with violence (Kuntsche & Kuntsche, 2009). As with the case for alcohol expectancies, this work suggests that individual and situational factors, such as motives and beliefs, play large roles in determining the impact of drinking far beyond the effect of the substance in and of itself.

**Figure 1.2**

*Motivations for alcohol use by valence and source of effect (adapted from Kuntsche et al., 2015)*

		<u>Source of effect</u>	
		<b>Internal</b>	<b>External</b>
<u>Valence of effect</u>	<b>Positive</b>	Enhancement	Social
	<b>Negative</b>	Coping	Conformity

### **1.3.3 Combining expectancies, the motivational model, and culture**

Although alcohol expectancies and drinking motives seem similar, and are related in the sense that alcohol expectancies are one of the antecedents to drinking motives, they are differentiated by the fact that expectancies are beliefs which may not *necessarily* lead to alcohol consumption (e.g. they may end up choosing other strategies for emotion regulation), whereas motives are directly linked to the decision to drink (Cooper et al., 2016). Early studies showed that drinking motives predict alcohol use, risky drinking, and alcohol-related problems above and beyond alcohol expectancies (Cronin, 1997). However, this is not to say that expectancies are irrelevant to understanding drinking behavior, as expectancies are a necessary precursor to the formation of a drinking motive, while motives are not necessary for expectancies to exist (Cooper et al., 1995). In addition, drinking motives only overlap with positive expectancies, as negative alcohol expectancies would not lead to a motivation to drink (Cooper et al., 2016). As such, the theory of alcohol expectancies provides a way to understand why individuals may choose abstinence, a question that the motivational model fails to address.

Research has demonstrated that there may be some cultural differences in both expectancies and motives. While work that directly compares alcohol expectancies across cultures remains limited, existing research supports the idea of a cultural influence on the nature of the expectancies held, as well as the extent to which they are believed. For example, white Australians were found to have a stronger belief in alcohol's tension-relieving effects than Asian Australians (Oei & Jardim, 2007). In addition, when using the same measure of expectancies across groups, Asian Americans tended to have fewer positive *and* negative expectancies than white Americans (Han & Short, 2009). People of Asian descent living in Western countries generally seem to have fewer and weaker expectancies regarding alcohol compared to their white counterparts, which is consistent with their lower use of alcohol. This is also consistent with the fact that East Asians have a high incidence of specific gene variants that heighten unpleasant physical reactions to alcohol, which naturally leads to more avoidance of alcohol and a more negative perception of its expected effects (McCarthy et al., 2000). Indeed, women with these gene variants have been found to have lower expectations of alcohol's tension reduction effects, and men with these gene variants have been found to have higher expectations of cognitive/behavioral impairments (McCarthy et al., 2000). However, these findings should be taken into consideration with the fact that many Asian countries have thriving drinking cultures, demonstrating that generalizations cannot easily be made across all Asian sub-populations.

A handful of studies have examined the possibility that expectancies are altogether different, in both content and factor structure, across cultures. Lo and Globetti (2000) discovered via interviews that the expected consequences of drinking for high school students in Hong Kong included "feeling like an adult," "enhancing family relationships," "and "irresponsibility," none of which fit neatly into the established six categories of alcohol expectancies discovered in the

West. Although there is also some overlap – for example, people around the world appear to agree that alcohol can cause negative physical outcomes – this study suggests that certain expectancies may be more salient in some cultures compared to others, or are conceptualized somewhat differently. To this end, a group of researchers studying high school students in northern China developed a version of the Alcohol Expectancies Questionnaire specifically for Chinese adolescents, using a bottom-up qualitative approach to capture their unique perspective (Shell, Newman, & Qu, 2009). Similarly, they found some overlap with the existing scale, but also unique expectancy categories such as “harm to reputation” and “social facilitation” (Shell, Newman, & Qu, 2009). These findings imply that in East Asian cultures, there may be more focus on specific ways in which alcohol impacts social interaction.

Cultural similarities and differences have also been found in drinking motives. Multiple studies show that the four-factor structure of drinking motives remains constant in several countries across the globe, including Mexico, Brazil, Switzerland, and Hungary (Wicki et al., 2017). A notable outlier was discovered in a qualitative study conducted with Aboriginal Canadian youth, which revealed that individuals in the tribe did not hold social motives for drinking alcohol (Mushquash et al., 2008). In addition, drinkers from southern European countries (e.g. Spain) also have unique motives surrounding the taste of alcohol and how it pairs with food (Kuntsche et al., 2006). Therefore, although there is evidence for significant overlap in drinking motives across cultures, some motives may be more or less common in certain cultures, and there may even be some motives that are culturally specific.

The rank order of motive prevalence is similar across countries: social motives are the most common, followed by enhancement, coping, and finally conformity (Kuntsche, Stewart, &



Cooper, 2008). However, there are differences in how frequently each drinking motive is endorsed. A study comparing drinking motives in 10 countries suggested that those that are more “individualist” (i.e. emphasize individuality and autonomy) tend to endorse social and enhancement motives more (Mackinnon et al., 2017). However, in Nigeria (a country considered “collectivist,” or more concerned with the goals of the group), college students endorsed social motives more than American students, which contradicts Mackinnon and colleagues’ findings (Gire, 2002). Even within Western countries, Canadian and Northern European participants have been found to endorse all motives more than Spanish and Southern European participants, suggesting that there are dimensions of culture shaping drinking motives beyond simply individualism-collectivism (Kuntsche et al., 2015; Mezquita et al., 2015).

Finally, there are some cultural similarities and variations in the association between drinking motives and the outcomes of alcohol use. Again, much work has found more commonalities than differences - Wicki and colleagues (2017), examining 10 European countries, found that social, enhancement, and coping motives were associated with higher alcohol use in all countries, which was then associated with greater frequency of consequences such as injuries. Interestingly, they found that having conformity motives led to less alcohol use, but was also associated with more negative consequences, demonstrating that less frequent use can still be harmful (Wicki et al., 2017). Likewise, social and enhancement motives predicted greater drinking frequency and quantity in both Canadian and Spanish participants (Mezquita et al., 2015). Kuntsche, Stewart, and Cooper (2008) also found that enhancement and coping motives were related to more alcohol use and risky drinking across the US, Canada, and Switzerland. They found that conformity motives were negatively associated with drinking for the Swiss, enhancement motives were positively associated with drinking for Canadians and the

Swiss, and conformity motives were linked to more alcohol-related problems in the US (Kuntsche, Stewart, & Cooper, 2008). Overall, it appears that social, enhancement, and coping motives are more straightforwardly linked to greater alcohol use and alcohol-related problems, but the picture is somewhat more complicated for the conformity motive.

#### **1.4 Specific aims**

In summary, while the similarities may seem to overshadow the differences, there still appear to be cultural differences in both expectancies and motives for substance use, and differences in the outcomes associated with those expectations/motives. However, considering the vast cultural variations in substance use (as well as emotion regulation), there is much more room to explore. To this end, the following three studies examine the topic of substance use, emotion regulation, and culture across a range of target populations.

1. Chapter 2: Alcohol use and social anxiety in Asian Americans. This chapter consists of an analysis of epidemiological psychiatric data, comparing the association between social anxiety and alcohol use in Asian Americans versus non-Hispanic White Americans in order to test the hypothesis that Asian Americans are more likely to use alcohol in response to social anxiety.
2. Chapter 3: Psychosocial correlates of risky substance use in the unemployed with social anxiety. This chapter uses data from a randomized controlled trial of a combined vocational and social anxiety intervention to investigate the correlates of risky substance use in this population, including race/ethnicity.

3. Chapter 4: Stressors and emotion regulation strategies for international students in Japan during the COVID-19 pandemic. This chapter consist of a qualitative interview study of international students living in Japan during the pandemic to identify their primary stressors and the emotion regulation strategies they used, including substance use.

## CHAPTER 2

### Alcohol Use and Social Anxiety in Asian Americans

Sakura Takahashi, Addie Weaver, Jennifer M. Jester, & Joseph A. Himle

#### 2.1 Abstract

Social anxiety disorder (SAD) is associated with greater alcohol use, partly due to the expectation that drinking reduces anxiety. However, little work has examined the relationship between social anxiety and alcohol use by race/ethnicity or culture, despite the fact that expectations surrounding alcohol use vary greatly across such groupings. In light of the social nature of drinking in many Asian cultures, the present study investigates the relationship between social anxiety and alcohol use at both clinical and sub-threshold levels among Asian Americans and non-Hispanic White Americans. Data from Asian American ( $n = 2,284$ ) and non-Hispanic White American ( $n = 7,587$ ) adults were obtained from the Collaborative Psychiatric Epidemiological Studies (CPES). Poisson regression and logistic regression were used to examine the relationship between race and social anxiety on the number of drinks consumed per week and the odds of having an alcohol use disorder (AUD), respectively. Analyses revealed a moderation effect for social anxiety and race such that while Asian Americans without social anxiety drank less than non-Hispanic White Americans without social anxiety, this is not true at

the sub-threshold social anxiety level (for number of drinks per week) or at the SAD level (for probability of an AUD). This suggests that socially anxious Asian Americans may benefit from preventative interventions to develop healthy coping mechanisms for social anxiety in order to reduce problem drinking. Future research using more nuanced measures of social anxiety and alcohol use, examining cultural alcohol expectancies, and considering potential subgroup differences within the Asian American population is warranted.

## **2.2 Introduction**

While problems can occur with the use of any psychoactive substance, one of the most ubiquitous uses of substances for emotion regulation purposes is the use of alcohol to deal with social anxiety. Alcohol use disorders (AUDs) are highly comorbid with social anxiety disorder (SAD), which is linked with a 70% higher chance of having an AUD (Grant et al., 2005). This is thought to be in part due to the commonly held belief of alcohol being a form of “liquid courage” that can alleviate anxiety and improve sociability (Tran, Haaga, & Chambless, 1997).

Despite the strong link between SAD and AUDs, an association between social anxiety and alcohol use has not been consistently found in participants who do not meet the diagnostic threshold for social anxiety disorder or an alcohol use disorder (AUD; Schry & White, 2013). There has also been little exploration of how the practice of using alcohol to ameliorate social fears may vary among cultural groups (e.g. Santesso, Schmidt, & Fox, 2004).

### **2.2.1 Sub-threshold social anxiety and alcohol use**

To distinguish between clinical and non-clinical conditions, the experience of social anxiety at levels below the diagnostic criteria for SAD will be henceforth referred to as *sub-threshold* social anxiety. Likewise, alcohol use that does not reach diagnostic thresholds will be referred to as *sub-threshold* alcohol use or drinking. On the other hand, clinically diagnosable social anxiety disorder and alcohol use disorders will be referred to as SAD (Social Anxiety Disorder) and AUDs (Alcohol Use Disorders) respectively.

There are multiple reasons why examining sub-threshold conditions is critical (e.g. Bruch et al., 1992). First, they can themselves be impairing (Room, Babor & Rehm, 2005; Fehm et al.,

2008). For example, an individual with sub-threshold substance use issues may still partake in risky activities like binge drinking. Second, sub-threshold symptoms can be precursors to clinical disorders, and as such, understanding the relationship between sub-threshold social anxiety and alcohol use can aid development of early prevention strategies for SAD and AUDs. Finally, definitions of problematic social anxiety and drinking likely vary across cultures. Given the culture-bound nature of existing diagnostic systems, expanding our research to include sub-threshold social anxiety and drinking will include people experiencing problematic social anxiety and drinking even if they do not reach full diagnostic criteria.

### **2.2.2 Asian Americans and alcohol**

The importance of sub-threshold conditions notwithstanding, it is also necessary to examine the relationship between social anxiety and drinking across diverse racial/ethnic and cultural groups. According to the theory of alcohol expectancies, people's drinking behavior appears to be more strongly linked to their psychological expectations of how alcohol will affect them, rather than its actual physiological effects (Brown, Christiansen, & Gold, 1987). Generally speaking, it is known that there are some differences in expectancies across groups – for example, people from East Asian countries seem to have some unique expectancies concerning how alcohol impacts socializing, such as “toasting shows respect” and “a person drinking a large amount is admired” (e.g. Shell, Newman, & Qu, 2009). Considering many aspects of culture are retained by immigrant populations in the US, there are thus likely to be some racial/ethnic differences in how people from different backgrounds associate drinking with social anxiety.

Despite Asian Americans being considered a low-risk group with regard to alcohol use, such generalizations obscure potentially higher-risk subgroups within this population (Iwamoto

et al., 2016b). Rates of drinking (62.5%), high-risk drinking (7.2%), and alcohol use disorder (8.0%) are all lower in the overall Asian American population than other racial groups (Grant et al., 2015). The perception of Asian Americans as a low-risk group is exacerbated by the stereotype that they are a “model minority” population, with better health outcomes than other minority groups (Iwamoto et al., 2016b). However, Asian American college men use substances at or above national average for college men (Liu & Iwamoto, 2007). Furthermore, Asian Americans as a demographic are extremely heterogeneous and quickly changing, being the fastest growing immigrant group and consisting of over 20 ethnicities (López, Ruiz, & Patten, 2017). Asian Americans have experienced the largest change in proportion of drinkers (a 29.1% increase between 2002 and 2013) than any other race (Grant et al., 2015). Furthermore, Asian Americans are known to use mental health services less than other groups, which may put them at greater risk if they do indeed engage in harmful drinking (Le Meyer et al., 2009). Therefore, sub-threshold alcohol use among Asian Americans warrants further study.

Likewise, social anxiety problems may be overlooked in Asian Americans. Despite diagnosed SAD being less common in this population, social psychological research suggests that social anxiety *symptoms* are more common in Asian Americans (e.g. Krieg & Yu, 2015). Such findings suggest limitations to existing diagnostic systems to capture subtle cultural differences in disorder presentation. For example, a Japanese variant of social anxiety called *taijin kyofusho*, which emphasizes potential discomfort for others rather than the self, is not included in American diagnostic systems (Hofmann, Asnaani, & Hinton, 2010).

Investigating the link between social anxiety and drinking across levels of severity and across racial/ethnic groups is a step towards understanding this relationship conceptually, and for



developing more effective methods of identifying and helping those with these problems. Using weighted linear and logistic regression on nationally representative data, the current study tests whether the degree of association between social anxiety and drinking differs across levels of social anxiety and/or alcohol use, and across racial/ethnic groups (specifically, Asian Americans and non-Hispanic White Americans). To this end, participants were categorized as having no social anxiety, sub-threshold social anxiety, or SAD. Further, we examined two different drinking behaviors: Drinking frequency and AUDs. Non-Hispanic White Americans are used as a comparison group due to the large amount of research on social anxiety and drinking conducted on this group, as well as the large sample size in the dataset.

## 2.3 Methods

### 2.3.1 Data and participants

The analytic sample includes 9,871 respondents who self-identified as Asian American ( $n=2,284$ ) or non-Hispanic White American ( $n=7,587$ ), derived from the Collaborative Psychiatric Epidemiology Studies (CPES; 2001-2003). This is comprised of three nationally representative surveys of adults in the United States with sampling described by (Heeringa et al., 2004).

### 2.3.2 Measures

*Social anxiety.* Social anxiety was dummy coded with no social anxiety as the reference category (compared with sub-threshold social anxiety or SAD). SAD was determined by diagnostic criteria using the Composite International Diagnostic Interview (CIDI; Kessler and Üstün, 2004). Respondents who endorsed the CIDI's SAD screening question ("shy with people, like meeting new people, going to parties, going on a date, or using a public bathroom"), but did not meet criteria for SAD, were categorized as having sub-threshold social anxiety.

*Alcohol use.* The number of drinks consumed per week was calculated by multiplying CIDI items assessing how many days respondents drank alcohol per week, and how many drinks they consumed on those days (Kessler and Üstün, 2004) and AUDs. CIDI criteria were used to determine whether respondents had no AUDs (0) or any AUD – alcohol abuse or dependence (1).

*Race.* Race/Ethnicity was self-reported as “non-Latino White” (i.e. non-Hispanic White American) (0) or “Vietnamese,” “Filipino,” “Chinese,” or “Other Asian,” which were combined into Asian American (1).

*Socio-demographic characteristics.* The following covariates were examined, given their documented association with alcohol use (Moore et al., 2005): self-reported sex (male or female), age (measured continuously), and education level (years of education completed: (0-11 years (1), 12 years (2), 13-15 years (3), 16 years or more (4)).

### **2.3.3 Analyses**

Analyses were adjusted to account for sampling probabilities, nonresponse, and demographic differences with the 2002 Census. The SVY package in Stata version 15.1 (Statacorp, 2017) was utilized to construct unbiased estimates of standard errors, significance tests, and measures of model fit.

Each alcohol use measure was regressed on social anxiety, race, the social anxiety-race interaction, and covariates, using Poisson regression for number of drinks per week, and logistic regression for AUDs. Adjusted predictions at the mean of covariates were used to determine within-race differences by social anxiety level.

## 2.4 Results

### 2.4.1 Demographics

See Table 2.1. Approximately half of the sample reported being female. On average, non-Hispanic White Americans were older and Asian Americans more educated. Of the Asian American sample, 26.3% identified as Chinese, 22.2% Filipino, 22.8% Vietnamese, and 20.4% other.

More non-Hispanic White Americans met criteria for sub-threshold social anxiety, SAD, and at least one AUD compared to Asian Americans. Non-Hispanic White Americans also reported consuming more drinks per week than Asian Americans.

**Table 2.1**

*Population demographic characteristics, social anxiety (SAD and sub-threshold), and alcohol use (AUDs and drinking frequency) by race*

	Non-Hispanic White		Asian		F	p
	M	SE	M	SE		
Sex (% Female)	52.6	0.010	52.6	0.011	0.002	0.97
Age (Years)	46.7	0.534	41.2	0.732	37.88	<0.001
Education (Years)	13.51	0.071	14.07	0.085	26.48	<0.001
SAD (%)	6.87	0.31	3.05	0.42	34.27	<0.001
Sub-threshold social anxiety (%)	30.1	0.012	23.4	0.010	18.88	<0.001
At least one AUD (%)	2.71	0.30	0.79	0.22	20.06	<0.001
Drinks per week	5.68	0.201	4.97	0.36	17.05	<0.001

*Notes:* Comparisons between Non-Hispanic White American and Asian American

## 2.4.2 Drinks per week

Although the main effects model regressing the number of drinks consumed per week on social anxiety, race, and covariates was significant (Table 2.2), there was no significant association between social anxiety and the number of drinks consumed at the sub-threshold level.

The full model including a social anxiety-race interaction was significant (Table 2.2). The social anxiety-race interaction was significant. As seen in the predicted number of drinks consumed per week (Table 2.4), Asian Americans without social anxiety drink less than white Americans without social anxiety, but this difference disappears for those with sub-threshold social anxiety or SAD (Figure 2.1).

**Table 2.2**

*Weighted Poisson regression analysis predicting number of drinks consumed per week*

Variable	b	SE	T	p-value	95% CI (lower)	95% CI (upper)
<b>Main effects model</b>						
<i>Social anxiety<sup>1</sup></i>						
Sub-threshold	0.10	0.07	1.41	0.162	-0.04	0.25
SAD	0.02	0.13	0.13	0.90	-0.24	0.28
<i>Race<sup>2</sup></i>						
Asian American	-0.44	0.09	-4.64	<0.001	-0.63	-0.25
<i>Demographics</i>						
Age	-0.01	0.002	-4.49	<0.001	-0.01	-0.005
Sex: Female	-0.61	0.07	-8.45	<0.001	-0.75	-0.46
Education	-0.03	0.04	-0.76	0.45	-0.11	0.05
<b>Full model</b>						
<i>Social anxiety<sup>1</sup></i>						
Sub-threshold	0.53	0.43	1.25	0.22	-0.32	1.39
SAD	0.06	0.77	0.08	0.94	-1.47	1.60
<i>Race<sup>2</sup></i>						
Asian American	-2.91	0.39	-7.51	<0.001	-3.68	-2.14
<i>Social anxiety x Race</i>						
Sub-threshold x Asian American	2.44	1.02	2.54	0.01	0.56	4.62
SAD x Asian American	1.16	1.59	0.73	0.47	-2.00	4.32

*Demographics*

Age	-0.05	0.01	-4.59	<0.001	-0.08	-0.03
Sex: Female	-3.17	0.38	-8.27	<0.001	-3.92	-2.40
Education	-0.19	0.23	-0.85	0.39	-0.65	0.26

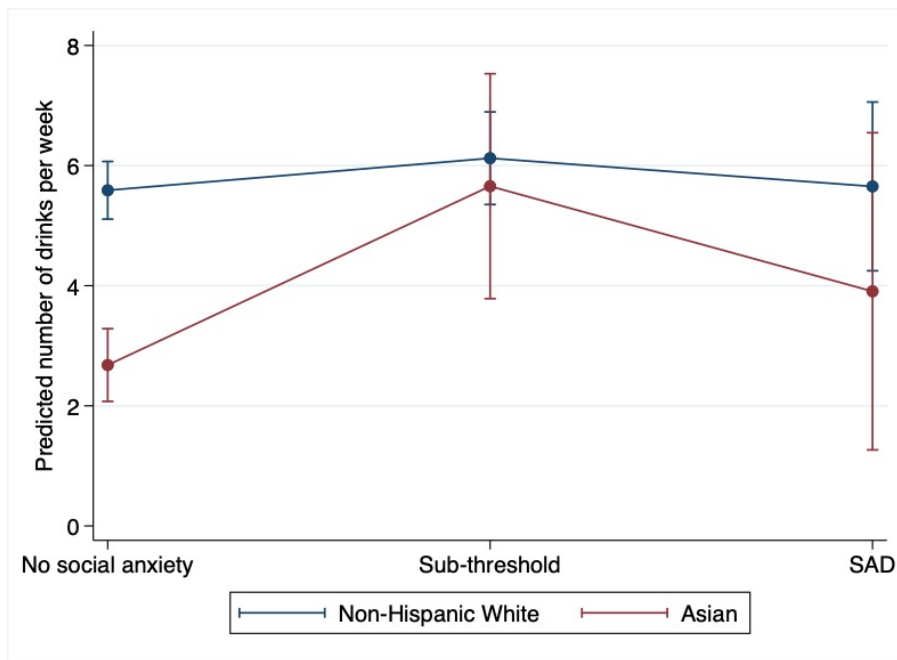
Notes: <sup>1</sup>Reference group is no social anxiety. <sup>2</sup>Reference group is non-Hispanic White American.

Main effects model:  $F(6, 89) = 28.51, p < 0.001$

Full model:  $F(8, 87) = 17.41, p < 0.001$

**Figure 2.1**

*Predicted number of drinks per week by race and social anxiety level*



Notes: Error bars represent 95% confidence intervals

The main effects model regressing the presence of AUDs on social anxiety, race, and relevant covariates was significant (Table 2.3). There was a main effect of social anxiety, such that those with SAD, but not sub-threshold social anxiety, have higher odds of AUDs.

The full model including the social anxiety-race interaction was significant (Table 2.3). The social anxiety-race interaction was significant. As seen in the predicted probabilities of AUD

by race and shyness (Table 2.4), Asian Americans without any social anxiety have a lower probability of having an AUD than white Americans without social anxiety, and Asian Americans with sub-threshold social anxiety have a lower probability of having an AUD than white Americans with sub-threshold social anxiety, but the same is not true of those with SAD (Figure 2.2).

**Table 2.3**

*Weighted logistic regression analysis predicting odds of having an AUD*

<b>Variable</b>	<b>b</b>	<b>SE</b>	<b>T</b>	<b>p-value</b>	<b>95% CI (lower)</b>	<b>95% CI (upper)</b>
<b>Main effects model</b>						
<i>Social anxiety</i> <sup>1</sup>						
Sub-threshold	1.58	0.56	1.28	0.20	0.78	3.20
SAD	2.94	0.81	3.90	<0.001	1.70	5.09
<i>Race</i> <sup>2</sup>						
Asian American	0.26	0.08	-4.25	<0.001	0.14	0.49
<i>Demographics</i>						
Age	0.94	0.006	-9.48	<0.001	0.93	0.95
Sex: Female	0.40	0.07	-5.09	<0.001	0.28	0.57
Education	0.85	0.08	-1.73	0.09	0.70	1.02
<b>Full model</b>						
<i>Social anxiety</i>						
Sub-threshold	1.54	0.56	1.18	0.24	0.75	3.16
SAD	2.91	0.81	3.83	<0.001	1.68	5.06
<i>Race</i>						
Asian American	0.13	0.06	-4.38	<0.001	0.05	0.32
<i>Social anxiety x Race</i>						
Sub-threshold x Asian American	3.84	2.56	2.02	0.045	1.03	14.35
SAD x Asian American	1.62	2.13	0.36	0.72	0.12	21.96
<i>Demographics</i>						
Age	0.94	0.006	-9.48	<0.001	0.93	0.95
Sex: Female	0.40	0.07	-5.08	<0.001	0.28	0.57
Education	0.85	0.08	-1.72	0.09	0.70	1.03

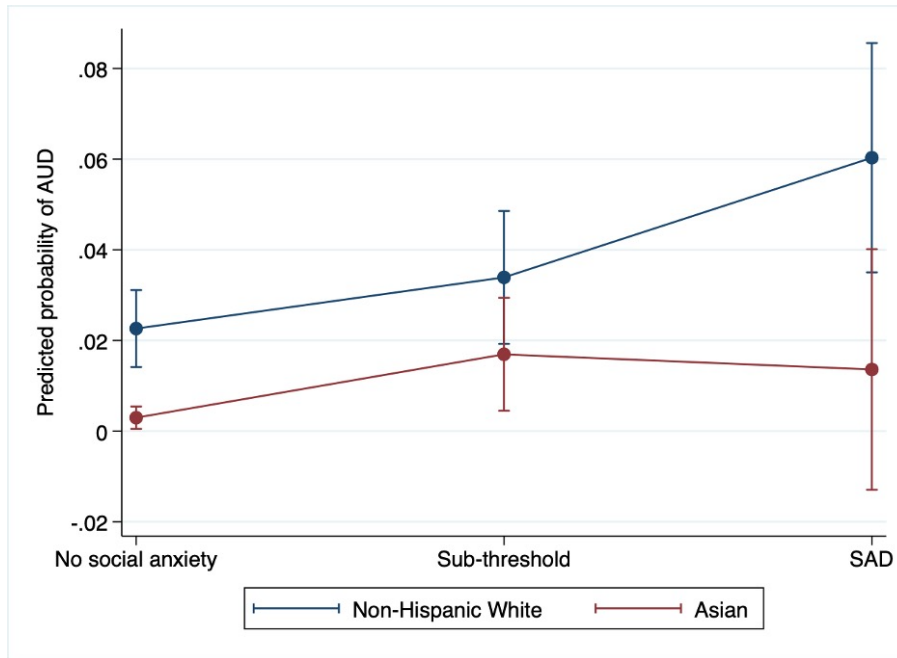
*Notes:* <sup>1</sup>Reference group is no social anxiety. <sup>2</sup>Reference group is non-Hispanic White American. b values represent odds ratios

Main effects model:  $F(6, 110) = 28.31, p < 0.001$   
Full model:  $F(8, 108) = 23.93, p < 0.001$



**Figure 2.2**

*Predicted probability of having an AUD by race and social anxiety level*



Notes: Error bars represent 95% confidence intervals

**Table 2.4**

*Adjusted predictions of mean drinks per week / odds of AUD and 95% confidence intervals*

Predictions	Social anxiety level	Non-Hispanic White	Asian
Number of drinks / week	Not shy	5.52 <sup>1</sup> (4.81, 6.83)	2.89 <sup>1</sup> (2.22, 3.56)
	Shy	5.92 (5.39, 6.45)	4.45 (3.41, 5.49)
	SAD	5.64 (4.31, 6.97)	4.04 (1.65, 6.43)
Odds of AUD	Not shy	2.11 <sup>1</sup> (1.23, 2.99)	0.41 <sup>1</sup> (0.06, 0.73)
	Shy	3.05 <sup>1</sup> (2.19, 3.91)	1.01 <sup>1</sup> (0.27, 1.75)
	SAD	6.03 (3.54, 8.52)	1.36 (0, 3.99)

Notes: <sup>1</sup>Significant difference by race at  $p < 0.05$  using Bonferroni-adjusted p-values

## 2.5 Discussion

The present study found that Asian Americans without any social anxiety consume fewer drinks per week and have lower odds of AUDs than non-Hispanic White Americans without social anxiety; however, this is not true at the sub-threshold social anxiety level (for number of drinks per week) or at the SAD level (for probability of an AUD). These findings highlight the potential impact of race/ethnicity on the relationship between social anxiety and drinking. Cultural differences across racial/ethnic groups, therefore, may be one reason why the association between drinking and social anxiety has not been consistently found in prior research at the non-clinical level (Battista, Stewart, & Ham, 2010; Schry & White, 2013).

While further investigation is needed to determine if alcohol expectancies are the main cause of these racial/ethnic differences, the present results are consistent with what is predicted by prior work on alcohol expectancies in Asian populations. That is to say, it appears that there is a relationship between social anxiety and drinking at lower levels of social anxiety in Asian Americans compared to non-Hispanic White Americans, which suggests a more salient connection between social anxiety and alcohol in the former group.

This work reveals social anxiety as a risk factor for drinking in the “low-risk” population of Asian Americans. The *relatively* high drinks per week consumed by Asian Americans with only sub-threshold social anxiety suggests that risky drinking behaviors in this group are being overlooked and understudied. It is possible that Asian Americans appear low-risk on average because they constitute a combination of extremely low-risk subgroups (e.g. people from

cultures that forbid alcohol) and higher-risk ones, with social anxiety being an additional factor that puts some Asian Americans at particularly high risk.

These findings thus have important implications for prevention of alcohol misuse in diverse settings, such as college alcohol intervention programs, as they rarely explicitly address the role of alcohol in socializing (Barnett & Read, 2005). It is possible that such interventions may not be equally effective across all cultural groups if the alcohol expectancies held differ among them, because the suggested strategies may not be appropriate depending on the individual's motives for using. As such, alcohol interventions in diverse settings should address a wide range of reasons and motivations for drinking.

### **2.5.1 Limitations and Future Directions**

The CPES was conducted in the early 2000s, representing a limitation given the demographic shifts in the Asian American population since, however, it remains the most comprehensive epidemiological study on psychiatric disorder prevalence, and is one of the few national probability samples with Asian Americans.

Items assessing sub-threshold conditions were limited by the CPES's diagnostic interview, resulting in assessment of sub-threshold social anxiety with a single item. Although we believe this item can adequately distinguish those with some or no social anxiety, given its function as a screening question, an ideal alternative would be a multi-item scale assessing sub-threshold social anxiety. Similarly, subsequent work should examine a range of risky drinking behaviors.

Finally, future research should consider within-group differences in the Asian American population, which was not possible in this study due to sample size limitations. Asian Americans' drinking habits vary by ethnic background, as those with ties to alcohol-friendly cultures drink more (Lee, Han, & Gfroer, 2013). Culturally-specific alcohol expectancies is an area for investigation that may shed light into why certain Asian American subgroups drink more than others. Another dimension by which Asian American population should be examined is generational status, and/or length of time in the United States – factors that influence acculturation and thus the extent to which Asian Americans may have adopted more Western beliefs and behaviors.

Limitations notwithstanding, this is the first known study of the association between social anxiety and alcohol use, at both clinical and subthreshold levels, among Asian Americans. Findings suggest social anxiety is a risk factor for drinking among Asian Americans, with important implications for prevention efforts, and as such further research is warranted.

## CHAPTER 3

### Psychosocial Correlates of Substance Use in the Unemployed with Social Anxiety

Sakura Takahashi, Kate B. Taylor, Richard LeBeau, & Joseph A. Himle

#### 3.1 Abstract

Although many vocational interventions exist to support individuals finding employment, Social Anxiety Disorder (SAD) can act as a significant barrier to job-searching that makes traditional interventions less effective. The Work-Related Cognitive Behavioral Therapy (WCBT) program was developed specifically for unemployed adults with SAD to teach job search behaviors and reduce SAD symptoms (Himle et al., 2014). However, in order to maximize the effectiveness of this intervention, it is necessary to understand what other barriers may prevent individuals from successfully finding and maintaining stable employment. Substance Use Disorders (SUDs) are barriers common among people with SAD. As substance use exacerbates the symptoms of SAD, can be detrimental to finding employment, and is itself associated with a host of negative outcomes, it is necessary to understand the risk factors associated with it. The present study investigated psychosocial variables associated with problematic use of alcohol, tobacco, cannabis, and other substances as measured by the Alcohol, Smoking, and Substance Involvement Screening Test (ASSIST) among unemployed individuals with SAD in the Los

Angeles area. Age, gender, race/ethnicity, education level, and experiences of discrimination were all associated with riskier substance use, but there was a large degree of variation depending on the specific substance, highlighting the importance of considering substances separately in consideration of their unique features. In addition, the implications of race/ethnicity being a predictor of risky substance use will be discussed.

## 3.2 Introduction

Among the many negative effects of Social Anxiety Disorder (SAD) on daily life, impairment in finding and keeping employment may be one of the most noteworthy, with over 90% of those with social anxiety reporting significant occupational impairment (Turner et al., 1986). People with SAD are more likely to be unemployed and work less hours on average, which is unsurprising considering the social nature of many jobs (Patel et al., 2002; Tolman et al., 2009). As such, when providing vocational services, it can be helpful to specifically address social anxiety symptoms, traditional interventions having been found to be less effective with this population (Blanco et al., 2010).

In addition, Substance Use Disorders (SUDs) are associated with both occupational issues and SAD. Like SAD, problematic substance use increases the chances of unemployment (Henkel, 2011). The effects on occupational functioning are further compounded when SUDs and SAD are comorbid (Buckner et al., 2008). One reason for this may be that substances act as a coping mechanism for the anxieties caused by SAD and/or work. Indeed, a qualitative study on unemployed people with SAD discovered that many of them used substances as a way of coping with job-related anxieties (Himle et al., 2020). Ironically, despite being used to deal with the stress of work, maladaptive substance use actually seems to have the opposite effect of exacerbating the stress due to its negative effect on work attendance and performance (Himle et al., 2020). Therefore, treating issues related to substance use is an essential component of successful interventions for both SAD and job-searching.

One way to better understand the characteristics of this particularly vulnerable population with comorbid SAD and SUD(s) is to determine some of the demographic and psychosocial

correlates of risky substance use in the group. Doing so would hopefully serve as a step towards more accurately and quickly identifying intervention participants who would benefit from additional support for their substance involvement, particularly considering that risky substance use could negatively affect the effectiveness of the intervention. Thus, the present study uses data from a randomized controlled trial of a cognitive-behavioral therapy program for unemployed individuals with social anxiety in order to investigate risk factors for problematic substance use in this group.

### **3.2.1 Work-Related Cognitive Behavioral Therapy (WCBT)**

The Work-Related Cognitive Behavioral Therapy (WCBT) program was developed specifically for unemployed adults with social anxiety, using a combination of techniques from traditional Cognitive Behavioral Therapy and vocational interventions. A pilot program demonstrated that when compared to vocational services as usual, participation in WCBT improved job search behaviors and job search self-efficacy, as well as alleviated social anxiety symptoms (Himle et al., 2014). The pilot was followed by a multi-site randomized controlled trial for adults ages 18-60 with SAD seeking vocational services at Jewish Vocational Services (JVS) in Los Angeles and Detroit (Himle et al., 2019).

Using baseline data from the multi-site RCT of the WCBT program, this study examines demographic and psychosocial correlates of risky substance use among this unique population of unemployed individuals with SAD. In particular, race and ethnicity were included as potential correlates of risky substance use as we were interested in the possibility that people of different races and ethnicities would be more or less likely to use substances in response to combined SAD and unemployment.



### **3.3 Methods**

#### **3.3.1 Data**

This study is a secondary analysis of baseline data from a randomized controlled trial of a vocational intervention called WCBT, specifically tailored towards unemployed adults with SAD. The RCT compared vocational services as usual with a combination of WCBT and typical vocational services. Details of the WCBT intervention and data collection methods can be found elsewhere (Himle et al., 2019).

For the purposes of the analysis, only data from the Los Angeles sample (n = 204) was used due to the small sample size of the Detroit RCT (n = 91). The data from the sites were not combined due to significant demographic differences between them.

#### **3.3.2 Measures**

*Risky substance use:* The Alcohol, Smoking, and Substance Involvement Screening Test (ASSIST) was used to measure the degree of risky substance use (Ali et al., 2002). The ASSIST is a clinician-administered scale that provides a global substance use risk score (henceforth referred to as “global risk score”) that indicates degree of involvement with any psychoactive substance, as well as risk scores for specific substances including alcohol, tobacco, cannabis, and illicit/prescription drugs. The raw risk scores were converted into risk categories (none, low, moderate, or high) based on guidelines from the World Health Organization (2002). For analyses on specific substances, moderate and high-risk scores were combined due to their low prevalence.

*Race/Ethnicity:* Race and ethnicity were self-reported. Participants could choose to identify as Black, White, Asian, American Indian/Native American, Native Hawaiian/Pacific Islander, other, or more than one race. Due to their low prevalence all races other than White and Black were combined into an “Other” category. Hispanic ethnicity was measured separately due to the fact that it was distributed across racial categories. Participants self-reported whether they identified as Hispanic and/or Latino.

*Demographics:* The following demographic variables were examined due to their known association with substance use (Moore et al., 2005): Age (measured continuously), gender (self-reported as male, female, or other; re-coded as male or non-male), and education level (a dichotomous variable indicating whether the participant was or was not a college graduate).

*Everyday discrimination:* Given our interest in race/ethnicity as a correlate, we also measured the degree to which individuals experienced discrimination on an everyday basis (Everyday Discrimination Scale; Williams, Yu, & Anderson, 1997). This scale consisted of 10 items such as “You are treated with less courtesy than other people,” for which participants indicated the level of frequency from 1 (never), to 6 (almost everyday). The scores for each item were then summed.

### **3.3.3 Analyses**

Using the “nnet” package (Venables & Ripley, 2002), multinomial logistic regression in R ver. 4.0 (R Core Team, 2020) was used to regress ASSIST risk categories (for global risk score, and substance-specific risk scores for alcohol, tobacco, and cannabis) on race, ethnicity, age, gender, education level, housing situation, and everyday discrimination score respectively.

“No or low-risk” (i.e. no substance use at all, or low-risk substance use only) was used as the baseline category in the analysis for the global risk score, but “no-risk” (i.e. no use of these specific substance) was used as the baseline category in all other analyses.

### 3.4 Results

#### 3.4.1 Demographics and rates of substance use

The sample consisted of 204 participants, all located in Los Angeles. The mean age of the sample was 44.03 (SD = 11.05). 35.29% of the sample identified as female. With regard to race, 29.90% identified as Black/African American, 38.73% as White, and 31.33% as multiple or other races. 22.55% reported as being as Hispanic and/or Latino ethnicity regardless of race.

The prevalence of any past 3-month use of any substance among the total sample was 82.35%. Among the substances, usage was highest for alcohol (75.00%), followed by tobacco (42.16%), cannabis (29.41%), then any illicit or prescription drug (17.65%). Table 3.1 displays the proportion of participants at each level (no-risk, low-risk, moderate-risk, high-risk) for global substance use risk (i.e. every substance combined), as well as alcohol, tobacco, and cannabis.

**Table 3.1**

*Percentage of participants falling into each ASSIST risk category per substance*

	<b>Risk category</b>	<b>Percentage of sample</b>
<b>Any substance (Global risk)</b>	None	17.65
	Low	46.08
	Moderate	18.63
	High	17.65
<b>Tobacco</b>	None	57.84
	Low	10.29
	Moderate/high	31.86
<b>Alcohol</b>	None	25.00
	Low	61.76
	Moderate/high	13.23
<b>Cannabis</b>	None	70.59
	Low	12.25
	Moderate/high	17.16

### **3.4.2 ASSIST global risk score**

The results presented in this section represent the relative risk of being in the moderate-risk or high-risk categories for global substance use risk, as compared to no or low-risk substance use. Older age was associated with reduced relative risk of moderate-risk or high-risk overall substance use (see Table 3.2). Experiences of everyday discrimination were associated with greater relative risk of high-risk substance use.

### **3.4.3 Tobacco**

For all remaining analyses, results represent the relative risk of being in the low-risk or moderate/high-risk categories for specific substances, as compared to absolutely no use of that substance (i.e. no-risk). Older age was associated with reduced relative risk of both low-risk and moderate/high-risk tobacco use (see Table 3.2). Male gender (versus female) was associated with increased relative risk of being in the low-risk category, and being Black (versus White) was associated with reduced relative risk of being in the low-risk category for tobacco use. Having a college degree was associated with reduced relative risk of moderate/high-risk tobacco use.

### **3.4.4 Alcohol**

The only significant predictor of risky alcohol use (as compared to no alcohol use) was Hispanic ethnicity, which was associated with increased relative risk of low-risk alcohol use (see Table 3.2).

### **3.4.5 Cannabis**

Older age was linked with reduced relative risk of moderate/high-risk cannabis use (as opposed to no cannabis use; see Table 3.2). Male gender was associated with increased relative risk of low-risk cannabis use. Everyday discrimination was associated with increased relative risk of moderate/high-risk cannabis use. Surprisingly, being in stable housing was also linked with increased relative risk of moderate/high-risk cannabis use.

**Table 3.2**

*Results of multinomial logistic regression analyses on correlates of ASSIST substance use risk categories*

	Global substance use <sup>1</sup>			Alcohol <sup>2</sup>			Tobacco <sup>2</sup>			Cannabis <sup>2</sup>		
	Moderate	High	Low	Mod/High	Low	Mod/High	Low	Mod/High	Low	Mod/High	Low	Mod/High
<b>Age</b>	0.96* (0.93, 0.99)	0.96* (0.93, 0.99)	0.94* (0.90, 0.99)	0.96* (0.93, 0.99)	0.99 (0.97, 1.03)	0.98 (0.94, 1.03)	1.03 (0.98, 1.07)	0.95* (0.91, 0.99)				
<b>Gender (is male)</b>	0.97 (0.43, 2.19)	1.44 (0.65, 3.20)	3.44* (1.20, 9.90)	0.93 (0.47, 1.84)	0.71 (0.35, 1.43)	1.61 (0.60, 4.32)	4.84* (1.87, 12.52)	2.47 (1.06, 5.74)				
<b>Race (is Black)</b>	1.53 (0.57, 4.08)	1.05 (0.38, 2.91)	0.15* (0.03, 0.69)	0.60 (0.26, 1.38)	1.29 (0.52, 3.19)	1.56 (0.46, 5.37)	1.54 (0.50, 4.72)	2.33 (0.78, 6.96)				
<b>Race (is Other)</b>	1.25 (0.46, 3.44)	0.99 (0.37, 2.70)	0.36 (0.10, 1.23)	0.61 (0.27, 1.39)	0.66 (0.29, 1.54)	0.40 (0.11, 1.51)	0.86 (0.26, 2.90)	2.25 (0.78, 6.53)				
<b>Ethnicity (is Hispanic)</b>	0.43 (0.15, 1.24)	0.53 (0.19, 1.50)	0.93 (0.27, 3.21)	0.58 (0.25, 1.36)	2.85* (1.08, 7.50)	2.60 (0.68, 9.90)	1.37 (0.41, 4.56)	1.23 (0.46, 3.33)				
<b>Education (is college grad)</b>	0.48 (0.22, 1.07)	0.84 (0.37, 1.89)	0.32* (0.11, 0.96)	0.48* (0.25, 0.94)	1.29 (0.64, 2.61)	1.03 (0.37, 2.84)	0.79 (0.30, 2.07)	0.68 (0.29, 1.58)				
<b>Housing (is stable)</b>	1.18 (0.49, 1.24)	0.89 (0.37, 1.50)	2.29 (0.65, 8.02)	1.11 (0.54, 2.31)	0.84 (0.39, 1.84)	0.62 (0.21, 1.83)	2.60 (0.85, 7.95)	4.30* (1.58, 11.71)				
<b>Everyday discrimination</b>	1.02 (0.98, 1.06)	1.05* (1.02, 1.09)	0.99 (0.94, 1.04)	1.02 (0.99, 1.05)	0.99 (0.95, 1.01)	1.02 (0.98, 1.06)	1.04 (0.99, 1.08)	1.05* (1.01, 1.09)				

*Notes:* Results represent the relative risk of falling into the given risk category group compared to the reference group, followed by a 95% confidence interval in parentheses.

<sup>1</sup>Reference group is no-risk or low-risk. <sup>2</sup>Reference group is no-risk.

\* Correlate is significant (i.e. falls outside of the 95% confidence interval)

### 3.5 Discussion

The present study examined substance use risk scores among unemployed individuals with SAD in the Los Angeles area, thus highlighting psychosocial and demographic factors that are associated with problematic use of substances in this population. Younger age and experiences of discrimination were associated with increased ASSIST global substance use risk. Younger age, male gender, non-Black race, and lower education level were associated with increased tobacco use risk. Hispanic ethnicity was linked with increased alcohol use risk. Finally, younger age, male gender, stable housing status, and discrimination were linked with increased cannabis use risk.

One finding of note is that certain substances seem to be more or less problematic depending on one's race or ethnicity. Specifically, being Black was linked with reduced probability of engaging in low-risk tobacco use, and identifying as Hispanic was associated with greater probability of engaging in low-risk alcohol use. While strong conclusions cannot be drawn as race and ethnicity are only proxies for culture, one reason for these results may be cultural differences in substance use practices. For example, drinking alcohol is an integral part of socializing for some cultures and completely forbidden in others.

However, it is worth noting that in either case, race/ethnicity were only associated with low-risk substance use, and as such, more investigation is needed to determine whether they would benefit from reducing their consumption. For instance, Hispanic ethnicity was associated with greater chances of engaging in low-risk alcohol use. On one hand, this may be simply due to the ubiquity of alcohol in Hispanic and Latin culture creating more opportunities for drinking



than for those of other ethnicities, which may not be harmful in and of itself. However, considering the participants in the present study were all individuals in vulnerable positions (i.e. unemployed with social anxiety), it is worth considering whether even low-risk alcohol use acts as a barrier to developing skills needed to achieve employment and remission of social anxiety symptoms.

One significant implication of the study with regard to mental health practice is that the predictors of risky substance use appear to vary considerably by type of substance. Of the three specific substances we examined, there was very little overlap with regard to significant correlates. One possible reason is that rather than (or in addition to) there being people who heavily consume multiple substances, there may be those who are only at risk with regard to a specific substance. This suggests that researchers and practitioners should be wary of relying on the global risk score or other measures of “general” substance use, as the individual substances do not appear to be interchangeable. Notably, cannabis was the only specific substance for which everyday discrimination and stable housing were associated with increased relative risk of being in the moderate/high-risk category. While further investigation is necessary to understand if this is indeed the case, it is possible that cannabis specifically is, or is believed to be, more effective as a coping mechanism for discrimination in this group. Further, the legalization of cannabis in California may have influenced the demographics for which cannabis is the substance of choice, leading to it being used problematically more often among people who are in stable living situations.

These findings also help accurately characterize the individuals who take part in these kinds of vocational and/or mental health interventions. It is common practice in intervention

trials to exclude participants who have more complicated versions of the targeted disorder, but in reality, many individuals with mental health disorders are likely to experience additional issues, such as comorbid mental health disorders or risk factors like homelessness. Indeed, the present study showed that substance involvement was high in this sample, with alcohol use rates of around 75%, which was to be expected given the high comorbidity rate between social anxiety and substance use. This suggests that next steps in developing the current intervention would almost certainly benefit from a substances component to improve efficacy.

However, as the present study consists of correlational analyses of substance use and associated factors at one time-point, the causal direction of these relationships cannot be determined. Longitudinal analyses that examine the impact of the intervention on main outcomes, while examining substance use and other factors as potential moderators, can be found elsewhere (described in Himle et al., 2019). An additional analysis that may be of interest is the extent to which the WCBT intervention directly impacted substance use – did those who received the intervention see reductions in their substance use, or not? This would also provide some insight into whether the stress of unemployment and/or SAD was a causal factor contributing to the initial risky substance use. If it does seem to be the case that substance use reduced or hindered the effectiveness of the intervention, future work should also investigate how substance use interventions can be incorporated into WCBT – for example, should it be conducted simultaneously, or before the vocational/social anxiety intervention?

## CHAPTER 4

### **Stressors and Emotion regulation Strategies for International Students in Japan During the COVID-19 Pandemic**

Sakura Takahashi, Shannon Blajeski, & Joseph A. Himle

#### **4.1 Abstract**

International students were among the many groups to have been negatively impacted by the COVID-19 pandemic. Recent research suggests that they experienced the mental health concerns experienced by their domestic peers, and they faced additional unique issues such as higher rates of loneliness. However, international students around the world are an extremely heterogeneous group whose experiences depended on their specific circumstances, such as the location of their host institution, and whether they elected to weather the pandemic in their home country or host country. The present study examined the impact of the COVID-19 pandemic on mental health for international students studying Japanese language in Japan, specifically with regard to the stressors they experienced and the emotion regulation strategies they used to deal with them. Their causes of stress were generally characterized in the three themes of “feeling stuck,” “running out,” and “isolation,” whereas the emotion regulation strategies used could be

categorized largely as “problem solving,” “emotion focused,” or “social” in nature. The implications of these findings for practice and policy are discussed.

## 4.2 Introduction

It has been said that the COVID-19 pandemic has caused a co-occurring “psychiatric epidemic” of increased psychological distress, as well as mental health problems, among the general population (Hossain et al., 2020). Indeed, a cross-cultural review of studies examining mental health disorder prevalence has found that levels of depression, anxiety, and general stress have increased all over the world (Lakhan, Agrawal, & Sharma, 2020).

One reason for this rapid rise in mental health problems may be that the unique characteristics of this crisis – in particular, the fact that it is a pandemic an airborne disease, thus necessitating social distancing – have led to an increase in feelings of loneliness and worry (Gubler et al., 2021). Furthermore, many people have found themselves unable to cope with these negative emotions in healthy ways (Velotti et al., 2021). For example, studies have found that use of substances such as tobacco, alcohol, and illicit drugs has increased during the pandemic, and that substance use is linked with worse COVID-19 outcomes (Mallet, Dubertret, & Le Strat, 2021). People may be turning to substance use in part because the pandemic is limiting previously available options for healthy emotion regulation.

### 4.2.1 International student mental health

Even outside of the pandemic context, international students face unique challenges with regard to mental health that are typically not experienced by domestic students. The term *international students* will be used from here to refer to students who intend on completing a full multi-year program of study in their host country, as opposed to *study-abroad students* who are visiting for shorter periods. Unless they have pre-existing connections in their host country,

international students are almost always far removed from their homes and families, meaning that international students are more likely than domestic ones to experience the negative effects of discrimination and homesickness (Poyrazli & Lopez, 2007). Furthermore, international students with mental health concerns may experience unique stressors such as a language barrier and cultural differences in approaches to mental health, meaning that international students tend to be less willing to access counseling and other such services at their host institutions (Mori, 2000).

Unsurprisingly, the COVID-19 pandemic brought with it new problems specific to international students. Many were stuck in their host country, unable to go home due to strict travel restrictions, while others were stuck in their home country, unable to go to school in person. One qualitative study of international students in an American university found that social isolation, healthcare access, limited opportunities to advance studies/career, and racism/discrimination were four key factors that negatively impacted their wellbeing (Koo & Nyunt, 2022). Another qualitative study of international students in the United States partially corroborated these findings, revealing that uncertainty and anxiety about policy changes, fears of xenophobia, institutions lacking understanding of international students' unique challenges, and awareness of racial/cultural identity were the primary stressors (Zhang et al., 2022). Therefore, it appears that there were concerns that overlapped with those of domestic students (such as social isolation), and others that were unique to international students (such as uncertain healthcare access due to lapses in insurance coverage).

Isolation and loneliness were particularly problematic for students stuck in their host country because of the aforementioned distance to family and friends. A study of international

students in the United Kingdom and the United States found that those who stayed in their host country (as opposed to returning to their home country) during the pandemic experienced higher levels of stress and felt that they lacked social support (Lai et al., 2020). This study also found that the negative mental health effects were mitigated for students who were able to use emotion regulation strategies such as positive thinking and exercise, highlighting the importance of using appropriate emotion regulation strategies in these stressful situations (Lai et al., 2020).

#### **4.2.2 International students in Japan**

Much psychological research on international students has focused on those studying in Western countries. However, recent years have seen a marked increase in international student enrollment in other regions, including East Asia – China and Japan now being included in the top ten global destinations for studying internationally (Institute of International Education, 2019). The countries sending the most international students to Japan prior to the pandemic were China, Vietnam, Nepal, South Korea, and Taiwan (Japan Student Services Organization, 2019).

Pre-pandemic evidence suggests that international students in Japan faced similar challenges to those in the West, such as higher rates of depression, experiences of discrimination, and struggling with cultural barriers (Nguyen, Li, & Meirmanov, 2009; Murphy-Shigematsu, 2002). However, it is worth noting that the little research conducted on international students in Japan has largely been with undergraduate students, even though undergraduates do not make up the majority of international students in Japan – there are many other types of educational institutions for students with different objectives, which are described briefly below.

#### *4.2.2.1 Educational institutions that accept international students*

Prior to the pandemic, in May of 2019, there were over 89,000 international students enrolled in undergraduate schools, over 83,000 in Japanese language institutes, and over 78,000 in professional training colleges (Japanese Student Services Organization, 2019). Other types of institutions which will not be discussed here include graduate schools and pre-undergraduate preparatory courses.

Undergraduate programs refer to four-year programs at universities that culminate in a Bachelor's degree. There are about 800 such universities in Japan including publicly and privately funded institutions (Japan Student Services Organization, n.d.). There are an increasing number of universities that offer courses or programs in English, but the majority of schools only teach in Japanese. A high level of Japanese proficiency is needed in order to pass the examinations to enter universities that only offer courses in Japanese.

Professional training colleges are post-secondary educational institutions with programs of varying length, that serve to teach skills required for a specialized vocation or trade. There are currently more than 2000 professional training colleges in Japan. Examples of subjects that can be studied at professional training colleges include nursing, software engineering, fashion design, and social welfare (Japan Student Services Organization, n.d.). Almost all professional training colleges offer courses in Japanese only, meaning that international students must demonstrate high levels of Japanese proficiency to be admitted.

Language institutes, which are the focus of the present paper, are schools which specialize in teaching Japanese to non-native speakers. There are approximately 600 such schools in Japan



currently (Japan Student Services Organization, n.d.). There, international students can attain the required proficiency to attend other educational institutions, or apply to jobs in Japan, in approximately one to two years depending on prior experience. These language institutes also teach other non-native speakers living in Japan, such as the family members of expatriates. While these institutes focus almost entirely on teaching language, they also provide guidance for applying to jobs or schools.

#### *4.2.2.2 The effect of the COVID-19 pandemic*

International students enrolled at Japanese educational institutes, regardless of type, were impacted by the travel restrictions set by many countries in an effort to control the spread of the pandemic. In Japan, restrictions on entry by foreign nationals began to take place in spring 2020, although students were already affected by travel restrictions from other countries before then, and these restrictions were tightened and loosened several times over the next two years (Takahara, 2022). As a result, many international students found themselves waiting to enter Japan and start their studies, or unable to go home as they were unsure of their ability to re-enter Japan later.

Interestingly, it appears that language institutes were hit particularly hard by the pandemic with regard to enrollment – as of 2021, the number of international students in language institutes had decreased to just over 40,000, while undergraduate institutions and vocational schools maintained over 70,000 students respectively (Japanese Student Services Organization, 2021).

Despite the drop in enrollment during the pandemic, Japanese language institutes will likely continue to play an important role in the lives of international students in Japan, as it remains difficult to find employment or attend most schools without a high level of Japanese proficiency. As such, it is important to determine whether the experiences of students at these language institutes differ from those of students in undergraduate programs.

### **4.2.3 Aims**

There is presently a gap in the literature regarding international student mental health in Japan, in that the majority of studies have been conducted on students in undergraduate programs in Western nations, and not the many other types of educational institutes that serve international students. In addition, there is a still lack of literature on the impact of the COVID-19 pandemic on international students across the world. Therefore, this study aims to characterize stressors experienced by international students at a Japanese language institute during the COVID-19 pandemic, and the emotion regulation strategies they used to cope.

A qualitative, exploratory approach was taken due to the unique nature of the sample and circumstances. Specifically, the two questions we hope to answer are: (1) What caused emotional stress for these students during the pandemic? And (2) How did they cope with such stress during the pandemic?

### 4.3 Methods

Reflexive Thematic Analysis was used to identify themes in the data through an interpretive, iterative process following Braun and Clarke's (2006, 2021) six-step method. This method was thought to be appropriate for providing rich descriptions of lay understandings of causes and remedies for stress in a population that has been seldom studied, while taking advantage of the lead researcher's knowledge of the culture and topic at hand.

A combination of inductive and deductive approaches were used due to the nature of the researcher's background and the characteristics of the sample. The lead researcher was an Japanese international student in the United States, and as such, an inductive approach was taken to data collection in order to avoid imposing pre-existing assumptions about international student life, which could be very different in the Japan versus the United States. In addition, given the understudied nature of the population, an inductive approach to theme development was taken, such that themes were initially generated from the data without attempting to fit them into existing theoretical frameworks. However, particularly when examining emotion regulation strategies, the lead researcher – who had a background in social psychological emotion regulation research – found that standard terminology from emotion regulation literature were found to be useful in describing underlying similarities between various behaviors. The lead researcher also applied her existing knowledge of the effects of COVID-19 on Japanese society in order to make sense of participants' responses. Finally, a generally realist lens was taken for analysis, such that participants' responses were assumed to reflect their reality.

### **4.3.1 Sample**

After receiving IRB approval from the University of Michigan – Ann Arbor, the lead researcher recruited participants from a Japanese language institute located in Yokohama, Japan. The school offers language courses ranging in length from several months to two years, with support for students looking to apply to jobs or other educational institutes after graduation.

Purposive sampling was used to locate students who were over the age of 18, had arrived in Japan prior to March 2021, and could speak either English or Japanese fluently enough to feel comfortable participating in an interview. Instructors identified students who met these criteria and the researcher contacted individuals from this list via email, taking care to recruit participants from a range of countries. All 16 participants who were contacted agreed to participate. The final sample had participants mainly from Asian and European countries, such as China, Russia, and Sri Lanka. Both male and female participants were included, as well as a mix of participants who arrived prior to and after the start of the pandemic. Although the majority of participants were seeking employment post-graduation, some were planning to attend other educational institutions. Details on the sample can be found in Table 4.1.

### **4.3.2 Data collection**

Semi-structured interviews were conducted by the lead researcher in either Japanese or English, depending on participant preference. Participants also decided whether the interview took place in-person (but socially distanced), or online via Zoom. Interviews began by asking about the participant's demographic information and living situation, followed by questions about their reasoning and circumstances for studying in Japan, then questions about what they

found most stressful about living in Japan during the pandemic, and finally questions about what strategies they used (if any) to deal with the stress.

Interviews lasted between 30 minutes to an hour and were audio recorded.

Confidentiality was explained thoroughly at the time of consent. The audio recordings were transcribed in the language in which the interview took place. Pseudonyms were used to de-identify names and identifying information was deleted during the transcription process.

Transcripts in Japanese were translated to English by the lead researcher, and then the de-identified interview transcripts were uploaded into Dedoose software program (version 9; SocioCultural Research Consultants, 2021).

### **4.3.3 Data analysis**

Analysis was conducted after all data had been collected. The lead researcher first took notes while re-reading all transcripts in their original language and in English multiple times. The Dedoose software program was then used to code line-by-line. Effort was also made to identify outlier responses – in particular, participants who reported not being particularly stressed during the pandemic. The lead researcher, a native speaker of both English and Japanese, conducted all coding on the transcripts in their original languages (while the codes themselves were written in English), because of the potential for subtle nuances in Japanese to be lost in translation. Interviews conducted in Japanese were then translated to English for the sake of being able to share the transcripts with the English-speaking research team, and so that excerpts could be quoted.

After coding, all codes were transferred by the lead researcher to a separate document, and split based on whether they addressed the first or second research question (i.e. causes of

stress or emotion regulation strategies). Then, the codes were organized into potential groupings and sub-groupings under the respective research questions, along with brief summaries of what each potential grouping represented in terms of theme.

For *causes of stress*, an entirely inductive approach was taken with regard to coding and then determining overarching similarities, with a focus on description and summarization. However, when formulating themes, interpretation was used to identify the underlying similarities between various reported causes. In addition, the lead researcher's knowledge of international students' experiences, and the general effects of COVID-19 on Japanese society, provided additional context.

For *strategies*, a more deductive approach was taken – while emotion regulation theory was not applied in the process of data collection, upon working with the data, the lead researcher found that the results were found to align somewhat with previously used terminology in the literature. Due to the potential usefulness of being able to connect the present study with existing literature, these terminology were used in theme naming when appropriate. In addition, although the general approach was again descriptive, interpretation of participants' speech (e.g. order of bringing up strategies and word choice in describing these strategies) was used to help gauge their perceptions of strategy effectiveness.

At each stage in which themes were generated or updated, the research team (S.T., S.B. and/or J.H.) met so that the lead researcher could discuss the themes and sub-themes, address any discrepancies, and present examples of quotes and codes. The final versions of the codes, themes, and sub-themes, were chosen based on consensus among team members. In addition,

consensus among the team was used when organizing sub-themes within themes, and when finalizing theme names for clarity and depth.

#### 4.4 Results

A total of 16 semi-structured interviews were conducted with students from 11 countries, most of which were other countries in Asia. Their demographic characteristics are described in Table 4.1. The mean age of the sample was 27.7, and the sample included both male and female students. 5 of the students were applying to other post-secondary schools in Japan, such as graduate schools or professional training colleges, while the remaining 11 were in the process of applying, or planning to apply, for jobs in Japan. 10 of the students arrived in Japan before the start of the pandemic, and 6 of them arrived after travel restrictions had started to be set for entering the country.

**Table 4.1**

*Sample characteristics (n = 16)*

	<b>Mean (SD)</b>
<b>Age</b>	28 (5.25)
	<b>n (%)</b>
<b>Gender</b>	
Male	10 (62.50%)
Female	6 (37.50%)
<b>Region of origin</b>	
East Asia	6 (37.50%)
Southeast Asia	4 (25.00%)
South Asia	2 (12.50%)
Europe	4 (25.00%)
<b>Interview language</b>	
Japanese	9 (56.25%)
English	7 (43.75%)
<b>Post-graduation goal</b>	
Further education	5 (31.25%)
Employment	11 (68.75%)
<b>Arrival in Japan</b>	
Pre-pandemic	10 (62.50%)
Post-pandemic	6 (37.50%)

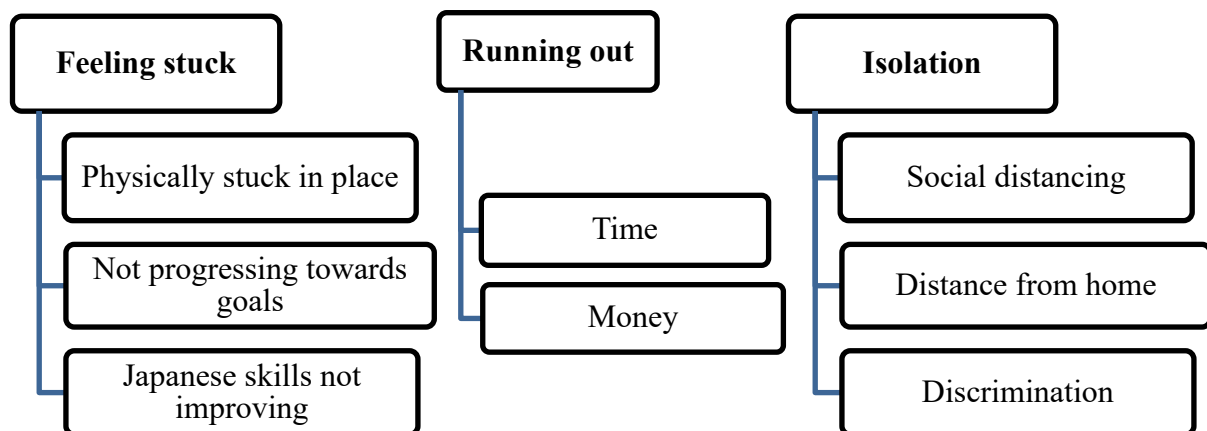


#### 4.4.1 Causes of stress

The overarching themes found with regard to the causes of stress for international students during the pandemic were “feeling stuck,” “running out,” and “isolation” (see Figure 4.1.). The case of participants who did not feel more stressed will also be discussed.

**Figure 4.1**

*Causes of stress for international students in Japan during COVID-19*



##### 4.4.1.1 *Feeling stuck*

The first overarching theme found was “feeling stuck,” in that many participants’ primary concern was that the COVID-19 pandemic and its downstream effects were blocking them from progressing towards their life goals. However, the nature of how they felt stuck differed somewhat between participants who arrived recently, versus those who were already in Japan before the start of the pandemic.

The participants who recently came to Japan had, shortly before the interview took place, spent many months stuck in their home country, waiting for travel restrictions to be lifted. These participants said that they experienced a “depressive mood” and “a loss of motivation” during this waiting period because of the uncertainty of when they could enter Japan, and in extension, achieve their goals. One Chinese woman in her early twenties, who was hoping to study video game design in Japan, said:

There was the possibility that I wouldn’t be able to come to Japan, and if so I’d have to get a job. It’d be like I barely missed achieving my dream, so that made me feel bad. I probably would have gotten a job I don’t like.

For this participant, moving to Japan represented a large turning point which could affect the trajectory of her entire life. As such, she mentioned that she experienced the most worry when she was stuck in China, and felt relatively stress-free when she moved to Japan. Other participants who were stuck in their home countries while waiting for travel restrictions to be lifted likewise expressed worry over the prospect of not achieving their bigger dreams in Japan – getting a higher degree, a better life for their children, success in a certain career, and so on.

On the other hand, the participants who were already in Japan prior to the beginning of the pandemic felt stuck, but for a different reason –the direct impact of the pandemic on their future opportunities. All participants interviewed for this study had some plans on working or continuing their studies after they learned Japanese at the language institute, and many were worried that the pandemic hurt their chances in these endeavors. For example, it was pointed out that some language proficiency exams (which are necessary to apply to several schools and companies) had been postponed or cancelled, reducing the number of chances for international

students to prove their language skills. The same was true for other job-related events, such as training seminars and conferences for networking. An Indonesian man in his twenties who was applying for jobs said:

The interviews became online, and things like seminars for job searching got cancelled, and teachers couldn't meet for consultation. Because of that, my education on the job search process was lacking. As a result my job search didn't go that well. [...] Because of COVID, travel agencies weren't hiring. Hotels weren't hiring much either, so the amount of openings went down, and since a lot of other foreigners are looking for jobs, my chances got smaller and smaller.

He added that the situation made him very anxious about his job prospects and he was thus unable to focus on studying Japanese. Further, his industry of preference – tourism and hospitality, a popular field among international students, was particularly hard-hit by the pandemic, leading him to need to find a completely unrelated job in a factory. Similarly, some participants were currently studying at the language school despite having earned a higher degree at one of the Japanese universities with offerings in English, because they felt their lack of Japanese proficiency was too large of a barrier in finding a job otherwise.

Participants also mentioned their status as international students as something that exacerbated their concern about not being able to find a job or school placement. One Russian woman in her thirties explained her anxiety about having low chances compared to prospective job applicants who are Japanese:

Like I had some interviews, but also the Japanese were fired, and now they also try to find a job. [...] I think most companies, if they have like the same level candidates, Japanese and non-Japanese, they would prefer Japanese for obvious reason that they will not have problems in communication. [...] So competition became more fierce, less opportunities on top of that.

Thus, in addition to simply reducing the number of job openings, it appears that the pandemic increased students' anxiety by heightening awareness of the disadvantages of their status as foreigner nationals and/or non-fluent Japanese speakers.

Another factor which exacerbated this concern about being stuck in one's progress towards their goals was the limitations of online language learning, as at certain points during the pandemic all instruction was done remotely. Concerns regarding language learning may be more salient for language institute students, as university students are more likely to be studying in English, or already proficient in Japanese. Again, there were some differences in the issues experienced by students currently in Japan versus those waiting in their home countries. Although those waiting outside Japan technically had access to online classes, some of these students were not able to participate due to poor internet connectivity. As a result, they felt even more strongly that they were "wasting their time" while waiting for travel restrictions to be lifted. The students already in Japan also felt that they not progressing in Japanese, although internet connectivity was not an issue. One Mongolian man in his early twenties who was already in Japan when the pandemic started said:

When studying online from home, I couldn't talk to anyone directly, and I wasn't doing my homework properly. My Japanese didn't get much better. I couldn't have

conversations, so my speaking ability wouldn't improve. If I went to school to study, I could often talk to my teachers and friends. In my part-time job, I don't interact with people very much, or talk directly, so I started to forget words a bit.

On top of the issues that remote learning appears to cause generally, such as lack of focus and participation, it seems that online group classes are particularly prohibitive for language learning due to the importance of practice. Other participants likewise expressed that online language courses were simply no replacement for in-person classes, noting that communicating with the instructor and other students was much harder in the online format, and that neither the teachers nor the students were accustomed to online instruction due to the sudden nature of the switch.

#### *4.4.1.2 Running out*

In addition to reduced opportunities, which affected all job applicants regardless of nationality, there was another, unique source of stress for international students – the time limit on their student visa. Most participants, aside from those with other means of staying legally in Japan, such as a marriage visa, were only allowed to stay in Japan for the duration of their studies, unless they attended another school or found a job after graduating from the language institute.

Therefore, any stress caused from lack of opportunities was exacerbated by the issue of needing to find a job or school placement before they hit the time limit and were forced to leave the country. While some participants were more open to the possibility of leaving, others had specific goals which they believed would only be available to them in Japan, and/or felt that they

had “invested” time and money into their studies here and thus wanted to achieve something before leaving, as one man from Uzbekistan in his thirties expressed:

I came to Japan to reach some level with something and going back home would mean to me kind of defeat, you know. And I will say that, it's better for me to find a job here, to realize my potential here, and reach something here, and then go back, because I can go back to my country at any time.

The visa time limit was therefore said to be “the main concern” of international students, which functioned as a “constant clock ticking over the year.” As a result, many students considered taking alternate paths that would allow them a better chance of staying. For example, the aforementioned Russian student looking for a job explained how she thought of applying to a professional training college instead:

I considered to go into vocational school. Not only for visa, but also for learning. [...] But of course it requires N2 [level of Japanese]. But in summer, the [language proficiency] exams were cancelled. [...] So really before the immigration announced the extension, I was already thinking like, maybe we won't make it. Maybe we will have to go back. Of course, from the beginning, I knew that it's not guaranteed that everything will work out, but like November [2020] I was preparing myself for the worst.

As can be seen from this anecdote, consequences of the pandemic such as cancelled exams became even more serious problems for international students due to the encroaching time limit. Thankfully, according to this participant, an extension to student visas was announced in late 2020, after which her anxiety was considerably relieved.

Apart from the visa time limit, some participants were worried about their ability to stay in Japan because of the financial impact of the pandemic. Multiple participants mentioned losing their part-time work because of the pandemic, such as a woman in her thirties from Myanmar:

And then because the hotel that I'm working is shut down. So, my income goes down, [from] like around 90,000 yen per month, but it goes down to only 35,000 yen. I just really worried, plus, I need to partially pay the tuition fees. So then it's kind of stressful.

Again, although employment opportunities were reduced for everyone as a result of the pandemic, international students were somewhat disproportionately affected because many tended to find work in negatively impacted industries like tourism. This is another aspect of the pandemic that may have influenced these specific international students more strongly than others – for example, international students in the United States are not permitted to work outside of their host institution, so they may be less affected by changes to the larger labor market in terms of part-time employment during their studies.

#### *4.4.1.3 Isolation and loneliness*

Loneliness is a common issue for international students even outside of the pandemic context (Sawir et al., 2008). Furthermore, isolation has been identified as a common psychological concern in the research already conducted on the negative emotional effects of the pandemic (Palgi et al., 2020). Therefore, it was unsurprising that loneliness was another factor exacerbating stress for these participants during the pandemic experience, but some features of this isolation may be fairly unique to the situation of international students. In addition to the negative impact of remote instruction for the technical aspects of language learning, multiple

participants also expressed sadness at not being able to fully appreciate their life in Japan, with many mentioning their desire to spend time with friends and family and travel the country. One Chinese man in his thirties explained the impact of giving up travel:

Before, I have traveled from Hokkaido to Okinawa. It was a very good experience to see the unique places, unique food, very attractive places in Japan, but for now, it's just every day I stay in my own house. Only do the video talk with my parents and my family. So yeah, I cannot kill the feeling [of sadness].

Although none of the participants were in Japan primarily for travel, many of them mentioned that travel was an important hobby for them. Thus the restrictions on tourism had the effect of removing one of their usual sources of stress relief.

Further, the fact that almost all participants were in a different country from their friends and family made visiting virtually impossible, and communication more challenging. For example, some participants had partners or family members who were planning to join them in Japan, who were still unable to enter the country at the time of the interviews. The over-reliance on online communication, moreover, was particularly stressful for people whose families were not proficient with technology, such as this man's family in the Philippines:

Japan is super far from the Philippines, and right now not everyone can use the internet so I have to be patient. [...] My mother isn't very good with smartphones and computers, so I have to think about whether she'll be able to use them even if I contact her. [...] But it can't be helped, I can't do anything about that now.



In addition, what further heightened anxiety about communication (or lack thereof) with far-away family members was the COVID-19 pandemic itself. Most participants did not indicate worry about catching the virus themselves. On the other hand, many were worried about their friends or family being affected back in their home countries. One female Sri Lankan student in her thirties said:

Actually, I never thought that I will get COVID and then die in Japan. I never bother about that. I bothered about what will happen back in my country, like what will happen for my mother and my sisters if they go out.

Furthermore, although thankfully such instances appeared to be rare, participants mentioned cases of feeling alienated and discriminated against due to their foreigner status. The aforementioned student from Myanmar described her experience with xenophobia while studying at a rural university prior to enrolling at the language school:

Maybe the very beginning, maybe five students from [the university], they test positive, then you know, there is a kind of discrimination there. Because if they, if they like for example at a salon there is a notice if you're [university] student then we don't give a haircut to you or that kind of stuff. And also the part time workplace. They no longer hiring the [university] students.

This anecdote indicates that the status of being an international student was erroneously linked by some of the Japanese populace with being at higher risk. Unlike the anti-Asian sentiment found in the United States (e.g. Koo & Nyunt, 2022), discrimination in Japan during the pandemic appeared to have been directed towards foreign nationals in general.

#### 4.4.1.4 *No stress*

There were some participants who indicated that the pandemic had not brought about a higher level of stress in their lives. For example, one Vietnamese woman in her twenties whose husband was working in Japan said:

I'm lucky because my husband is working and we don't have any financial problems. So to be honest, I'm not really worried now about the future. But maybe, once I will have graduated from the Japanese language school, I will have more worries about finding a job.

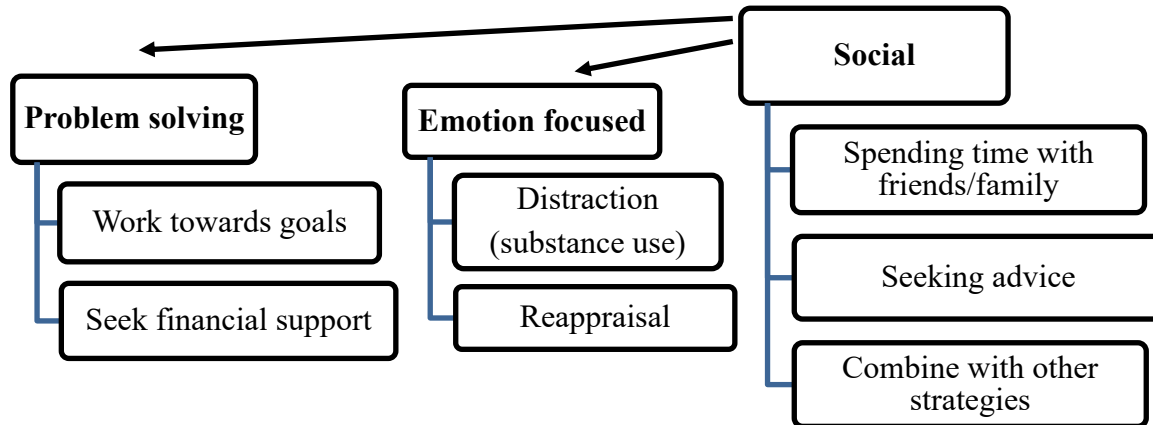
Although strong conclusions cannot be drawn about the difference between people who did and did not experience stress as a result of the pandemic, one possibility is that some participants were less stressed due to having more certainty in their lives with regard to their current situation and next steps – being employed or having an employed spouse, having been accepted to a university program, and so on. As such, these participants did not have to worry about the immediate consequences of the pandemic that occurred for others, such as losing their job or having to leave the country.

#### 4.4.2 Emotion regulation strategies

The three overarching categories found with regard to the strategies international students used to manage their stress were “problem solving strategies” “emotion focused strategies,” and “social strategies” (see Figure 4.2.). However, these categories were not mutually exclusive, and as such the overlap between these strategies will also be discussed.

**Figure 4.2**

*Emotion regulation strategies used by international students in Japan during COVID-19*



##### 4.4.2.1 Problem solving strategies

When asked how they dealt with emotional distress, some participants immediately mentioned engaging in activities that would in some way or another contribute to their goals, such as working on their Japanese language ability, or working on their job applications. The Indonesian student looking for employment explained that his way of dealing with stress was to continue doing what he could to progress in his job search:

For job searching, my teachers this term were very kind and thorough, and helped me. Me personally, when COVID calmed down I interviewed with a lot of companies, attended offline events, and looked up a lot of information.

Other problem-focused strategies included seeking out financial support from government agencies, although the availability of such resources depended entirely on location within Japan. The aforementioned man from Uzbekistan, who had been studying at a university in another prefecture, mentioned that his international friends received such assistance from their municipality:

I know other friends who went there saying that they don't have money and they lost their jobs because of pandemic and what to do. [...] I think the condition for such kind of support was if you lost your job, or your income decreased, like 30% or 20%, you could apply. So, I know that many students applied, they could get like 200,000 yen once.

The few participants who mentioned receiving such assistance stated that the support made a big difference, and expressed surprise and gratitude that international students were eligible. However, this kind of financial support from municipal governments was limited to specific locations. No participants mentioned government assistance from Kanagawa prefecture of the city of Yokohama that the language institute was located in.

#### *4.4.2.2 Emotion focused strategies*

Many participants mentioned using strategies that directly influenced their emotions, as opposed to changing the situation. For example, the Chinese woman who was stuck in her home

countries and waiting for travel restrictions to be lifted mentioned that “crying it out” was useful, as well as seeking out the latest information on the pandemic:

In my case, I read the newspaper every day, and collected information on when I might be able to come. That gave me hope and relieved my stress. But if it turned out that I wouldn't be able to come, that method would've been pointless.

She expressed awareness that her strategy was limited in practical utility, suggesting understanding that other strategies may have been more effective if available. However, for the case of students like her who were stuck due to international travel restrictions, problem-solving approaches to emotion regulation would likely have been next to impossible.

Several other emotion focused strategies mentioned by participants fell under the category of “distraction.” *Distraction* strategies were any that involved getting one's mind off of their worries by engaging in other, typically more pleasant activities. Distracting activities that were commonly brought up were walking outdoors, eating food and sweets, and watching movies or videos.

Distraction strategies also included substance use. One Thai man in his twenties mentioned that he drank alcohol before sleeping so he would not “remember the hard things in life.” However, he also mentioned that drinking alone was “a little lonely” and that he preferred to drink with friends, but could not. Others discussed smoking tobacco as a way of calming themselves down or to “cope with boredom.” However, many of these participants were doubtful of the usefulness of drinking alone and/or at home in improving their mood, with one saying that “you should drink because you're already happy, have more fun, and I think that if you drink

when you're sad, you will only become more sad.” This quote is quite revealing with regard to alcohol expectancies, as this participant seems to view alcohol as something that enhances existing emotional states, not something that can be expected to change negativity to positivity.

Overall, participants pointed out that distraction strategies were useful as a temporary “boosts,” but believed they would not be “efficient in the long run.” Distraction via substance use, for instance, seemed to be viewed as a strategy to be engaged in if other options were not available to them.

Another type of emotion focused strategies was *reappraisal*, which refers to how people change the way they think about a situation in order to feel better. For example, a young Chinese man who was struggling to find a job in Japan said that focusing on the coming end of the pandemic, rather than its continuation, helped improve his outlook:

Actually, I feel more hopeful than anxious now. The effect of COVID will eventually stop growing. If I’m able to hold out until then, there’ll be hope.

Interestingly, although the passage of time was a source of stress for many students because of the visa time limit, this participant was able to come to an alternate view of the same process by focusing on how the pandemic situation would gradually improve. Other participants also mentioned focusing on the future beyond the pandemic in order to improve their mood.

Another Chinese woman, who was stuck in her home country for many months, said that thinking about the positive aspects of the situation made her feel better, such as the fact that the pandemic created an opportunity for her to spend time with her family:

When I was in China, it couldn't be helped that I couldn't go to Japan. It was difficult to get a visa. There's a saying that I like for those kind of times. "Good and bad come in waves." Something may be bad, but if you look at it another way, there's likely something good about it. I try to relieve my sadness by remembering these words. For example, although I wasn't able to go to Japan when I wanted because of COVID, I got to live with my family. And I was able to experience the passing of the seasons in my hometown.

This quote implies that her strategy of trying to focus on the positives of the situation was helpful specifically because nothing else could be done about travel restrictions. This is consistent with research on emotion regulation showing that strategies should be used flexibly depending on the context – in this case, cognitive reappraisal was appropriate because the situation was relatively uncontrollable.

#### *4.4.2.3 Social strategies*

Seeking out support from friends and family was a common strategy mentioned by participants. Further, many participants identified social strategies as being the most effective in combatting negative emotions, with one participant insisting that "people need to talk. Yeah, we are social animals. Everyday you need to talk with someone no matter you like or not. And talk will help a lot." A woman from Sri Lanka discussed how she would chat with a group of international friends in order to deal with her stress:

We have a group of friends just sharing our thoughts, sadnesses, [...] we just talk to each other, and then share to get the advice, or to give advice, and the others to make us happy by sharing things.

For many participants such as this woman, simply sharing experiences and thoughts was useful in improving mood and motivation. Moreover, it appeared that socialization was also linked to other strategies, and improved them in the eyes of several participants. For example, a Chinese man in his twenties who was struggling to find a job said that his strategy for feeling better was to seek reassurance from his online friends:

I get to talk to people who understand how I think. And if they're the same, that means that the things I can't do isn't because of me, it's because objectively, that's how the situation is. They tell me that it's not my fault. And then I'm able to accept that.

Like this man, other participants mentioned that getting outside perspectives was more convincing and motivational than trying to decide on a course of action alone. Similarly, some participants discussed how communicating in a group was helpful in solving problems, because “if the person is different, their words are different, and their way of thinking of is different.” For example, one participant noted that they would have “different [online] gatherings [...] to solve different kinds of problems.”

Socialization was also connected with distraction strategies. In particular, participants mentioned eating and drinking with friends at restaurants as one activity that would be particularly beneficial for mental health, that was not possible due to the pandemic. One young



man pointed out that this smoking with coworkers allowed him to interact more with his Japanese coworkers at his part-time job:

Most of the Japanese people at my workplace smoke, so we smoke together after work.

But alone is fine as well. We can't drink together because of COVID, so I sometimes buy a can [of beer etc.] at the convenience store before going home.

This anecdote suggests that substance use in moderation could be linked with more socialization, particularly given that smoking and drinking are often part of the culture in many, though not all, Japanese workplaces. Even in an online context, one Nepali participant even discussed how he holds virtual “drinking parties” with his friends and family back home, in which everyone would drink while chatting via video conference, as a continuation of their social and cultural practices back home.

Nepal was going through a lot too, so I talked to my friends. We can't fix things just by thinking about the bad parts, so we did a lot of video parties. I video chatted my family and friends in Nepal with my wife, and we would drink, talk about interesting stories, like stuff that happened in the past. [...] People in Nepal always drink alcohol when they get together. This is because it makes you feel good. We drink whenever we do anything.

Japan's mostly the same. If you drink, you can have good conversations and laugh.

The anecdote reveals that from this participant sees drinking as something that is fundamentally embedded into social events in Nepal, to the extent that alcohol is necessary even in online settings.

Regardless of the availability and reach of online communication, however, many participants mentioned that purely online communication was severely deficient compared to spending time with loved ones face-to-face, with one participant suggesting that texting and calling have “30% of the function” of in-person contact. Some participants also said that they were resistant to reaching out to friends and family back home because they did not want to cause unnecessary worry. Therefore, although socialization was perceived by participants to be one of, if not the most effective strategies to improve mood, it was also severely hampered by the pandemic situation that reduced all in-person contact.

## 4.5 Discussion

The present study is, to the best of the authors' knowledge, the first known examination of stressors and emotion regulation strategies for international students in Japan during the pandemic, as well as one of the few studies to examine this particular subset of international students in general. Some of the causes of stress according to these students were: feeling stuck in their progress to their goals, running out of time and money, and isolation. Students managed their negative emotions with a variety of strategies, including problem solving approaches, emotion focused approaches like distraction and reappraisal, and socializing. Social interaction was believed by many participants to be the most effective in reducing negative emotions, and was often combined with other types of strategies, but participants noted that the socializing was made much more difficult by the pandemic.

The results had much overlap with the barriers to wellbeing identified by the international students in the United States examined in other recent studies, which included limited social interaction, lack of opportunities to advance their career and studies, uncertainty about policy changes, and awareness of racial/cultural identity. (Koo & Nyunt, 2022; Zhang et al., 2022). There were some differences, notably that the participants in the present study did not experience issues with healthcare, and while xenophobic discrimination was noted, it was not brought up as a major source of stress for the majority of participants. These differences illustrate the diversity in the experiences of international students, although it is unclear whether the differences are due to the location (United States or Japan), type of educational institution (university or language institute), or a combination of the two.

All of these studies corroborate the possibility, however, that some commonly cited social and academic issues faced by international students – namely, language ability and acculturation – were not actually perceived as major barriers to wellbeing or sources of stress during the pandemic. Although they were worried about their inability to learn Japanese as effectively or quickly as they would have liked, the participants in the current study did not cite day-to-day communication in Japanese as a source of stress, despite the fact that many were not yet proficient in the language. Similarly, these participants did not find navigating cultural differences to be a major issue.

There are a few possibilities why this might be. First, it may be that the policies set in response to the pandemic, such as social distancing, created a situation in which adapting to the host country's culture was not an urgent matter, because isolation was the default state of affairs. In other words, the students did not have enough opportunities to clash culturally with their peers during the pandemic to start feeling acculturative stress. On the other hand, finding a means of staying in the country – getting a job or being accepted to a school – became a particularly pressing issue that needed to be resolved quickly. That is to say, perhaps factors like language proficiency and acculturation became less salient when international students' lives became unstable, and securing their visa status became their immediate concern. If this is the case, it may be the case that stressors like lack of language proficiency will become more significant again once the pandemic's effects on travel and immigration policy have subsided. Lastly, it is also possible that some of the disparate findings are due to students at language institutes being qualitatively different from university students. For example, as students at language institutes are not expected to be fluent in Japanese when they start their studies, they may not experience

the same level of anxiety faced by international students in universities, who are expected to be more or less as proficient at Japanese as their domestic peers.

Another finding of note was the extent to which social support was believed to be the most effective way of regulating emotion. There was a high degree of awareness that social interaction was healthy, and that other strategies such as distraction only had benefit in the short-term, which are conclusions generally supported by the research on emotion regulation strategies (Gross, 2002). The limited nature of online communication was thus a particularly significant barrier to stress management for these students, as that was their sole method of contacting family members for months or even years. It was interesting that while the currently available technology enabled more means of communication and even allowed for some ongoing education, the pandemic also highlighted how limited it is in certain endeavors such as teaching language.

The importance of socializing, furthermore, extended to the effectiveness of other emotion regulation strategies, such as distraction. In particular, the implications of substance use as an emotion regulation approach seemed to differ greatly depending on whether participants were talking about drinking or smoking alone, versus with a group. When alone, drinking or smoking was used as a method of distraction from unpleasant emotions, whereas when in a group, these behaviors were reported to be facilitators for better social interaction.

#### **4.5.1 Implications**

The present study highlights some of the ways in which international students are particularly vulnerable to the mental health effects of emergency situations due to their isolation and precarious legal status among other factors. These findings have implications for how the

wellbeing of international students, and the effectiveness of their education, might be improved on institutional and policy levels.

In emergency situations such as the pandemic, flexible policies around immigration would help ensure that international students are able to make returns on their investment (and the investment of the host country) by participating in the host country's workforce after the emergency has subsided, and in terms of mental health, would do much to mitigate international students' primary source of anxiety, which is the possibility of having to leave the country before they achieve their goals. While having to leave the country is likely to be a concern for most international students, it is particularly significant with regard to students who are plan on staying in the host country, as opposed to those who are mainly there for a temporary experience.

The pandemic has also revealed the limitations of remote learning for the international student experience. While schools can work to provide better online classes and events, there may be fundamental limitations to online communication in certain contexts like language learning. If so, efforts may be better spent to ensure that students are cultivating relationships with their peers and other locals in non-emergency times, to make sure they have support networks in place when another emergency situation occurs.

#### **4.5.2 Limitations and future directions**

The present study examines a fairly specific sub-population of international students in Japan. Although the overlap in results with other studies on international students suggests some similarities between these students and other types of international students, caution should be made when generalizing across countries or institutional types. For example, the fact that the

students interviewed for this study were all planning to stay in Japan after their studies is a noteworthy difference from international students in many other institutions.

Furthermore, participants were selected based on teacher referrals, which potentially biased the sample towards students who were perceived by teachers as being more successful or personable, and away from students who were in more marginal positions in the school. Effort should be made in future studies to interview international students regardless of their proximity to faculty members, for example by advertising via flyers.

With regard to interview methodology, a limitation of the interview protocol used in this research was that it focused on self-initiated, individual strategies for coping in emergency situations. Social policies, such as visa stay limits and government welfare, were brought up organically by participants but were unfortunately not explored in more depth or uniformly across participants. Future studies should incorporate questions about institutional support that was offered or received.

While the present study gives a glimpse into the lives of international students at Japanese language institutes during the pandemic situation, it remains unclear how these students differ from other types of international students during non-emergency situations. Future work should examine the stressors and emotion regulation strategies of language institute students outside of the pandemic context to determine if and how the pandemic disrupted their normative experience.

## **CHAPTER 5**

### **Conclusion**

#### **5.1 Overall discussion**

The three papers presented above explored emotion regulation strategies among different races/ethnicities and cultural contexts, with an emphasis on substance use. The findings most relevant to this topic are as follows:

An examination of rates of alcohol use among Asian Americans and non-Hispanic White Americans showed that the relationship between social anxiety and alcohol use may be different between the two groups. Specifically, it appears that Asian Americans without any social anxiety drink less alcohol per week than white Americans, and are less likely to develop an Alcohol Use Disorder. However, Asian Americans who are shy (but not to the extent of having a disorder) drink at similar levels to white Americans, and Asian Americans with Social Anxiety Disorder are about as likely to develop an Alcohol Use Disorder as white Americans. Thus, examining drinking and shyness at sub-clinical levels revealed more nuance to the relationship between racial/ethnic background, drinking behaviors, and social anxiety.

An analysis of data from a randomized controlled trial of a work-related cognitive behavioral therapy program for unemployed individuals with social anxiety found that each of



the substances examined – alcohol, tobacco, and cannabis – were associated with different risk factors. With regards to race and ethnicity, it was found that identifying as Black was a protective factor against low-risk tobacco use, and identifying as Hispanic was associated with low-risk alcohol use. While further research is needed to understand why this is the case, these findings reflect the importance of looking at specific substances and how they are used, or the beliefs associated with them, in their socio-cultural context, rather than trying to understand substance use as a monolithic behavior.

Finally, a qualitative investigation of stressors during the COVID-19 pandemic found that international students in Japan used a range of strategies to manage their negative emotions, one of which was substance use. However, only a few participants mentioned drinking or smoking alone as a way of reducing their anxiety or boredom, and many seemed aware that it was not a healthy coping mechanism. Multiple participants mentioned that drinking and/or smoking was, or would be, more effective if they were able to partake in such activities with friends or coworkers, because of the substance’s positive effect on socializing. In the context of a situation in which isolation is a significant issue, substance use may serve as an opportunity to increase social contact, even if it is potentially harmful as an individual coping mechanism.

### **5.1.1 Implications**

Overall, these findings show that on one hand, using substances to control emotions is common around the world, although not universal, but on the other hand, there are differences in preference for emotion regulation across cultures, and this variation may extend to substance use. Not only are there cultural differences in the availability and accessibility of various substances, there is a case to be made that culture shapes the expectations about their effects and usefulness.

There was an overarching trend, for instance, of greater drinking among those with social anxiety from relatively collectivistic cultures, such as people with Asian and Hispanic backgrounds in the United States. While past research in this area has investigated and found cultural differences in expectancies (e.g. Shell, Newman, & Qu, 2009), this has not yet led to alcohol expectancy questionnaires being updated to be more generalized and reflective of more than just Western culture, even when used in diverse samples. These findings add further evidence that the traditional conception of alcohol expectancies are inadequate to capture subtle nuances in the beliefs people hold about alcohol around the world.

With regard to theories on substance use as emotion regulation, this work adds to the motivational model of alcohol use and the theory of alcohol expectancies by demonstrating the significance of context. The traditional conceptions of the motivational model or the expectancies theory do not completely account for the situation in which the substance use occurs, which may be another factor influencing beliefs about the substance, as well as how strongly the substance impacts the user. An example of a situational factor that is not yet formally incorporated into existing models of alcohol use is the presence of other people. It remains unclear how individual beliefs would interact with these contextual factors. For example, if an individual's primary motive to drink is to cope with their negative feelings, would it make a difference whether they are alone, with others physically, or communicating with others remotely? Does it matter whether this takes place during a period in which social contact is exceedingly rare, such as the pandemic?

This work also has important implications for social work practitioners, especially considering that emotion regulation deficits are known to be relevant to the development and

treatment of mental health disorders (Berking & Wupperman, 2012). The present research further adds to the growing consensus within emotion regulation research that strategies should be used flexibly and appropriately depending on the person and situation (Aldao, Sheppes, & Gross, 2015). This work substantiates the necessity of cultural humility when engaging in social work practice related to mental health. While no single practitioner can be reasonably expected to be familiar with the customs and beliefs associated with health and wellbeing in every culture, the present research reinforces the notion that there are many unspoken assumptions that actually differ substantially around the world. This is particularly important for practitioners working with members of a community's minorities, as their presentation of mental health issues may not match what is generally expected.

The need for nuanced understanding extends to the case of substance use as an emotion regulations strategy. While substance use is understandably viewed as a risky behavior, these findings suggest that mental health practitioners must consider how a client's substance use interacts with their specific circumstances and goals. For example, if a client feels that they are able to participate in social events due to substance use, the relative benefit of this behavior on their wellbeing must be taken into account as well as the potential negative effects on their health. On one hand, the participant could be using substances in a responsible way; on the other, they could have issues with social anxiety that will fail to be addressed if they continue relying on substances in social situations.

Likewise, although public health initiatives generally aim to reduce substance use, it may be necessary to consider the impact of regulating behaviors related to substance use on socialization. This is particularly salient given the recency of the COVID-19 pandemic that led

several countries including the United States and Japan to implement measures to reduce outdoor dining and other such social activities. Although the exact impact of social distancing policies is still in the process of being investigated, it seems clear that loneliness was a problem for many during the pandemic, and these consequences (alongside the benefits of social distancing for safety) should be weighed against the potential benefits and risks of allowing gatherings for eating and drinking (Gubler et al., 2021).

### **5.1.2 Limitations**

The overall approach of combining studies with a range of methodologies and target populations has its advantages, as it provides a broad picture of the phenomenon of substance use as emotion regulation. Thus, it was possible to deduce that this behavior is present in diverse populations and situations, but also that there are some nuanced differences in aspects such as the substance of choice, and the extent to which substance use is associated with socializing. However, a limitation of examining different populations is that it makes it difficult to reach more in-depth conclusions about any given group. Beyond demographic differences, one major way in which the samples differ from one another is whether they are from the general population (papers 1 and 3) or already at high risk for substance use (paper 2). Again, while using a range of samples is a way to demonstrate the universality and variations in substance use as an emotion regulation strategy, this led to issues such as the study of international students in Japan not providing as much information on substance use as on other emotion regulation strategies, because the sample was not selected for solely studying substance use.

Another limitation of these studies as a whole is that each relies on some form of self-reported, retrospectively collected data, although both qualitative and quantitative analytic

methods were used. While the use of self-report is common when studying emotion regulation strategies, participants are liable to have biased memories of how often they use each strategy and how effective they are. Therefore, studies using naturalistic observation or higher frequency data collection could complement these studies by providing more accurate measures of actual emotion regulation strategy use. Further, two of the studies were based on secondary survey data, meaning that ideal survey items were not always available within the data, and only correlational analyses were possible.

In addition, while a range of substances were examined, the theoretical frameworks for this research – namely, alcohol expectancies and the motivational model of alcohol use – were explicitly developed to study drinking behaviors, although they have since been applied to other substances like marijuana (e.g. Neighbors, Geisner, & Lee, 2008). Caution is needed in extending these frameworks to other substances, as the ubiquity of alcohol makes it somewhat unique in nature to illicit substances and the like. Indeed, the results of the present studies suggest that there would be different expectancies and motives depending on the type of substance involved, although it is possible that the motivational process is similar regardless of substance, but involve different associated beliefs.

### **5.1.3 Future directions**

Given that a major limitation of this work is its broadness, future studies on the use of substances to regulate emotion should examine these populations in more fine-grained detail, such as by separating Asian Americans by country of origin, which has a large impact on substance use practices, or by comparing international students during the COVID-19 pandemic versus after the pandemic. Both quantitative and qualitative approaches should be used in this

work, in order to provide a comprehensive understanding of substance use as emotion regulation strategy both from the perspective of people within specific cultural contexts, as well as a more distanced perspective comparing multiple cultures.

In terms of theory, an interesting direction to take this research may be to develop the motivational model of substance use to better understand how context and culture interplay with motive. Much like how other emotion regulation strategies are more effective when they are selected flexibly, it is possible that when the mode of substance use selected is appropriate given the motive and situation, it becomes more effective as a strategy. As research on drinking motives use global measures of a person's general drinking motives, as opposed to motives for drinking in a given scenario, it remains unclear whether people with certain motives were drinking in such a way that suited their goals and situation. Therefore, a study that uses experience sampling or daily diaries to map the link between specific types of drinking (in a group, in a party, alone, etc.) with motives could be useful in understanding the mechanisms leading to better or worse outcomes. This could be combined with a cross-cultural analysis, given that some motives are found to be more effective and/or associated with better outcomes for some cultures but not others (Wicki et al., 2017).

In terms of practice and policy, it would be pertinent to further examine harm reduction approaches that would lead to safer substance consumption in social settings. While such interventions would not necessarily address all forms of problematic substance use, they would be particularly useful in situations where social drinking is common and often unsafe, such as college settings, as rates of alcohol-related problems are higher during college than any other developmental stage in life (Patrick & Schulenberg, 2011). One example of a harm reduction

intervention that could be used in this context is Protective Behavioral Strategies (PBS), referring to behaviors that are intended to reduce the negative consequences that can occur when drinking, rather than preventing alcohol use altogether (Martens et al., 2005). These include behaviors such as limiting the number of drinks and assigning a designated driver. However, there is still little research on PBS across cultures, and as it is important in PBS to teach strategies that are appropriate for an individual's specific drinking motives, future research should examine what strategies are most effective across a range of countries with distinct drinking cultures.

#### **5.1.4 Conclusion**

As with all other emotion regulation strategies, substance use – while risky – appears to be a better fit for some situations than others. Its appropriateness as a strategy may depend partially on culture, which impacts the availability of substances as well as the beliefs people tend to hold about them. Other contextual factors that should be examined are type of substance and the social nature of the situation. Given the large role that substances continue to play in society today, rather than dismissing it as an unhealthy strategy, future work should evaluate substance use as an emotion regulation strategy with nuance.

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