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**IDENTITY DENIAL AND FOOD CHOICE: DO CHINESE AMERICANS  
REASSERT THEIR AMERICAN IDENTITY THROUGH FOOD?**

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IDENTITY DENIAL AND FOOD CHOICE: DO CHINESE AMERICANS REASSERT  
THEIR AMERICAN IDENTITY THROUGH FOOD?

A dissertation submitted in partial fulfillment  
of the requirements for the degree of

DOCTOR OF PHILOSOPHY

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DEPARTMENT OF PSYCHOLOGY

of

ST JOHN'S COLLEGE OF LIBERAL ARTS AND SCIENCES

at

ST. JOHN'S UNIVERSITY

New York

by

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## **ABSTRACT**

### **IDENTITY DENIAL AND FOOD CHOICE: DO CHINESE AMERICANS REASSERT THEIR AMERICAN IDENTITY THROUGH FOOD?**

Shelagh Mahbubani

Food choice is impacted by a variety of different factors, including cultural, social and socioeconomic (Chen & Antonelli, 2020; Contento, 2008; Rozin, 2015). Food choice has a major impact on an individual's health, and research has shown an association between the prototypical "American diet" and an increased risk for health conditions such as hypertension, diabetes, and stroke (Liu et al., 2020). One important social factor that can influence food choice is the desire to appear as a prototypical member of a social group (Cruwys et al., 2012). For example, when an individual's social identity is questioned (identity threat), they may be more likely to eat foods consumed by the "in-group" (Bosson et al., 2009; Guendelman et al., 2011). However, previous research investigating the role of identity threat on food choice only included Asian American college students from Washington state (Guendelman et al., 2011). The present study filled a gap in the literature by experimentally testing the impact of American identity denial on food choice in Chinese-American adults from across the U.S., the largest subgroup of Asian-Americans. Participants were randomly placed in one of two conditions – one in which American identity denial was made salient before being presented with a menu of food options and one in which food options were presented first. When participants viewed the food menu, they were asked to report their preference

and their daily consumption of American and Chinese dishes. Preference and daily consumption of American versus Chinese food did not differ between the American identity denial and control conditions. However, compared to participants born in the U.S., participants who were not born in the U.S. found prototypical American food to be less appealing than prototypical Chinese food. Participants who endorsed cultural food security were also less likely to eat American food daily than Chinese food. These findings suggest that both generational status and cultural food security are important factors for food choice in the Chinese-American population, with important implications for designing health interventions targeted to this population.

## **ACKNOWLEDGEMENTS**

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## INTRODUCTION

### Food Choice

In the U.S., obesity is one of the most pressing public health issues (NHLBI, 2013). According to the Centers for Disease Control and Prevention, 42.4% of adults in the U.S. are obese, with a BMI of 30 or higher (Arroyo-Johnson & Mincey, 2016).

Obesity is a concern because it raises the risk of numerous health problems including hypertension, stroke, coronary heart disease, and a variety of cancers (NHLBI, 2013).

Food choice, particularly high consumption of energy dense food and low consumption of high fiber foods, has been linked to obesity risk (Brug, 2008). Specifically, consuming a diet high in sugar-sweetened foods and beverages, fast foods, refined grains, and processed meats is associated with a higher risk of obesity (Ambrosini, 2014). Conversely, a diet high in vegetables, fruits, and whole grains; moderate in dairy products; low in meats; and low in sugar-sweetened foods, beverages, and refined grains is associated with a lower risk of obesity (Nutrition Evidence Library, 2014).

Across age groups, most Americans regularly eat foods associated with a higher risk of obesity. In a recent study of diet trends among children aged 2-19 years, 54.4% of children had poor diet quality based on consumption of total fruits and vegetables, whole grains, fish and shellfish, sugar-sweetened beverages, and sodium (Liu et al., 2020). Similarly, American men reported insufficient intake of fruits and vegetables and excessive consumption of empty calories (Millen et al., 2005). At the population level, the majority of children and nearly all adults living in the U.S. consume less than the recommended amount of fruits and vegetables (Krebs-Smith et al., 2010). The

“American” diet is overall defined by consumption that increases disease risk (Nutrition Evidence Library, 2014).

Immigrants to the U.S. develop unhealthier diets as a result of their immigration (Alidu & Grunfeld, 2018). The longer immigrants spend in the U.S., the more they increase their consumption of empty calories such as sugar-sweetened food and beverages (Alidu & Grunfeld, 2018). Even with an increase in socioeconomic status over time, Hispanic immigrants who first arrive in the U.S. eat considerably healthier diets than their descendants (Ayala et al., 2008; Riosmena et al., 2015). Generally, more acculturated later generation descendants of immigrants consume higher amounts of saturated fat, sugar-sweetened foods and beverages, processed foods, and sodium (Allen et al., 2007; Popkin & Udry, 1998). Later generations also consume less fruits, vegetables, and whole grains (Allen et al., 2007; Popkin & Udry, 1998). Therefore, immigration to the U.S. or being a descendant of an immigrant to the U.S. poses a serious risk for an unhealthy diet and future health problems.

While the diet of immigrants becomes unhealthier both in terms of increased empty calorie consumption and decreased fruit and vegetable consumption, the mechanism explaining this association is not well understood. Food choice is determined by a host of factors, as food serves as more than just a biological necessity (P.-J. Chen & Antonelli, 2020; Shepherd, 1999). These factors may be established early in life through biological predispositions and experiences with food as young children (P.-J. Chen & Antonelli, 2020; Contento, 2008). Importantly, factors influencing food choice may also change over time, such as accessibility to food as well as social or cultural influences (Chen & Antonelli, 2020; Contento, 2008). Food accessibility and the social and cultural

landscape are likely mechanisms that help account for the dramatic changes in immigrants' diets once they move to the U.S.

### **Accessibility and Culture**

Accessibility to food is impacted by a variety of socioeconomic and environmental factors. One major factor influencing accessibility is food security, defined as when people “have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life” (Shaw & Clay, 1998). In the most recent survey on food insecurity from the U.S. Department of Agriculture (USDA), 10.5% (13.8 million) of households in the U.S. were classified as food insecure (Coleman-Jensen et al., 2020). Nearly all food insecure households (98%) reported worrying that their food would run out before they got money to buy more (Coleman-Jensen et al., 2020). Similarly, 96% reported that an adult in the household had cut the size of a meal or skipped a meal because there was not enough money for food (Coleman-Jensen et al., 2020).

Food insecurity in the U.S. varies by ethnic group, although research on this issue is not comprehensive as the USDA annual reports on food insecurity only consider four ethnic categories: White, Black, Hispanic, and Other (Coleman-Jensen et al., 2020). However, food insecurity was found to be higher among immigrant households in the U.S. compared to non-immigrant households due to lack of financial resources (Maynard et al., 2019). Similarly, a recent study on Asian-Americans in California found that food insecurity was present among all Asian-American groups, particularly among households that did not speak English at home (Becerra et al., 2018). Therefore, food insecurity is a

major public health concern in the U.S., including for first generation and later generation Asian-American households.

While environmental and socioeconomic barriers to food security have been well studied, cultural barriers are underrepresented in the literature (Alonso et al., 2018). Thus, many food security and nutrition interventions have failed as a result of not taking culture into consideration (Alonso et al., 2018). For instance, a program in Micronesia aimed at increasing vitamin A consumption failed because it promoted the consumption of leafy vegetables that were seen as only appropriate for animal feed (Englberger, 2012). A small body of recent research has focused on the impact of cultural food insecurity, defined as not having access to traditional cultural foods (Power, 2008; Alonso et al., 2018). Qualitative research on the subject has found that cultural food insecurity is related to anxiety and depression in American university students (Wright et al., 2021a, 2021b). Interviews with refugees have also revealed that lack of access to cultural foods has a negative impact on nutritional status (Hadley et al., 2007). Overall, lack of access to cultural foods is major determinant of food choice that could negate the influence of other social and cultural factors.

Beyond accessibility issues, cultural influences also play a major role in food choice. Indeed, some theorize that all food choices are inherently cultural, and it is impossible to separate any one food decision from the surrounding cultural landscape (Rozin, 2015). Cooking and eating are important means of communication, social cohesion, identity affirmation, and cultural preservation for many people around the world. Although psychological research on this area is sparse, research done by the fields of anthropology and sociology reveal the important intertwining of culture and food for

many around the world. For instance, immigrant Goan Indians in Canada shared that not eating Goan food felt like not eating food at all (D'Sylva & Beagan, 2011). Eating traditional Goan food imparted a sense of 'home' and belonging (D'Sylva & Beagan, 2011). Interviews with different racial groups in Singapore revealed a blurring of cultural boundaries with food (Reddy & van Dam, 2020). Food functioned as a means of communication that helped to define and maintain a national identity as Singaporean, rather than as a specific racial group (Reddy & van Dam, 2020). A review on food choice in Chinese individuals, both immigrants and mainlanders, found a variety of principles underlying food choice (Wang-Chen et al., 2022). These were (1) the principles of traditional Chinese medicine; (2) determination of healthiness (e.g., food freshness); (3) desire to maintain social and familial harmony; and (4) environmental factors (Wang-Chen et al., 2022). This research highlights the importance of cultural factors in food choice and reinforces that people base their food choices on many factors besides basic biological necessity. Accessibility to food generally is of great importance, however accessibility to cultural foods might be of equal importance to both psychological and physical health.

### **Social Identity**

While individual cultural identity clearly influences food choice, empirical research on how it does so within a psychological framework is lacking. Therefore, the present study will be exploring the potential impact of identity on food choice, particularly the role of cultural identity within the theoretical framework of social identity theory. Social identity theory assumes that every person has social identities distinct from a personal identity. Social identities are the parts of the self that are defined by belonging

to social groups, the “group in the individual” (Abrams & Hogg, 1988). A social group is made up of people who share a common identification or view themselves as part of the same social category, such as the same ethnic group or the same sports club (Stets & Burke, 2000). Individuals categorize themselves and others as belonging to certain social groups, a process called social categorization (Trepte & Loy, 2017; Turner, 1999). These categorizations of both the self and others enable faster information processing during social interaction (Trepte & Loy, 2017). Social identity theory further posits that individuals view their own social identities as ‘in-groups’ while others are viewed as ‘out-groups’ (Brown, 2000). This leads to in-group bias as individuals want to maintain their membership with their own social identities. The theory posits that maintaining this membership through their choices leads to increased self-esteem (Brown, 2000).

An individual can carry multiple social identities within them, such as gender, age, school affiliation, socioeconomic status, music preference, nationality, and cultural affiliation (Turner et al., 1994). Individuals can vary in how strongly they identify with each social identity (Trepte, 2006). Social identities can also vary in how salient they are across situations and contexts. Depending on the situation, different identities could become more or less salient and subsequently influence behavior (Trepte, 2006; Trepte, 2017). For example, a teenager would behave differently going to lunch with an adult than they would going to lunch with a peer, as different parts of their identity (e.g., child vs. friend) had been made salient.

Practically, social identity has many consequences in terms of attitudes and behavior. For instance, research shows that consumers prefer media, such as music or tv shows, that refers to the social groups they belong to (Trepte, 2006). This applies across



social identities such as gender, age, nationality, and culture (Treppe, 2006). Social identity salience can also influence political attitudes. One experiment looked at the impact of identity salience on the political views of U.S. college students (Reid, 2012). First, students were asked about their political party affiliation and then assigned to one of three salience conditions (control vs. political identity salient vs. American identity salient). Students were then given a questionnaire to rate how biased a piece of media was towards the political parties. When political identity was made salient by introducing the questionnaire as gauging views of American politics, students perceived media as more biased than the control condition. However, when American identity was made salient by introducing the questionnaire as gauging views of American media and international media such as Al-Jazeera, students perceived media as less biased than the control condition (Reid, 2012).

How individuals self-categorize in terms of social identity can also significantly impact their health decisions (Haslam et al., 2009). Older adults who were primed to identity as “elderly people” were much more likely to think that they suffered from hearing loss and required a hearing aid, independent of actual hearing capability (Claire & He, 2009). In another study, students who were training to become physical education (‘PE’) teachers were primed to either primarily identify in terms of a ‘PE’ social identity or a ‘gender’ social identity (Levine & Reicher, 1996). The female students who had the ‘PE’ social identity made salient rather than the ‘gender’ social identity were more likely to endorse seeking medical help for a possible injury (Levine & Reicher, 1996). Thus, identity salience can strongly influence perceptions and health decisions in a variety of ways.

## **Identity Denial**

In addition to identity being made salient to oneself, identity can also be made salient to others (Turner et al., 1987). Whether others see an individual as part of a social group is defined by how prototypically presenting that individual is (Turner et al., 1987). Prototypical is defined as to what extent the individual matches the characteristics associated with a social group (Turner et al., 1987). When individuals do not match the prototype of the group, their identity can be questioned or denied by members of their own in-group, a form of social identity threat originally termed acceptance threat (Branscombe et al., 1999), but more recently coined identity denial (Cheryan & Monin, 2005).

Identity denial as a term describes the phenomena of others denying an individual's identity, not the individual denying their own identity (Cheryan & Monin, 2005). For instance, an individual who holds the social identity of Chinese would experience identity denial if another Chinese identifying person denied that individual's Chinese identity. When adults experience identity denial, they often reassert their identity in a few different ways to appear more like a prototypical in-group member (Cheryan & Monin, 2005; Schmitt & Branscombe, 2001). Individuals may reassert their identities by changing their attitudes, preferences, and behaviors (Bosson et al., 2009; Branscombe et al., 1999; Cheryan & Monin, 2005; Jetten et al., 2003; Maass et al., 2003; Tafarodi et al., 2002). This has been shown to hold for denial to a variety of identities, including cultural identity. For instance, Asian-Americans who were told they were not American rated their participation in prototypically American activities (e.g., playing American sports,

listening to American music) as higher than those who had not experienced the identity denial (Cheryan & Monin, 2005).

Around the world, research on immigrants to anglosphere countries has found that immigrants' self-perception of their identity does not match the perceptions of those around them (Lalonde et al., 1992; Moghaddam et al., 1987; Van Oudenhoven et al., 1998). Iranian, Indian, and Haitian immigrants in Canada strongly identify with being Canadian, however other White Canadians do not identify them as Canadian (Lalonde et al., 1992; Moghaddam et al., 1987). The same discrepancy has been found in studies of Moroccans and Turkish immigrants in the Netherlands (Van Oudenhoven et al., 1998).

Consistent with studies of other immigrant populations, Asian-Americans are consistently rated as looking less American than White Americans (Cheryan & Monin, 2005). Asian-Americans do not differ in their self-ratings of nationalism from White Americans, nor do they differ on measures of implicit national identity (Devos & Banaji, 2005; Sidanius et al., 1997). However, Asian-Americans do experience denial of their American identity at a rate higher than other ethnic groups in America (Cheryan & Monin, 2005). Asian-Americans were more likely to report denial of their American identity, including being mislabeled as a non-English speaker or being from a different country, than White Americans and Black Americans (Cheryan & Monin, 2005).

Response to American identity denial by Asian-Americans has been shown to be influenced by generational status (Wang et al., 2013). First generation Asian-Americans who had moved to the US after the age of 5 who were shown scenarios where individuals had their American identity denied reported significantly less anger than second generation plus Asian-Americans. They also reported feeling significantly less offended

(Wang et al., 2013). While the impact of American identity denial appears to be stronger with later generation immigrants, no studies have looked at the impact of generational difference on behavioral outcomes.

### **Food Choice and Social Identity**

Social identity has been found to influence food choice in a few ways. For instance, modeling of eating behavior is more pronounced when individuals perceive themselves to be of the same in-group as another (Cruwys et al., 2015). University students who had their university affiliation made salient modeled their eating after an in-group university student confederate but not after an out-group confederate (Cruwys et al., 2012). Individuals will also more frequently model their eating after a prototypical in-group member, rather than someone who does not appear prototypical (Cruwys et al., 2015). In a study on fruit intake, researchers found that participants' reported fruit intake was dependent on whether eating fruit was presented as a majority or minority norm (Stok et al., 2012). Furthermore, individuals will eat in the opposite manner from the eating norm of an undesirable out-group member (Berger & Heath, 2008; Oyserman et al., 2007). Undergraduate students picking food in a public setting were less likely to choose junk food if it was associated with being an out-group member (Berger & Heath, 2008). Having a certain identity made salient can also influence food choice. In another study, participants from the Southern U.S. who had their regional identity made salient were more likely to prefer Southern foods than those who did not have that social identity made salient (Hackel et al., 2018).

Although the association between identity denial and food choice has not been extensively studied, Guendelman et al. (2011) found that Asian-American college

students who had their American identity denied by being asked if they spoke English were significantly more likely to choose prototypically American foods as their favorite foods than those who did not experience identity denial. Additionally, Asian-Americans who experienced identity denial through being told they were not American were significantly more likely to pick prototypically American foods from a menu than those who did not (Guendelman et al., 2011). While there have only been two studies on American identity denial and food choice, the literature on social identity and food choice overall demonstrates that the food decisions of adults are heavily dependent on their own and other's perceptions of their identity.

## PRESENT STUDY

The present study aims to better understand the association between denial of American identity and food choice in Chinese Americans. As health is impacted by food choice (Brug, 2008), there is value in understanding the mechanisms that underly it. How identity denial impacts food choice has been examined by previous studies, with all of them finding that identity denial led to reassertion of the denied identity through food choice (Guendelman, 2011; Hackel et al., 2018). Particularly, Asian-Americans reasserted their American identity by picking more American food dishes from a menu (Guendelman et al., 2011). This dissertation study expands on previous literature in several important ways. Firstly, previous studies have examined Asian-Americans as a homogenous group when Asian-Americans are highly culturally heterogenous as they come from many different countries (Hune, 2002; U.S. Census Bureau, 2020). For instance, the dishes eaten in an Korean-American family are fundamentally different in composition than the dishes eaten in an Indian-American family (McLean, 2015). Therefore, this study will focus on Chinese Americans, who are at higher risk of developing BMI related health issues than other ethnic groups (Chen & Hu, 2014).

Secondly, previous studies have examined food choice by asking participants their preferences for both prototypical American dishes and Asian-American dishes pulled from restaurant menus in the U.S. (Guendelman et al., 2011). As there is considerable diversity in dishes across Asia and how they are interpreted by American restaurants, this study will instead offer participants a list of prototypical Chinese dishes taken from the eight primary cuisines of China. Thirdly, research indicates that second generation plus Asian-Americans express more anger at American identity denial

scenarios than first generation Asian-Americans (Wang et al., 2013). However, no studies have examined whether generational difference would lead to differences in identity reassertion. Thus, this study will contribute to the literature by examining whether the association between American identity denial and food choice is moderated by generational status. Finally, similar to general food insecurity (Becerra et al., 2018), cultural food insecurity is likely to be a key accessibility factor influencing food choice following American identity denial in Chinese-Americans. This study is the first to investigate how cultural food insecurity impacts food choice in the presence of American identity denial.

### **Research Questions**

Research Question 1: Does denial of Chinese Americans' American identity make them more likely to rate prototypical American food as more appealing than prototypical Chinese food?

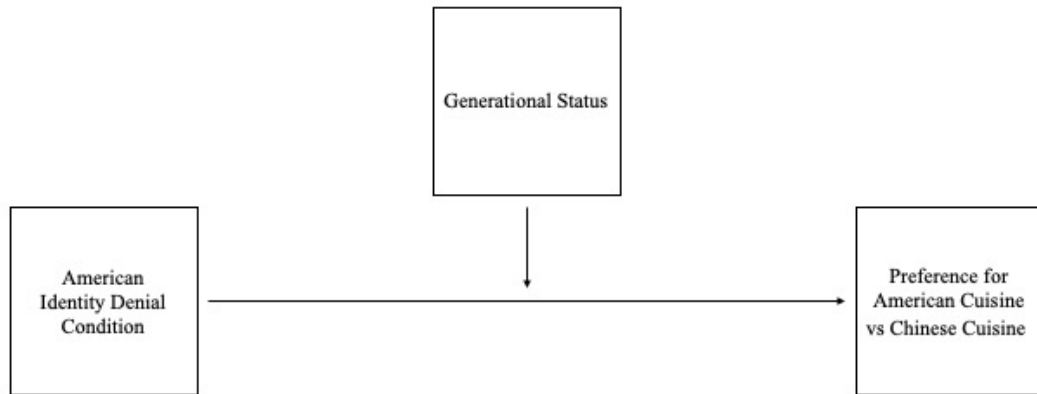
Hypothesis 1: Chinese Americans experiencing denial of their American identity will rate prototypical American food as more appealing than prototypical Chinese food.

Research Question 2: Is the association between American identity denial and overall appeal of prototypical American and Chinese foods moderated by the generational status of the individual (Figure 1)?

Hypothesis 2: American identity denial will only be associated with rating prototypical American food as more appealing compared to prototypical Chinese food in second plus generation Chinese Americans and not first-generation Chinese Americans.

**Figure 1**

*Illustration of Hypothesis 2*



*Note.* American Identity Denial Condition (0 = Identity Denial Questions Asked First, 1 = Food Items Asked First); Generational Status (0 = Born in the U.S. or immigrated under five, 1 = Born outside the U.S); Preference for American Food vs Chinese Food (Difference between Means of preference for American food vs Chinese food).

Research Question 3: Does denial of Chinese Americans' American identity increase the likelihood of eating prototypical American food rather than prototypical Chinese food in their daily life?

Hypothesis 3: Chinese Americans experiencing identity denial of their American identity will endorse greater likelihood of eating prototypical American food rather than prototypical Chinese food in their daily life.

Research Question 4: Is the association between American identity denial and likelihood of eating prototypical American and Chinese foods moderated by the



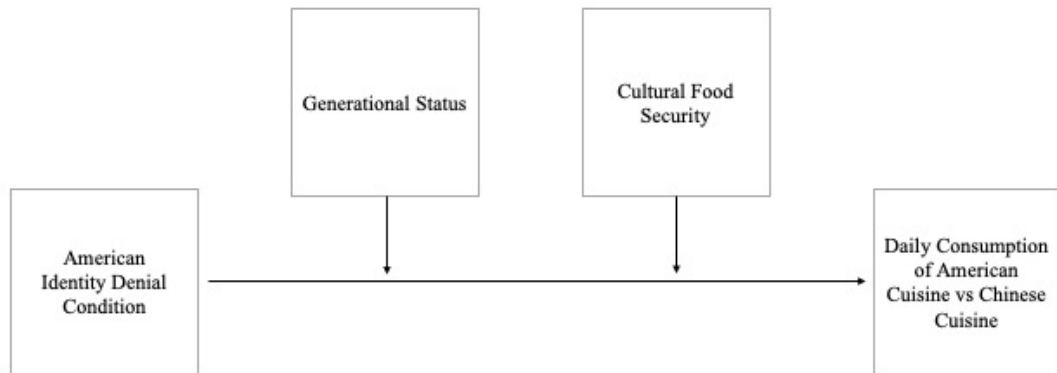
generational status of the individual and cultural food security in Chinese Americans (Figure 2)?

Hypothesis 4a: American identity denial will be associated with a greater likelihood of eating prototypical American food rather than prototypical Chinese foods in the daily life of second plus generation Chinese Americans and not in first generation Chinese Americans.

Hypothesis 4b: American identity denial will be associated with greater likelihood of eating prototypical American food in daily life compared to prototypical Chinese food in Chinese Americans not experiencing cultural food insecurity. However, American identity denial will not be associated with greater likelihood of eating either prototypical American or Chinese foods in daily life in Chinese Americans experiencing cultural food insecurity.

**Figure 2**

*Illustration of Hypotheses 4a and 4b*



*Note.* American Identity Denial Condition (0 = Identity Denial Questions Asked First, 1 = Food Items Asked First); Generational Status (0 = Born in the US or immigrated under five, 1 = Born outside the US); Cultural Food Security (0 = Culturally Food Insecure, 1 = Culturally Food Secure); Daily Consumption of American Food vs Chinese Food (Difference between Means of daily consumption of American food vs Chinese food).

## METHODS

### Participants and Recruitment

Participants included adults ages 18 years and older who live in the U.S., identify as Chinese American, and are fluent in English. To determine study eligibility, participants were asked about their age, U.S. residency, Chinese American identity status, and English fluency at the beginning of the study (Appendix A). Participants were recruited through the firm Centiment (<https://www.centiment.co/>). According to a power analysis conducted in G\*Power (Faul et al., 2007; Faul et al., 2009), the sample size needed to achieve at least 80% power at an alpha of .05 for the primary study aims was 110. Data were collected from an additional 20 participants to account for possible data issues that might result in the need to discard participants, resulting in a final sample of 130 Chinese American adults. The final sample of participants was relatively evenly split by gender (49% Female) with a Mean age of 45.08 years (SD = 17.67). More than half of the sample had completed a bachelor's degree (62%) and the majority of the sample identified as second generation plus (70%) (Table 1).

### Study Protocol

Study questionnaires were administered online via Qualtrics (Qualtrics, Provo, UT). Following informed consent, participants who met eligibility criteria were randomly assigned to one of two conditions that differed in the salience of American identity denial. In the experimental condition, denial of American identity was made salient by asking participants to report on their identity denial experiences *before* answering questions about food choices. In the control condition, participants reported on their American identity denial experiences *after* answering questions about food choices. In

previous research using the identity denial measure, participants reported that they would experience high levels of negative emotions if they were to experience the identity denial scenarios (Wang et al., 2013). All participants completed questionnaires about food accessibility and demographic characteristics at the end of the study. Centiment compensated participants monetarily for their time. The St. John's University Institutional Review Board approved the study (IRB-FY2023-93).

## **Measures**

### ***Identity Denial Measures***

To make denial of American identity salient, participants were asked to complete two identity denial measures (Appendix B). First, participants were shown two American identity denial scenarios developed by Wang et al. (2013) that have been associated with greater reports of anger in Asian-American adults compared to race-related scenarios without an identity denial component. The first scenario was “Imagine that you have just given your first presentation for a class. The professor gives feedback for all student presentations, and he asks whether English is your native language”. The second identity denial scenario was “Imagine that you are at a domestic (U.S.) airport food court ordering a meal. The cashier rings up your order, pauses, and asks ‘So where are you from?’.” These scenarios are based on previous work that found assuming an individual is from another country or does not speak English are both forms of identity denial (Cheryan & Monin, 2005; Park-Taylor et al., 2008). After each scenario, participants were asked “How often does this scenario occur in your life?” and “How angry would you be if you were in this scenario?”. Responses were recorded on a scale of 1 (*never or not at all*) to 7 (*always or extremely*). *Frequency of identity denial scenarios and anticipated anger in*

*response to identity denial scenarios* were calculated as the Mean of both items, with higher scores indicating greater frequency of identity denial experiences and anticipated anger in response to identity denial, respectively. The Means of participants' anticipated anger in response to identity denial in this study (First Generation  $M = 2.68$ ,  $SD = 1.62$ ; Second Generation Plus  $M = 3.39$ ,  $SD = 1.58$ ) were similar to those in the previous study by Wang et al., 2013 (First Generation  $M = 2.86$ ,  $SD = 1.71$ , Second Generation Plus  $M = 3.69$ ,  $SD = 1.93$ ).

*Identity denial in daily life* was based on Cheryan and Monin's (2005) conceptualization of identity denial and was assessed with a 10-item questionnaire asking about participants' experiences of American identity denial in daily life ( $\Omega = 0.93$ ) (Albuja et al., 2019). Questions included "How often are you misperceived as being not an English speaker?" and "How often are you told that you cannot identify as American?". Responses were scored on a scale of 1 (*never*) to 7 (*always*). The Mean of the 10 items was taken, with higher scores indicating a greater frequency of identity denial experiences. Responses to the questionnaire have been associated with poor psychological health including greater depressive symptoms (Albuja et al., 2019).

### ***Accessibility Measures***

To assess food accessibility, participants were asked to complete the U.S. Adult Food Security Survey Module (Coleman-Jensen & Nord, 2012) and the Cultural Food Security Inventory (Appendix C). The U.S. Adult Food Security Survey Module consists of ten items asking about food security in the last 12 months. Participants responded to three statements such as "I worried whether my food would run out before I got money to buy more" on a four-point Likert scale, including *Often true*, *Sometimes true*, *Never true*,

and *Don't Know*. If participants answered *Never true* or *Don't Know* to the first three questions, they did not experience food insecurity and received a score of 0. If participants answered *Often true* or *Sometimes true* to any one of the first three questions, they experienced food insecurity and were presented with the rest of the questionnaire. Participants who experienced food insecurity responded to five questions such as “In the last 12 months, did you ever cut the size of your meals or skip meals because there wasn't enough money for food?” with response options *Yes*, *No*, and *Don't Know*. For two of the questions, they were asked to report how often it happened, with responses of *Almost every month*, *Some months but not every month*, *Only 1 or 2 months*, and *Don't Know*. Responses were summed to get a total score of *Food Security*, with higher scores reflecting higher levels of food insecurity. The U.S. Adult Food Security Survey Module has been used annually in the U.S. to assess food insecurity prevalence (Cafiero et al., 2014) and has been demonstrated to have both good reliability and validity ( $\alpha = .856$ ) (Hamilton et al., 1997).

*Cultural Food Security* was measured by the Cultural Food Security Inventory; this questionnaire was designed for this dissertation study and consists of three questions that assess cultural food security. The three questions were based on the common themes of cultural food security identified in recent qualitative research, including the detrimental impact to psychological wellbeing of not being able to prepare or purchase foods that are identified with culture and family (Briones Alonso et al., 2018; Wright et al., 2021b). The questions are “Did you grow up eating Chinese foods?; Are you able to get access to the Chinese foods you ate as a child?; Does the food you eat on a daily basis reflect your Chinese heritage?”. Participants answered each question with a yes or no

response. Responses were recoded so that if a participant said yes to all three questions, they were classified as culturally food secure. If a participant said no to at least one question, they were classified as culturally food insecure. This measure intentionally included a question asking if participants grew up eating Chinese foods as to not assume that individuals growing up in the US would have been exposed to those foods.

### ***Food Choice Measure***

Participants were shown a menu with descriptions of prototypical dish options from American, Chinese, and Indian cuisines (Appendix D). Dishes from Indian cuisine were included to reduce bias and prevent participants from guessing the study hypothesis. Indian cuisine was chosen as the dishes are fundamentally different from both American and Chinese dishes, however most Americans are familiar with the cuisine (Jayasanker, 2007). Eight prototypical dishes were available from each cuisine.

The eight prototypical American dishes were taken from the American dishes chosen by Guendelman et al. (2011), as research has found that participants have rated these dishes as extremely American. The dishes are Bagel with topping, Hamburger and French Fries, BBQ Baby Back Ribs, Steak, Pizza, Grilled Salmon, Turkey Sandwich, and Spaghetti with Meatballs (Guendelman et al., 2011). For the Chinese dishes, one dish was taken from each of the eight major cuisines of Mainland China: *Huīcài*, *Yuècài*, *Mǐncài*, *Xiāngcài*, *Sūcài*, *Lǚcài*, *Chuāncài*, and *Zhècài* (King, 2020; Okumus et al., 2018). Research on the prevalence of regional food has found that these cuisines are prevalent in restaurants across all of Mainland China (Zhu et al., 2018). The dishes were Shrimp in Broth (*Huīcài*), Steamed Whole Fish (*Yuècài*), Three Cup Chicken (*Mǐncài*), Stir-Fried Pork Belly (*Xiāngcài*), Beef Dumplings (*Sūcài*), Four Joy Meatballs (*Lǚcài*), Dandan

Noodles (*Chuāncài*), and Red Cooked Pork (*Zhècài*) (Chen et al., 1983; Karpman & Stevens, 2020; Li & Ma, 2022; Okumus et al., 2018). These dishes were all intentionally picked as items that could be prepared at home, to account for regional differences in access to Chinese restaurants. The eight prototypical Indian dishes were taken from regions of India that share culinary similarity: North India, South India, East India, and West India (Dubey, 2010). These dishes were Rogan Josh and Kheer (North India), Urad Dal and Bengali Fish Curry (East India), Pani Puri and Pav Bhaaji (West India), and Keema Methi and Dosa (South India) (Dubey, 2010).

Participants were asked two questions about each dish. The first was “How appealing do you find this dish?”. Participants responded by rating between 1 (*not appealing*) and 10 (*extremely appealing*). For each participant, an average was calculated for all eight American dishes and Chinese dishes, separately. Then, the difference was taken between participants’ American dish average and Chinese dish average to calculate a score for *preference for American food versus Chinese food*. Positive difference scores indicated an overall preference for American food while negative difference scores indicated an overall preference for Chinese food. The second question was “How likely are you to eat this in your daily life?”. Participants were asked to answer by rating between 1 (*not at all*) to 10 (*extremely likely*). For each participant, an average was calculated for all eight American dishes and Chinese dishes, separately. Then, the difference was taken between participants’ American dish average and Chinese dish average to calculate a score for *daily consumption of American food versus Chinese food*. Positive difference scores indicated an overall likelihood of daily consumption of American food while negative difference scores indicated an overall likelihood of daily



consumption of Chinese food. Omega values were calculated for the scales of appeal of American food ( $\Omega = 0.83$ ), likelihood of daily eating American food ( $\Omega = 0.87$ ), appeal of Chinese food ( $\Omega = 0.90$ ), likelihood of daily eating Chinese food ( $\Omega = 0.90$ ), appeal of Indian food ( $\Omega = 0.88$ ), and likelihood of daily eating Indian food ( $\Omega = 0.92$ ).

### ***Demographic Measure***

Participants were given a demographic questionnaire (Appendix E) that included questions about age, gender, place of residency, years of residency in the U.S., education history, and generational status. Participants were asked which state they live in, if they live in an urban, suburban, or rural area, and their zip code. Participants were given the gender options of female, male, intersex, trans female, trans male, and non-binary.

Participants were asked about the highest level of education they have achieved (*Less than High School, Some High School, High School or Equivalent, Some College but No Degree, Associate Degree, College, Some Graduate School but No Degree, Graduate School*). These options were recoded for the analysis as Some College but No Degree and Below, Associate Degree or College, and Some Graduate School or Graduate School. This was dummy coded so that Associate Degree or College was the reference group because it was the largest sample size. To determine *generational status*, participants were asked if they were born in the U.S., and how old they were when they came to the U.S.. If participants were born in the U.S. or immigrated before the age of 5, they were coded as first generation (Wang et al., 2013). If participants came to the U.S. after the age of five, they were coded as second generation plus (Wang et al., 2013). Participants were asked to indicate how many years they have lived in the U.S., as length of residency has been associated with acculturation (Zhang & Tsai, 2014). To account for dietary

restrictions influencing food choice, participants were asked if they have any food allergies/dietary restrictions. Participants were also asked about hours worked per week and the number of fast-food restaurants and grocery stores in the neighborhood to control for the influence of these factors on food choice. Lastly, participants were asked if their ethnicity is obvious to others and if they have feared for their safety because of their ethnicity (*Fear for Safety*).

### **Analytic Plan**

All continuous study variables (Preference for American Food versus Chinese Food, Daily Consumption of American Food versus Chinese Food, Age, and Grocery Stores) were assessed for outliers beyond three standard deviations from the Mean and normality using skew and kurtosis. Outliers for preference for American food versus Chinese food (one outlier) and daily consumption of American food versus Chinese food (one outlier) were winsorized to three standard deviations above the Mean. All continuous study variables were normally distributed. Zero-order correlations were also examined among key study variables. To confirm that the randomization process was effective, t-tests and chi-square tests were performed to determine whether the two experimental conditions (American identity denial salient vs. not salient) differed in frequency of American identity denial, anticipated anger in response to American identity denial scenarios, American identity denial in daily life, age, years living in the U.S., generational status (first generation, second generation plus), gender (male, female), education level (no college degree, college degree, graduate degree), dietary restrictions (yes, no), food security (food secure, food insecure), number of grocery stores, number of fast food restaurants and fear for safety (yes, no).

Two sets of hierarchical regression analyses were performed to determine how the American identity denial condition relates to preference for American food versus Chinese food (Figure 1) and daily consumption of American food versus Chinese food (Figure 2). In the first hierarchical regression model with preference for American food versus Chinese food as the criterion variable, American identity denial condition (salient vs. not salient) was entered in block one, generational status was entered in block two (first generation vs. second generation plus), and the interaction between American identity denial condition and generational status was entered in block three. In the second hierarchical regression model with daily consumption of American Food versus Chinese food as the criterion variable, American identity denial condition (salient vs. not salient) was entered in block one and generational status and cultural food security (culturally food secure vs. insecure) were entered in block two. The two-way interactions between American identity denial condition with generational status and cultural food security were entered in block three. In both sets of models, the covariates age, education level, dietary restrictions, food security, grocery stores, and fear for safety were entered in block four. However, to achieve the most parsimonious model, interaction terms were removed from the model when not significant and instead, covariates were entered in block three. For interaction effects, the Aiken-West technique was used to determine the simple intercepts and simple slopes using the EMMEANS and GGEFFECTS R packages (Aiken & West, 1991; Lenth, 2023; Lüdtke, 2018). Number of fast food restaurants and years living in the U.S. were not included as covariates because they were significantly correlated with number of grocery stores ( $r = .47, p < .001$ ) and generational status ( $r = -.26, p < .001$ ), respectively. Nearly all participants reported that their ethnicity was

obvious to others ( $n = 118$ ) and therefore, this variable was excluded from the analysis due to insufficient cell size.

A series of exploratory analyses were conducted to test whether three different measures of American identity denial exposure (frequency of American identity denial scenarios, anticipated anger in response to American identity denial scenarios, American identity denial in daily life) were each associated with the criterion variables (preference for American food versus Chinese food, daily consumption of American food versus Chinese food) separately, while controlling for American identity denial condition (salient vs. not salient). In each hierarchical regression model, the measure of identity denial was entered into block one, generational status was entered into block two (first generation vs. second plus generation), the interaction between the measure of identity denial and generational status was entered in block three, and covariates age, education level, dietary restrictions, and food security were entered in block four. To achieve the most parsimonious model, the interaction term was removed from the model when not significant and instead, covariates were entered in block three.

## RESULTS

### Descriptive Analyses

Participants in the two experimental conditions (American identity denial salient vs. not salient) did not significantly differ in frequency of American identity denial, anticipated anger in response to American identity denial scenarios, American identity denial in daily life, age, years living in the U.S., generational status, gender, education level, dietary restrictions, food security, number of grocery stores, number of fast food restaurants and fear for safety ( $ps$  .12 – 1). Zero-order correlations between the key study variables are presented in Table 2. First-generation participants were more culturally food secure ( $r = 0.29, p < .001$ ), consumed less prototypical American food daily compared to Chinese food ( $r = -.22, p = .01$ ), and had less of a preference for prototypical American food compared to Chinese food ( $r = -.17, p = .05$ ) than second generation plus participants. Those who were culturally food secure had less of a preference for American food than Chinese food ( $r = -.24, p = .01$ ) and consumed less American food daily than Chinese food ( $r = -.22, p = .01$ ). Those who reported a fear for safety found American food less appealing ( $r = -.22, p = .01$ ). Furthermore, participants who were older were less food insecure ( $r = -.23, p = .01$ ). Surprisingly, the experimental condition was not correlated with either of the criterion variables ( $ps$  .50 – .51).

### Hierarchical Regression Results

#### *Model 1 – Association between American Identity Denial Condition, Generational Status, and Preference for American Food versus Chinese Food*

American identity denial condition was not associated with preference for American food versus Chinese food,  $R^2 = .01, F(1, 128) = 1.63, p = .20$  (Table 3).

However, there was a significant increment in  $R^2$  when generational status was added to the model with American identity denial condition,  $\Delta R^2 = .05$ ,  $F(2, 127) = 6.10$ ,  $p = .02$ . Chinese-American adults not born in the U.S. had less of a preference for American food than Chinese food compared to Chinese-American adults who were born in the U.S. or immigrated under the age of five years old,  $b = -.74$ ,  $t(127) = -2.47$ ,  $p = .02$ . However, generational status did not moderate the association between American identity denial condition and preference for American food versus Chinese food,  $\Delta R^2 = .01$ ,  $F(2, 126) = 1.28$ ,  $p = .26$ , and therefore, the interaction term was removed from the model. The effect of generational status on preference for American food versus Chinese food remained substantially the same when the covariates age, dietary restriction, food security, grocery stores, education level, and fear for safety were included in the model. Of the covariates, only fear for safety was significant, such that participants who reported fear for their safety had less preference for prototypical American food than Chinese food,  $b = -.90$ ,  $t(120) = -3.16$ ,  $p = .01$ .

***Model 2 – Association between American Identity Denial Condition, Generational Status, Cultural Food Security and Daily Consumption of American Food versus Chinese Food***

American identity denial condition was not associated with daily consumption of American food versus Chinese food,  $R^2 = .01$ ,  $F(1, 128) = 1.05$ ,  $p = .30$  (Table 4). However, there was a significant increment in  $R^2$  when Generational Status and Cultural Food Security were both added to the model with American identity denial condition,  $\Delta R^2 = .14$ ,  $F(2, 126) = 10.64$ ,  $p < .001$ . Chinese American adults not born in the U.S. were less likely to consume American food daily than Chinese food compared to

Chinese-American adults who were born in the U.S. or immigrated under the age of five years old,  $b = -.55$ ,  $t(126) = -2.07$ ,  $p = .04$ . In addition, Chinese-American adults with cultural food security were less likely to consume American food daily than Chinese food compared to Chinese-American adults without cultural food security  $b = -.85$ ,  $t(126) = -3.34$ ,  $p < .001$ . Generational Status and Cultural Food Security did not moderate the association between American identity denial condition and daily consumption of American food versus Chinese food,  $\Delta R^2 = .03$ ,  $F(2, 124) = 2.18$ ,  $p = .11$ . Interestingly, findings for generational status did not hold when the covariates age, dietary restriction, food security, grocery stores, safety fear, and education level were included in the model. Only findings for cultural food security remained significant,  $b = -.72$ ,  $t(119) = -2.75$ ,  $p = .006$ .

### **Exploratory Analyses**

A series of exploratory analyses were conducted to test whether three different measures of American identity denial (frequency of American identity denial scenarios, anticipated anger in response to American identity denial scenarios, American identity denial in daily life) were each associated with preference for American food versus Chinese food and daily consumption of American food versus Chinese food in separate models while controlling for identity denial condition (salient vs. not salient; Tables 5 - 10). Only frequency of American identity denial scenarios was associated with daily consumption of American food versus Chinese food. A greater frequency of the identity denial predicted decreased consumption of American food on a daily basis than Chinese food,  $b = -.21$ ,  $t(127) = -2.56$ ,  $p = .01$  (Table 8). This effect did not hold when adding in covariates,  $b = -.10$ ,  $t(119) = -1.08$ ,  $p = .28$ . Across all models, first generation

individuals were less likely to find American food appealing compared to Chinese food and less likely to eat American food on a daily basis relative to Chinese food when controlling for each measure of American identity denial ( $ps$  .003 - .037). Similarly, participants who reported fear for their safety had significantly less preference for prototypical American food than Chinese food ( $ps = .002-.003$ ). These effects held when controlling for each measure of identity denial and all other covariates.



## DISCUSSION

This study examined how salience of American identity denial in Chinese-American adults impacts their consumption and preference for American food, a diet that is associated with increased risk for obesity and related health conditions such as hypertension and stroke (Nutrition Evidence Library, 2014). While previous research has examined the association between identity denial and food choice in Asian-Americans, this is the first study of its kind to examine Chinese-Americans adults of a wide age range and provide them with prototypical Chinese food choices. In the present study, denial of American identity was not related to preference for prototypical American food or daily consumption of prototypical American food relative to prototypical Chinese food. However, first generation Chinese-American adults were less likely to prefer prototypical American food or consume it on a daily basis. Individuals with cultural food security were also less likely to consume prototypical American food on a daily basis. This is in accordance with previous literature that has found that later generations of immigrants are more likely to consume the prototypical “American diet” and hence have worse health outcomes (Alidu & Grunfeld, 2018).

Previous research has found that adults who experience identity denial will often reassert their identity through behavior to appear more like a prototypical in-group member (Cheryan & Monin, 2005; Schmitt & Branscombe, 2001). When certain characteristics of an individual’s identity are made salient, such as being reminded of their age or profession, they are more likely to behave in ways that fit those aspects of their identity (Claire & He, 2009; Levine & Reicher, 1996). Moreover, in Asian-Americans specifically, two studies found that college students (Mean age = 19.5 years)

who experienced denial of their American identity were significantly more likely to select prototypical American food than food from Asian-American restaurant menus (Guendelman et al., 2011). Surprisingly, this finding was not replicated in the present study. Instead, Chinese-American adults (Mean age = 45.08 years) who had American identity denial made salient did not rate prototypical American foods as more appealing or report consuming those foods more in daily life. One possible explanation for the null findings is that older adults may be less sensitive to the behavioral effects of identity denial than college-aged students. Although no research has investigated whether emerging adults are more sensitive to American identity denial than older adults, research suggests that college students are particularly sensitive to changing their behavior in response to peer pressure as compared to older adults, even those in their later twenties (Gardner & Steinberg, 2005; Morris et al., 2020). Peer pressure has been linked directly to health behaviors in college students, including alcohol consumption and drug usage (Borsari & Carey, 2001; Varela & Pritchard, 2011).

A second possible explanation for the null findings is that the present study collected data from adults who identified as Chinese-American, rather than Asian-American (Guendelman et al., 2011). In total, there are 19 different Asian origin demographic subgroups living in the U.S. (Budiman et al., 2019), with Chinese-Americans making up the largest subgroup at approximately 5.4 million people (Budiman et al., 2019). Asian Americans living in the U.S. exhibit considerable cultural heterogeneity, such as diversity in language and religions (Budiman et al., 2019). Chinese-Americans may be more homogenous as a group overall, which could make it more difficult to detect differences in food preferences or consumption. As Chinese-

Americans make up the largest subgroup of Asian-Americans in the U.S., it is possible that social support due to a larger community provides a buffering effect against the stressors of American identity denial. While it is clear from previous research that Asian-Americans as a whole do experience stress from identity denial (Wang et al., 2013), how this stress manifests behaviorally among the many different subgroups has not been considered in the research literature (Nicholson & Mei, 2020).

Finally, it is possible that the method used to induce American identity denial was not effective in the present study. In the present study, American identity denial was made salient by having adults read identity denial scenarios and answer questions about their experience of identity denial in everyday life. Studies that did find an effect of identity denial on food choice employed an *in vivo* experimental manipulation, with participants being directly told statements such as “Actually, you have to be an American to be in this study” (Guendelman et al., 2011). It is plausible that the salience of identity denial was stronger with the *in vivo* manipulation. However, research suggests that racist content online is also salient to the viewer, although how salient is dependent on how often they experience racist interactions in offline interactions (Williams et al., 2016). Although the salience of online content holds true for racist interactions, some of which include identity denial statements, it might not hold true for American identity denial generally.

While the American identity denial condition was not related to consumption and preference for American food relative to Chinese food, exploratory analyses revealed that frequency of exposure to the American identity denial scenarios predicted daily consumption of American food versus Chinese food. Specifically, adults who endorsed

more frequent American identity denial scenarios consumed more American food on a daily basis. This may be a function of demographics, as adults who experience less identity denial may live in areas that are more culturally diverse or have a greater proportion of Chinese Americans, which would explain both less frequent experiences of identity denial as well as an increased likelihood of eating prototypical Chinese food due to a greater access. Alternatively, due to the exploratory nature of this analysis, the association between frequency of identity denial and food consumption could be a spurious result. Future studies should explore whether frequent experiences of identity denial are associated with changes in food choice.

Although generational status did not moderate the association between the American identity denial condition and either of the outcomes, it was present as a main effect. First generation Chinese-American adults had less of a preference for American food compared to Chinese-American adults who were born in the U.S. or immigrated under the age of five years old. Furthermore, Chinese American adults born outside of the U.S. were less likely to consume prototypical American food daily compared to Chinese-American adults who were born in the U.S. or immigrated under the age of five years old. These findings are in line with previous research that showed recent immigrants were less vulnerable to identity denial than those born in the U.S. (Wang et al., 2012) and that individuals who immigrated to the U.S. at an older age are less likely to consider themselves culturally American (Wang et al., 2012). Taken as a whole, findings from the present study and previous research suggest that generational status may be one of the strongest influences on the appeal and daily consumption of American compared to Chinese foods.

As expected, Chinese-American adults with cultural food security were less likely to consume prototypical American food daily compared to Chinese-American adults without cultural food security. This finding suggests that cultural food security plays a large role in determining food choice, and that prototypical American food may not be the first choice for many Chinese-Americans. Further research is needed to explore to what degree food choice is determined by cultural food security.

Interestingly, participants who reported fearing for their safety because of their ethnicity found prototypical American food consistently *less* appealing in both the main and exploratory analyses. This suggests that fears for safety may negatively impact adults' desire to assimilate into mainstream culture through their food choice. Eating the prototypical food of a culture that has been threatening would possibly not increase a sense of safety. Furthermore, being threatened might increase the desire to eat cultural foods associated with childhood that would be considered comforting. While considered a "threat" in the literature, identity denial in previous research has triggered the opposite reaction (increased preference for American food), suggesting that these two forms of aggression (identity denial and threats to safety) operate very differently in adults.

### **Limitations, Strengths, and Future Directions**

This study presented with a number of limitations. First, this study did not perform an in vivo experimental manipulation and instead, made American identity denial salient through the use of identity denial scenarios and questionnaires, which may not have been as effective. Future studies should empirically test the effectiveness of eliciting identity denial in online studies. Second, the online nature of the study may have skewed the sample in favor of adults who spend a greater proportion of time at home,

which in turn, could decrease the likelihood of experiencing identity denial. Indeed, nearly one-third of adults in the sample reported working zero hours per week (31%). Relatedly, the present study was only conducted in English and as a result, a fair number of immigrants to the U.S. were excluded, thereby affecting the generalizability of findings. Future studies should consider collecting data from a more representative sample of individuals who work full time, as well as make the study available in a variety of Chinese languages (e.g. Mandarin, Cantonese).

Furthermore, the present study did not consider regional variation within the U.S.. Regions in the U.S. with a higher proportion of Asian-American groups, such as Hawaii (57%), California (18%), New York (10%), and Washington (12%), have a higher proportion of independent grocery providers that sell prototypical Asian-American goods (Powell et al., 2007; U.S. Census, 2020). Asian-Americans are not uniformly distributed across the U.S., and many states in the southern and midwestern U.S. have less than 5% of Asian-American residents (U.S. Census, 2020). Although number of grocery stores, food insecurity, and cultural food insecurity were accounted for in the present study, future studies should consider whether there are regional differences in the association between American identity denial and food choice.

Despite the limitations, there were also many strengths. First, the present study was the first to investigate the association between American identity denial, food choice, and food preference in Chinese-American adults. Future research could also examine the same questions with other Asian-American subgroups, such as Indian-Americans and Vietnamese-Americans. As Asian-Americans are not culturally homogenous, it is likely that there are variations in how different subgroups respond to identity denial and

variations in cultural food security. While it was a strength that this study looked at adults (vs. college students only), it is important for future research to consider how American identity denial operates in other age groups. For instance, adolescence is a period when individuals are both sensitive to peer pressure as well as developing their own food choices (Bassett et al., 2008; Andrews et al., 2021). Therefore, it would be important to examine how American identity denial relates to food choice during the important developmental period of adolescence and how it then impacts food choice later in life.

A further strength of this study is the collection of data on whether individuals fear for their safety due to their ethnicity. Previous research on American identity denial and food choice did not account for fear for safety even though incidents of hate crimes may cause individuals to have a different relationship to identity denial. This is particularly important for Asian-Americans who experienced increased discrimination during the COVID-19 pandemic (Ruiz et al., 2020; Strassle et al., 2022). It is possible that increased discrimination during the COVID-19 pandemic altered Chinese-Americans relationship to their American identities – the increase of safety threats might not make them want to try to assimilate into mainstream culture the same way that it did prior to the pandemic, lessening the impact of American identity denial. Threats to physical safety could lessen the desire to belong due to anger at being threatened by the mainstream culture. Future research could consider how fears for safety impacts the desire for assimilation, especially as compared to identity denial. Given that all prior research was conducted prior to the COVID-19 pandemic, future research overall could examine more closely the link between safety fears, anger, discrimination reports, American identity denial, and changes in behaviors such as food choice.

A final strength of this study is that it is the only study on identity denial that sampled Chinese-American adults from across the US. Previous research was limited to Asian-American college students in Washington state (Guendelman et al., 2011). This poses the question of whether immigrant groups in other countries experience identity denial in a similar way. There is research suggesting that immigrants to other countries view themselves as identifying strongly with their adopted country (Lalonde et al., 1992; Moghaddam et al., 1987; Van Oudenhoven et al., 1998). Thus, it is possible that they would experience identity denial as a threat. However, the degree to which national identity is tied to food and eating behavior is likely to vary depending on the culture. For instance, previous research examining cultural influence on food choice has found that Europeans view the sensory attributes of food as most important in making food choices while Japanese individuals value cost (Djekic et al., 2021; Freedman, 2016; Januszewska et al., 2011). Hence, it is likely that there is cultural variation in how identity denial impacts eating behaviors.

### **Clinical Implications**

This research has several clinical implications. Firstly, this research highlights the importance of generational status in how Chinese-Americans experience eating. This is a crucial component in delivering culturally competent care to individuals with eating disorders such as anorexia nervosa, bulimia, and avoidant restrictive food intake. Currently, treatments for these disorders do not factor in how an individual's identity could interact with their eating, as the vast majority of the treatment literature is based on white western females of high socioeconomic status (Huryk et al., 2021; Reyes-Rodríguez & Franko, 2020; Smart, 2009).



Eating disorder treatment could be tailored to the individual depending on their generational status. Asking a recent immigrant to adhere to a prototypically American menu during their recovery would likely not be as effective as working to design a menu of food prototypical to their culture in line with culturally competent care (Acle et al., 2021). Our findings also suggest that there may be differences in how family members approach eating due to their differing immigration status. A parent who immigrated as an adult is likely to have different food preferences than their child who was born in the U.S. This could also cause conflict within families, as parents are the ones preparing the food for children in family-based eating disorder treatment (Rienecke & Le Grange, 2022). These findings also raise the importance of considering cultural food security in designing clinical interventions. Currently, the cultural food security of patients is not assessed during intervention (Rienecke & Le Grange, 2022). Our research suggests that this should be an initial part of the assessment when working with patients and families on eating concerns. Further studying these dynamics to help clinicians better tailor interventions would be beneficial.

Lastly, this research also has implications for interventions targeting obesity as immigrants to the U.S. develop worse diets the longer that they stay in the country (Alidu & Grunfeld, 2018). Our findings about the impact of generational status on food choices suggests that preference for a more prototypical, and subsequently unhealthy, American diet is tied to generational status. Research into obesity intervention from around the world suggests that the most successful programs adapt to the cultural needs of the specific population (Lindberg et al., 2012; Wallia et al., 2014). However, current research on cultural adaptation of obesity interventions has considered minority groups to be

homogenous aside from gender, and differences within these groups have not been considered (Lindberg et al., 2012; Wallia et al., 2014). This study has demonstrated the importance of tailoring intervention to generational status within minority groups. Our work has shown that first generation immigrants are much less likely to be tempted by the American diet than their progeny. Intervention programs should take these differences into account when working with Chinese-Americans. For instance, a first generation Chinese-American immigrant might respond well to an intervention that helped them restore health through cultural food security, while their child would need help navigating the process of maintaining a healthy diet while consuming prototypical American foods.

## **Conclusion**

Identity denial has been shown to be a psychological stressor that leads to behavioral consequences. As the first study of its kind on Chinese-Americans, this study contributes to the small but growing body of research on how this social threat could possibly impact individuals' food choices. Although we found no main effects of the online experimental manipulation, we did find that both generational status and safety fears contribute to how appealing participants found prototypical American food. Furthermore, both generational status and cultural food security contribute to how likely individuals are to eat American food on a daily basis. These findings have important implications for interventions in both mental and physical health.

**Table 1***Demographics Characteristics*

Demographic characteristic	Mean (SD) or N (%)
Age	45.08 (17.67)
Gender	
Female	64 (49%)
Male	65 (50%)
Transmale	1 (1%)
Education Level	
Some College but No Degree and Below	36 (28%)
Associates Degree or College	64 (49%)
Some Graduate School or Graduate School	30 (23%)
Generational Status	
First generation	39 (30%)
Second generation plus	91 (70%)
Food Security	
Food Secure	82 (63%)
Food Insecure	48 (37%)
Cultural Food Security	
Culturally Food Secure	82 (63%)
Culturally Food Insecure	48 (37%)
Dietary Restrictions	
Has Dietary Restrictions	17 (13%)
No Dietary Restrictions	113 (87%)
Hours of Work per Week	23.28 (19.74)
Year Living in the U.S.	37.62 (18.18)
Number of Grocery Stores	3.94 (2.43)
Number of Fast Food Restaurants	5.48 (5.11)
Appear Asian	
Yes	118 (91%)
No	12 (9%)
Fear for Safety	
Yes	57 (44%)
No	73 (56%)

*Note.* N = 130

**Table 2***Correlations*

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1. Identity Denial Condition	1.00										
2. Preference for American Food	.06	1.00									
3. Daily Consumption	.06	.60	1.00								
4. Generational Status	0.00	-.17*	-.22*	1.00							
5. Cultural Food Security	-.03	-.24*	-.22*		1.00						
6. Age	-.02	.02	.01	.29***	.24	.03	1.00				
7. Education	-.06	-.13	-.16	.15	.10	.14	1.00				
8. Dietary Restrictions	.05	.01	.08	-.10	-.13	-.07	-.07	1.00			
9. Food Security	0.00	-.02	-.06	-.05	-.12	.23	-.15	.16	1.00		
10. Grocery	-.06	-.13	-.19	.09	.16	.03	.26	-.07	-.07	1.00	
11. Fear for Safety	.11	-.22*	-.07	-.07	.16	-.19	.06	.16	.05	.14	1.00

*Note.* . \* $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .  $N = 130$ . American Identity Denial Condition (0 = Identity Denial Questions Asked First, 1 = Food Items Asked First); Generational Status (0 = Born in the US or immigrated under five, 1 = Born outside the US); Cultural Food Security (0 = Culturally Food Insecure, 1 = Culturally Food Secure); Dietary Restrictions (0 = No, 1 = Yes); Food Security (0 = Food Secure, 1 = Food Insecure); Fear for Safety (0 = No, 1 = Yes).

**Table 3***Regression Coefficients from Hierarchical Linear Regression Models for Model 1*

	Preference for American Food versus Chinese Food					
	<i>b</i>	SE	<i>t</i>	R <sup>2</sup>	ΔR <sup>2</sup>	F for ΔR <sup>2</sup>
Block 1						
Intercept	.23	.19	1.19	.01		1.63 (1, 128)
Identity Denial Condition	.36	.28	1.28			
Block 2						
Intercept	.45	.21	2.16*	.06*	.05*	6.10 (2, 127)
Identity Denial Condition	.36	.28	1.30			
Generational Status	-.74	.30	-2.47*			
Block 3						
Intercept	.35	.22	1.59	.07*	.01	1.28 (2, 126)
Identity Denial Condition	.56	.33	1.71			
Generational Status	-.43	.41	-1.04			
Identity Denial Condition by Generational Status	-.68	.60	-1.13			
Block 4						
Intercept	.99	.30	3.28**	.20**	.13	2.70 (2, 120)
Identity Denial Condition	.40	.27	1.50			
Generational Status	-.76	.30	-2.49*			
Age	.01	.01	.68			
Dietary Restrictions	.09	.40	.22			
Food Security	-	.29	-.01			
Some Graduate School or Graduate School	.003					
Some Graduate School or Graduate School	-.65	.35	-1.87			
Some College but No Degree and Below	-.07	.32	-.22			
Fear for Safety	-.90	.28	-			3.16**
Grocery Stores	-.06	.06	-1.03			

*Note.* \* $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .  $N = 130$ . American Identity Denial Condition (0 = Identity Denial Questions Asked First, 1 = Food Items Asked First); Generational Status (0 = Born in the US or immigrated under five, 1 = Born outside the US); Cultural Food Security (0 = Culturally Food Insecure, 1 = Culturally Food Secure); Dietary Restrictions (0 = No, 1 = Yes); Food Security (0 = Food Secure, 1 = Food Insecure); Fear for Safety (0 = No, 1 = Yes).

**Table 4***Regression Coefficients from Hierarchical Linear Regression Models for Model 2*

	Daily Consumption of American Food versus Chinese Food					
	<i>b</i>	SE	<i>t</i>	R <sup>2</sup>	ΔR <sup>2</sup>	F for ΔR <sup>2</sup>
Block 1						
Intercept	.43	.17	2.49*	.01		1.05 (1,128)
Identity Denial Condition	.26	.25	1.02			
Block 2						
Intercept	1.14	.26	5.04***	.15**	.14***	10.64 (2, 126)
Identity Denial Condition	.24	.23	1.00			
Generational Status	-.55	.27	-2.07*			
Cultural Food Security	-.85	.25	-3.34**			
Block 3						
Intercept	.96	.27	3.59***	.18**	.03	2.18 (2,124)
Identity Denial Condition	.61	.39	1.57			
Generational Status	-.08	.36	-.23			
Cultural Food Security	-.79	.34	-2.31*			
Identity Denial Condition by Generational Status	-1.02	.53	-1.92			
Identity Denial Condition by Cultural Food Security	-.11	.50	-.22			
Block 4						
Intercept	1.58	.35	4.54***	.22**	.07	1.55 (2, 119)
Identity Denial Condition	.18	.24	.77			
Generational Status	-.51	.28	-1.85			
Cultural Food Security	-.72	.26	-2.75**			
Age	.004	.01	.53			
Dietary Restrictions	.12	.36	.34			
Food Security	-.21	.25	-.82			
Some Graduate School or Graduate School	-.51	.30	-1.67			
Some College but No Degree and Below	.19	.28	.68			
Grocery Stores	-.07	.05	-1.45			
Fear for Safety	-.22	.25	-.87			

*Note.* \* $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .  $N = 130$ . American Identity Denial Condition (0 = Identity Denial Questions Asked First, 1 = Food Items Asked First); Generational Status (0 = Born in the US or immigrated under five, 1 = Born outside the US); Cultural Food Security (0 = Culturally Food Insecure, 1 = Culturally Food Secure); Dietary Restrictions (0 = No, 1 = Yes); Food Security (0 = Food Secure, 1 = Food Insecure); Fear for Safety (0 = No, 1 = Yes).

**Table 5***Exploratory Analyses for Anticipated Anger and Preference for American Food Versus Chinese Food*

	Preference for American Food Versus Chinese Food					
	<i>b</i>	SE	<i>t</i>	R <sup>2</sup>	ΔR <sup>2</sup>	F for ΔR <sup>2</sup>
Block 1						
Intercept	.22	.19	1.13	0.02		1.07 (2, 127)
Identity Denial Condition	.38	.28	1.3			
Anticipated Anger	-.06	.09	-.72			
Block 2						
Intercept	.45	.21	2.19*	.07*	0.05**	7.18 (2, 126)
Identity Denial Condition	.40	.28	1.44			
Anticipated Anger	-.11	.09	-1.26			
Generational Status	-.82	.31	-			2.68**
Block 3						
Intercept	.49	.21	2.34*	.09*	0.02	2.24 (2, 125)
Identity Denial Condition	.37	.28	1.33			
Anticipated Anger	-.20	.10	-1.88			
Generational Status	-.74	.31	-2.40*			
Anticipated Anger by Generational Status	.28	.19	1.50			
Block 4						
Intercept	.99	.30	3.25	.19**	0.12*	2.43 (2, 119)
Identity Denial Condition	.40	.27	1.47			
Anticipated Anger	.01	.09	.13			
Generational Status	-.75	.31	-2.43*			
Dietary Restrictions	.08	.41	.20			
Some Graduate School or Graduate School	-.65	.35	1.86			
Some College but No Degree and Below	-.07	.33	-.23			
Food Security	.001	.29	.003			
Age	.01	.01	.69			
Grocery Stores	-.06	.06	-1.03			
Fear for Safety	-.91	.30	-			3.07**

*Note.* \* $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .  $N = 130$ . American Identity Denial Condition (0 = Identity Denial Questions Asked First, 1 = Food Items Asked First); Generational Status (0 = Born in the US or immigrated under five, 1 = Born outside the US); Cultural Food Security (0 = Culturally Food Insecure, 1 = Culturally Food Secure); Dietary Restrictions (0 = No, 1 = Yes); Food Security (0 = Food Secure, 1 = Food Insecure); Fear for Safety (0 = No, 1 = Yes).

**Table 6***Exploratory Analyses for Anticipated Anger and Daily Consumption of American Food versus Chinese Food*

	Daily Consumption of American Food Versus Chinese Food					
	<i>b</i>	SE	<i>t</i>	R <sup>2</sup>	ΔR <sup>2</sup>	F for ΔR <sup>2</sup>
Block 1						
Intercept	.42	.17	2.43*	.01		0.64 (2,127)
Identity Denial Condition	.27	.25	1.07			
Anticipated Anger	-.04	.08	-.49			
Block 2						
Intercept	.67	.18	3.67***	.09**	.08**	10.51 (2,126)
Identity Denial Condition	.29	.25	1.19			
Anticipated Anger	-.90	.08	-1.16			
Generational Status	-.88	.27	-3.24**			
Block 3						
Intercept	.70	.18	3.82***	.10**	.01	3.52 (4, 125)
Identity Denial Condition	.26	.24	1.08			
Anticipated Anger	-.16	.09	-1.77			
Generational Status	-1.57	.55	-2.85**			
Anticipated Anger by Generational Status	.24	.17	1.45			
Block 4						
Intercept	.90	.27	3.27**	.17**	.07	1.81 (2,119)
Identity Denial Condition	.21	.24	.88			
Anticipated Anger	-.03	.08	-.40			
Generational Status	-.75	.28	-2.68**			
Dietary Restrictions	.25	.37	.68			
Some Graduate School or Graduate School	-.50	.32	-1.57			
Some College but No Degree and Below	.19	.29	.66			
Food Security	-.16	.26	-.59			
Age	.004	.01	.57			
Grocery Stores	-.09	.05	-1.69			
Fear for Safety	-.32	.27	-1.21			

*Note.* \* $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .  $N = 130$ . American Identity Denial Condition (0 = Identity Denial Questions Asked First, 1 = Food Items Asked First); Generational Status (0 = Born in the US or immigrated under five, 1 = Born outside the US); Cultural Food Security (0 = Culturally Food Insecure, 1 = Culturally Food Secure); Dietary Restrictions (0 = No, 1 = Yes); Food Security (0 = Food Secure, 1 = Food Insecure); Fear for Safety (0 = No, 1 = Yes).



**Table 7***Exploratory Analyses for Frequency of Identity Denial Scenarios and Preference for American Food Versus Chinese Food*

	Preference for American Food Versus Chinese Food					
	<i>b</i>	SE	<i>t</i>	R <sup>2</sup>	ΔR <sup>2</sup>	F for ΔR <sup>2</sup>
Block 1						
Intercept	.22	.19	1.13	.02		1.39 (2,127)
Identity Denial Condition	.38	.28	1.36			
Frequency of Identity Denial	-.10	.10	-1.07			
Block 2						
Intercept	.43	.21	2.06*	.06*	.04*	5.41 (2,126)
Identity Denial Condition	.37	.28	1.35			
Frequency of Identity Denial	-.07	.09	-0.72			
Generational Status	-.71	.30	-2.33*			
Block 3						
Intercept	.43	.21	2.05*	.06	.00	0.01 (2,125)
Identity Denial Condition	.38	.28	1.35			
Frequency of Identity Denial	-.06	.11	-.58			
Generational Status	-.70	.31	-2.28*			
Frequency of Identity Denial by Generational Status	-.02	.22	-.08			
Block 4						
Intercept	1.06	.32	3.32**	.19**	.13*	2.67(2,119)
Identity Denial Condition	.39	.27	1.43			
Frequency of Identity Denial	.07	.10	.69			
Generational Status	-.80	.31	-2.57*			
Dietary Restrictions	.10	.40	.25			
Some Graduate School or Graduate School	-.70	.35	-1.96			
Some College but No Degree and Below	-.08	.33	-.23			
Food Security	-.07	.30	-.22			
Age	.01	.01	.76			
Grocery Stores	-.06	.06	-1.10			
Fear for Safety	-.94	0.30	-			
						3.23**

*Note.* \* $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .  $N = 130$ . American Identity Denial Condition (0 = Identity Denial Questions Asked First, 1 = Food Items Asked First); Generational Status (0 = Born in the US or immigrated under five, 1 = Born outside the US); Cultural Food Security (0 = Culturally Food Insecure, 1 = Culturally Food Secure); Dietary Restrictions (0 = No, 1 = Yes); Food Security (0 = Food Secure, 1 = Food Insecure); Fear for Safety (0 = No, 1 = Yes).

**Table 8***Exploratory Analyses for Frequency of Identity Denial Scenarios and Daily Consumption of American Food Versus Chinese Food*

	Daily Consumption of American Food Versus Chinese Food					
	<i>b</i>	SE	<i>t</i>	R <sup>2</sup>	ΔR <sup>2</sup>	F for ΔR <sup>2</sup>
Block 1						
Intercept	.40	.17	2.41*	.06*		3.19 (2, 127)
Identity Denial Condition	.31	.25	1.24			
Frequency of Identity Denial	-.21	.08	-2.56*			
Block 2						
Intercept	.62	.18	3.43***	.11**	.05	5.18 (3, 126)
Identity Denial Condition	.30	.24	1.24			
Frequency of Identity Denial	-.18	.08	-2.18*			
Generational Status	-.73	.26	-2.74**			
Block 3						
Intercept	.63	.18	3.42	.11**	.00	0.97 (2,125)
Identity Denial Condition	.29	.24	1.19			
Frequency of Identity Denial	-.19	.10	-2.03*			
Generational Status	-.74	.27	-2.75**			
Frequency of Identity Denial by Generational Status	.06	.19	.31			
Block 4						
Intercept	.81	.29	2.83**	.18**	.07	1.47 (2, 119)
Identity Denial Condition	.23	.24	.94			
Frequency of Identity Denial	-.10	.09	-1.08			
Generational Status	-.68	.28	-2.42*			
Dietary Restrictions	.21	.36	.59			
Some Graduate School or Graduate School	-.45	.32	-1.41			
Some College but No Degree and Below	.20	.29	.67			
Food Security	-.05	.27	-.19			
Age	.004	.01	.49			
Grocery Stores	-.08	.05	-1.58			
Fear for Safety	-.29	.26	-1.13			

*Note.* \**p* < 0.05, \*\* *p* < 0.01, \*\*\* *p* < 0.001. *N* = 130. American Identity Denial Condition (0 = Identity Denial Questions Asked First, 1 = Food Items Asked First); Generational Status (0 = Born in the US or immigrated under five, 1 = Born outside the US); Cultural Food Security (0 = Culturally Food Insecure, 1 = Culturally Food Secure); Dietary Restrictions (0 = No, 1 = Yes); Food Security (0 = Food Secure, 1 = Food Insecure); Fear for Safety (0 = No, 1 = Yes).

**Table 9***Exploratory Analyses for Identity Denial in Daily Life and Preference for American Food Versus Chinese Food*

	Preference for American Food Versus Chinese Food					
	<i>b</i>	SE	<i>t</i>	R <sup>2</sup>	ΔR <sup>2</sup>	F for ΔR <sup>2</sup>
Block 1						
Intercept	.22	.19	1.15	0.03		1.96 (2, 127)
Identity Denial Condition	.38	.28	1.35			
Identity Denial in Daily Life	-.16	.12	-1.51			
Block 2						
Intercept	.43	.21	2.08*	.07*	.04*	3.19 (3, 126)
Identity Denial Condition	.38	.28	1.37			
Identity Denial in Daily Life	-.14	.12	-1.32			
Generational Status	-.71	.30	-2.35*			
Block 3						
Intercept	.43	.21	2.08*	.08*	0.00	2.61 (4, 125)
Identity Denial Condition	.36	.28	1.32			
Identity Denial in Daily Life	-.19	.12	-1.60			
Generational Status	-.74	.30	-2.44*			
Frequency of Identity Denial by Generational Status	.25	.26	0.35			
Block 4						
Intercept	1.06	.33	3.23**	.19**	.11*	2.76 (10, 119)
Identity Denial Condition	.40	.27	1.48			
Identity Denial in Daily Life	.07	.12	.58			
Generational Status	-.79	.31	-2.55*			
Dietary Restrictions	.08	.40	.20			
Some Graduate School or Graduate School	-.69	.36	-1.94			
Some College but No Degree and Below	-.09	.33	-.28			
Food Security	-.06	.30	-.19			
Age	.01	.01	.81			
Grocery Stores	-.06	.06	1.09			
Fear for Safety	-.96	.30	-			
						3.16**

*Note.* \* $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .  $N = 130$ . American Identity Denial Condition (0 = Identity Denial Questions Asked First, 1 = Food Items Asked First); Generational Status (0 = Born in the US or immigrated under five, 1 = Born outside the US); Cultural Food Security (0 = Culturally Food Insecure, 1 = Culturally Food Secure); Dietary Restrictions (0 = No, 1 = Yes); Food Security (0 = Food Secure, 1 = Food Insecure); Fear for Safety (0 = No, 1 = Yes).

**Table 10***Exploratory Analyses for Identity Denial in Daily Life and Daily Consumption of American Food Versus Chinese Food*

	Daily Consumption of American Food Versus Chinese Food					
	<i>b</i>	SE	<i>t</i>	R <sup>2</sup>	ΔR <sup>2</sup>	F for ΔR <sup>2</sup>
Block 1						
Intercept	.42	.17	2.45*	.03		1.72 (2, 127)
Identity Denial Condition	.28	.25	1.10			
Identity Denial in Daily Life	-.15	.10	-1.55			
Block 2						
Intercept	.65	.19	3.55***	.09**	.06**	8.76 (2, 126)
Identity Denial Condition	.27	.24	1.12			
Identity Denial in Daily Life	-.12	.09	-1.32			
Generational Status	-.78	.27	-2.95**			
Block 3						
Intercept	.66	.18	3.59***	.10**	.01	2.12 (2, 125)
Identity Denial Condition	.26	.24	1.05			
Identity Denial in Daily Life	-.19	.10	-1.85			
Generational Status	-.83	.27	-3.10**			
Frequency of Identity Denial by Generational Status	.33	.23	1.46			
Block 4						
Intercept	.91	.30	3.08**	.17**	.08	1.72 (2, 119)
Identity Denial Condition	.20	.24	.84			
Identity Denial in Daily Life	.003	.11	.03			
Generational Status	-.73	.28	2.61*			
Dietary Restrictions	.23	.36	.64			
Some Graduate School or Graduate School	-.51	.32	-1.61			
Some College but No Degree and Below	.19	.30	.64			
Food Security	-.15	.28	-.53			
Age	.005	.01	.61			
Grocery Stores	-.09	.05	-1.69			
Fear for Safety	-.35	.27	-1.29			

*Note.* \**p* < 0.05, \*\* *p* < 0.01, \*\*\* *p* < 0.001. *N* = 130. American Identity Denial Condition (0 = Identity Denial Questions Asked First, 1 = Food Items Asked First); Generational Status (0 = Born in the US or immigrated under five, 1 = Born outside the US); Cultural Food Security (0 = Culturally Food Insecure, 1 = Culturally Food Secure); Dietary Restrictions (0 = No, 1 = Yes); Food Security (0 = Food Secure, 1 = Food Insecure); Fear for Safety (0 = No, 1 = Yes)

## APPENDIX A: Eligibility Criteria Questions

1. How old are you (years)?

2. Do you live in the U.S.?

Yes

No

3. What is your race? Please select all that apply.

Asian American

Native American or Alaska Native

Black or African American

Hispanic, Latino/a, or Spanish origin

Native Hawaiian or Pacific Islander

White or Caucasian

Other (please specify)

a. Which of these Asian ethnicities do you most identify with?

East Asian (Chinese, Japanese, Korean, etc.)

South Asian (Indian, Pakistani, Bangladeshi, etc.)

Southeast Asian (Filipino, Indonesian, Vietnamese, etc.)

Southwest Asian or Middle Eastern (Iranian, Lebanese, Israeli, Saudi, etc.)

None of the above

b. Which of these East Asian ethnicities do you most identify with?

Chinese

Japanese

Korean

4. Are you fluent in English?

Yes

No

## APPENDIX B: Identity Denial Measures

### *Identity Denial Scenarios*

1. Please read the below scenario and answer the questions that follow.

“Imagine that you have just given your first presentation for a class. The professor gives feedback for all student presentations, and he asks whether English is your native language.”

How often does this scenario occur in your life?

1 (*never or not at all*) to 7 (*always or extremely*)

How angry would you be if you were in this scenario?

1 (*never or not at all*) to 7 (*always or extremely*)

2. Please read the below scenario and answer the questions that follow.

“Imagine that you are at a domestic (U.S.) airport food court ordering a meal. The cashier rings up your order, pauses, and asks ‘So where are you from?’”

How often does this scenario occur in your life?

1 (*never or not at all*) to 7 (*always or extremely*)

How angry would you be if you were in this scenario?

1 (*never or not at all*) to 7 (*always or extremely*)

***Identity Denial Questionnaire***

1. Please answer the following questions:

How often are you asked where you are from?	1 ( <i>never</i> ) to 7 ( <i>always</i> )
How often are you asked about your nationality?	1 ( <i>never</i> ) to 7 ( <i>always</i> )
How often are you told you are not American?	1 ( <i>never</i> ) to 7 ( <i>always</i> )
How often are you told you cannot identify as American?	1 ( <i>never</i> ) to 7 ( <i>always</i> )
How often are you told you should culturally identify differently?	1 ( <i>never</i> ) to 7 ( <i>always</i> )
How often are you told you should identify with one cultural identity over another?	1 ( <i>never</i> ) to 7 ( <i>always</i> )
How often are you asked about your citizenship status?	1 ( <i>never</i> ) to 7 ( <i>always</i> )
How often are you asked if you speak English?	1 ( <i>never</i> ) to 7 ( <i>always</i> )
How often are you misperceived as being not an English speaker?	1 ( <i>never</i> ) to 7 ( <i>always</i> )
How often are you misperceived as being from another country?	1 ( <i>never</i> ) to 7 ( <i>always</i> )

## APPENDIX C: Accessibility Measures

### *U.S. Adult Food Security Survey Module*

For these statements, please indicate whether the statement was often true, sometimes true, or never true for you in the last 12 months—that is, since last (name of current month).

1. “I worried whether my food would run out before I got money to buy more.” Was that often true, sometimes true, or never true for you in the last 12 months?

Often true  
Sometimes true  
Never true  
Don’t Know

2. The food that I bought just didn’t last, and I didn’t have money to get more.” Was that often, sometimes, or never true for you in the last 12 months?

Often true  
Sometimes true  
Never true  
Don’t Know

3. “I couldn’t afford to eat balanced meals.” Was that often, sometimes, or never true for you in the last 12 months?

*If affirmative responses (i.e., "often true" or "sometimes true") to one or more of the above questions, continue.*

4. In the last 12 months, since last (name of current month), did you ever cut the size of your meals or skip meals because there wasn't enough money for food?

Yes  
No  
Don’t Know

*If yes to question 4, ask question 5. If not, skip to question 6.*

5. How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?

Almost every month  
Some months but not every month  
Only 1 or two months  
Don’t Know



6. In the last 12 months, did you ever eat less than you felt you should because there wasn't enough money for food?

- Yes
- No
- Don't Know

7. In the last 12 months, were you ever hungry but didn't eat because there wasn't enough money for food?

- Yes
- No
- Don't Know

8. In the last 12 months, did you lose weight because there wasn't enough money for food?

- Yes
- No
- Don't Know

*If affirmative response to one or more of the above questions, then continue.*

9. In the last 12 months, did (you/you or other adults in your household) ever not eat for a whole day because there wasn't enough money for food?

- Yes
- No
- Don't Know

*If yes to question 9, then continue.*

10. How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?

- Almost every month
- Some months but not every month
- Only 1 or two months
- Don't Know

*The Cultural Food Security Inventory*

Please answer the following questions:

1. Did you grow up eating Chinese foods?

Yes

No

2. Are you able to get access to the Chinese foods you ate as a child?

Yes

No

3. Does the food you eat on a daily basis reflect your Chinese heritage?

Yes

No

## APPENDIX D: Food Choice Measure

The food dishes will be randomized between the three cuisines. Each participant will be presented with the menu of dish options and asked the following two questions after each dish.

1. How appealing do you find this dish?

Response - 1 (*not appealing*) to 10 (*extremely appealing*).

2. How likely are you to eat this in your daily life?

Response - 1 (*not at all*) to 10 (*extremely likely*).

### *American Dishes*

Bagel with topping

Plain bagel with plain or flavored cream cheese.

Hamburger and French Fries

Beef burger on a bun with a side of French fries

BBQ Baby Back Ribs

Pork ribs with barbecue sauce

Steak

Beef steak with a side of mashed potatoes and gravy

Pizza

Pizza with choice of toppings (pepperoni, ham, black olives, onion, peppers, sausage)

Grilled Salmon

Grilled Salmon topped with Onions, Thyme and Dijon Mustard

Turkey Sandwich

Bread with slices of turkey and lettuce and tomato

Spaghetti and Meatballs

Spaghetti with beef meatballs and tomato sauce

### *Chinese Dishes*

Shrimp in Broth

Baby shrimp served in hot and sour broth with fresh cilantro

Steamed Whole Fish

Whole Fish steamed with Ginger and Scallions

Three Cup Chicken

Chicken cooked with sesame oil, soy sauce and Shaoxing wine

Stir-Fried Pork Belly

Pork belly stir fried with fermented black beans, garlic, soy sauce and chili peppers

Beef Dumplings

Pan-fried beef dumplings

Four Joy Meatballs

Pork Meatballs braised with soy sauce and ginger

Dandan Noodles

Wheat Noodles tossed in chili oil, Sichuan pepper, preserved vegetables and minced pork

Red Cooked Pork

Pork stewed with light and dark soy sauce, Shaoxing wine, ginger and star anise

### ***Indian Dishes***

Rogan Josh

Lamb curry cooked with spices

Kheer

Basmati rice pudding with cardamom and milk

Urad Dal

Black lentils cooked with fennel seeds and ginger

Bengali Fish Curry

Fish curry cooked with mustard, chili and turmeric

Pani Puri

Hollow fried dough filled with tamarind, potato and spices

Pav Bhaaji

Soft bread roll served with vegetable gravy

Keema Methi

Minced goat meat curry

Masala Dosa

Rice and lentil crepe filled with spiced potato

## APPENDIX E: Demographic Measure

1. How do you describe yourself?

Female  
Male  
Intersex  
Transfemale  
Transmale  
Non-binary  
Not listed above (please specify)

2. Where were you born?

U.S.  
Different country (please specify)

3. How old were you when you came to the U.S. to live (years)?

4. Are you the first generation in your family to be raised in the U.S.?

Yes  
No

5. Where was your first parent born?

U.S.  
Different country (please specify)  
Don't Know

6. Please indicate the education level of your first parent:

Less than High School  
Some High School  
High School or equivalent (GED)  
Some college but no degree  
Associate's degree  
College (e.g., B.A., B.S.)  
Some Graduate School but no degree  
Graduate School (e.g., M.S., Ph.D., M.D.)  
Don't Know

7. Where was your second parent born?

U.S.  
Different country (please specify)  
Don't Know

8. Please indicate the education level of your second parent:

Less than High School  
Some High School  
High School or equivalent (GED)  
Some college but no degree  
Associate's degree  
College (e.g., B.A., B.S.)  
Some Graduate School but no degree  
Graduate School (e.g., M.S., Ph.D., M.D.)  
Don't Know

9. How many years have you lived in the U.S.?

10. What is your highest level of education?

Less than High School  
Some High School  
High School or equivalent (GED)  
Some college but no degree  
Associate's degree  
College (e.g., B.A., B.S.)  
Some Graduate School but no degree  
Graduate degree (e.g., Ph.D., Psy.D., M.S.)

11. What is your height (inches/cm)?

12. What is your weight (lb/kg)?

13. Do you have any dietary restrictions/food allergies? (e.g., lactose intolerant, gluten free, nut allergy).

Yes  
No

14. If yes, what are your dietary restrictions/food allergies?

15. On average, how many hours do you work a week?

16. How many fast food restaurants do you have in your neighborhood?

17. How many grocery stores are easily accessible to you?

18. Do you think other people can tell by looking at you that you are of Asian descent?

Yes

No

19. Have you ever feared for your safety because of your ethnicity?

Yes

No

20. What state do you live in?

Choose from list of states

21. Do you live in an urban, suburban or rural area?

Urban

Suburban

Rural

22. What is your zip code? (optional)

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