



The Relationship among Cultural Variables and Mental Health for Chinese International Students in the U.S.

Kai He¹ · Glenn Gamst¹ · Jerry L. Kernes¹ · Aghop Der-Karabetian¹

Accepted: 5 September 2025
© The Author(s) 2025

Abstract

The current study examined the impact of multicultural factors (ethnic identity, acculturation, perceived discrimination, and gender role attitudes) on the mental health of Chinese international students in the U.S. The study was guided by the Multicultural Assessment-Intervention Process (MAIP) model that focuses on multicultural issues imbedded in mental health service delivery and research. Using a convenience sample of 315 Chinese international students currently studying in the U.S., seven standard multiple regression analyses were conducted to examine the impact of multicultural factors on mental health (e.g., anxiety, depression, and stress symptoms). The results indicated that having higher ethnic identity commitment, acculturation to either mainstream U.S. culture or Chinese culture, egalitarian gender role attitudes, and lower ethnic identity exploration, generally predicted better mental health outcomes. Conversely, higher levels of perceived discrimination predicted poorer mental health outcomes for Chinese international students. Counseling implications, limitations, and future research were discussed.

Keywords Chinese international students · Mental health · MAIP model · Multicultural

✉ Kai He
kai.he@laverne.edu

Glenn Gamst
ggamst@laverne.edu

Jerry L. Kernes
jkernes@laverne.edu

Aghop Der-Karabetian
ader-karabetian@laverne.edu

¹ University of La Verne, La Verne, USA

International students are important parts of U.S. higher educational institutions. Chinese international students are one of the biggest international student populations at U.S. universities. A total of 306,590 Chinese international students were enrolled in U.S. universities during the 2023-24 academic year (Institute of International Education, 2025). International students from India surpassed Chinese international students, during the 2023-24 academic year, to become the largest international student group in the U.S. (331,602; Institute of International Education, 2025). A gradual decline in enrollment for Chinese international students from mainland China started during the COVID-19 pandemic (Institute of International Education, 2025). Travel restrictions due to the pandemic, and a hostile social and political climate in the U.S. against Chinese international students have contributed to the decline in enrollment (Houlette et al., 2025; Liu & Peng, 2024). It is worth noting that Chinese international students can have vastly different experiences compared to other minority groups in the U.S. (e.g., Asian Americans, Asian immigrants) as first-generation sojourners coming to the U.S. on student visas.

Over the past few decades (prior to the pandemic), the number of Chinese international students in the U.S. has grown exponentially (Institute of International Education, 2025). The economic reform in mainland China, the one child policy (which enabled families to concentrate scarce financial resources), increased financial capacity for mainland Chinese families, highly competitive academic environment, and other factors have all contributed to the significant growth of Chinese international students in the U.S. who came from mainland China (Chao et al., 2017; Yan & Berliner, 2011).

Chinese international students in the U.S. face a number of challenges and adjustments as they navigate through their journey (Lai et al., 2023; Yuan, 2022). Being in a foreign country, adjusting to a new cultural and academic environment, being far away from home, facing discrimination, navigating through school work, as well as other obstacles can all have a detrimental impact on their mental health (Lai et al., 2023; Li et al., 2017; Wei et al., 2007; Yuan, 2022). Different studies (Han et al., 2013; Lian & Wallace, 2020) have found high prevalence rates of depression and anxiety among Chinese international students in the U.S. There is a strong need to further understand different factors that can impact the mental health of Chinese international students.

In recent years, one additional challenge faced by Chinese international students is the impact of worsening U.S.-China relations. For example, the 'China Initiative' was implemented in 2018 which targeted Chinese international students and scholars of Chinese descent. One study (Houlette et al., 2025) found increased sense of discrimination and desire to leave the U.S. among graduate Chinese international students. During the pandemic, increased visa restrictions, travel restrictions (going into China), U.S.-China tension, and anti-Asian racism have decreased Chinese international students' sense of mobility (i.e., being able to travel and immigrate freely). Challenges caused by U.S.-China relations are unique stressors faced by Chinese international students.

The present study utilized the Multicultural Assessment-Intervention Process (MAIP) model (Dana, 1993; Gamst et al., 2011) to examine existing literature on different multicultural factors impacting the mental health of Chinese international

students. Ethnic identity, acculturation, perceived discrimination, and gender role attitudes were multicultural factors examined in the present study. All of these multicultural variables were identified by the MAIP model. Hence, the following literature review will briefly examine current mental health outcome research and four multicultural domains (ethnic identity, acculturation, perceived discrimination, gender role attitudes) expected to impact Chinese international student mental health outcomes.

MAIP Model and Mental Health Outcomes

Historically, the field of psychology including counseling psychology was dominated by Western-centric ideas (Ludden, 2019). However, the field of psychology has shifted towards the inclusion of multiculturalism over the past few decades. Chinese international students have very different cultural backgrounds. They grew up in a country with an ancient history and markedly different cultural traditions. Values stemming from Confucianism (e.g., filial piety, respect for elderly and authority) can be very important to people of Chinese heritage (Gui, 2019; Koo et al., 2020; Wang et al., 2024; Zhang & Liu, 2021). It is very important to consider multicultural factors when studying issues related to Chinese international students.

According to the World Health Organization (2024), mental health refers to a state of mental well-being that enables people to cope with the stresses of life, to realize their abilities, to learn well and work well, and to contribute to their communities. It has garnered more attention among the general public. Mental health issues are highly prevalent among college student populations. Beiter and colleagues (2015) found a prevalence rate of 15% for severe depression and 11% for severe anxiety for a college population in the U.S. The COVID-19 pandemic also had a negative impact on the mental health for college students (Copeland et al., 2021; Stamatis et al., 2022).

Chinese international students also have high rates of mental health issues. Several studies (Han et al., 2013; Lian & Wallace, 2020) have found significantly high prevalence rates of both depression and anxiety symptoms among Chinese international students in the U.S. The pandemic also had a negative impact on the mental health of Chinese international students. In addition to the common stressors faced by all students, Chinese international students in the U.S. needed to deal with racism, discrimination, safety concerns, and homesickness (Nam et al., 2021; Xu et al., 2021). Instances of racism and discrimination were particularly rampant in the lives of Chinese international students during the pandemic (Gibson et al., 2023; Ji & Chen, 2022). The number of incidents of anti-Asian hate crime, published by the FBI, increased from 158 in 2019, to 279 in 2020, and 746 in 2021 (U.S. Commission on Civil Rights., 2023). Other stressors faced by Chinese international students included staying up late for remote classes (if they returned to China for online classes), health concerns, social isolation, VISA issues, expensive flight tickets to go home, and academic stressors (Li et al., 2021). Chinese international students in both the U.S. and Australia were found to experience elevated levels of depression and anxiety symptoms during the pandemic (Ke et al., 2023; Li et al., 2021).

A number of factors were found, in existing research, to be associated with mental health for Chinese international students. Perceived discrimination (Sun et al., 2021), perceived language discrimination (Wei et al., 2012a, 2015), acculturative issues (Liu et al., 2022; Wang & Mallinckrodt, 2006; Wei et al., 2007, 2012a), adult attachment styles (Wang & Mallinckrodt, 2006), ways of coping (Wei et al., 2012a), maladaptive perfectionism (Liu et al., 2022; Wei et al., 2007), expressed emotions (Lin & Dmitrieva, 2019), and social connections (Wei et al., 2015) can all have either positive (e.g., having more social connections) or negative (e.g., having higher levels of perceived discrimination) impact on the mental health of Chinese international students in the U.S. Despite the challenges and elevated risk for mental health issues, Chinese international students often underutilize mental health services (Li et al., 2016). Ethnic identity, stigma, and social support can all impact the willingness of Chinese international students to seek mental health support and services (Li et al., 2016; Lian et al., 2020; Ma et al., 2021). Several culturally adapted treatment interventions (e.g., Acceptance and Commitment Therapy, Dialectical Behavioral Therapy, Behavioral Activation) have been developed to better meet the mental health needs of Chinese international students (Chen et al., 2021; Cheng & Merrick, 2017; Xu et al., 2020).

The framework used to guide the current study was the Multicultural Assessment-Intervention Process (MAIP) model (Dana, 1993; Gamst et al., 2011). The MAIP model is an organizing framework to guide multiculturalism in research, clinical and counseling practice, and mental health service delivery (Gamst et al., 2011). There are seven steps involved in the MAIP model: client intake assessment, client-provider match, multicultural status assessment, provider self-perceived cultural competence, provider multicultural training, culturally sensitive service delivery, and outcome assessments (Gamst et al., 2011). In the present study, the third step (multicultural status assessment) was used to guide the exploration of multicultural factors on the mental health of Chinese international students in the U.S. Specifically, we examined the impact of variables such as acculturation, ethnic identity, perceived discrimination, and gender role attitudes on mental health outcomes (anxiety and depression symptoms) that were identified in our literature review and also emphasized by the MAIP model. The next section will briefly review these outcome and predictor variables identified by the MAIP model.

Ethnic Identity and Mental Health Outcomes

Ethnic identity describes one's identification and affiliation with their ethnic group and differs from racial identity which is formed in the face of racism and discrimination, and is a sociopolitical construct (Gamst et al., 2011; Helms, 2007). Ethnic identity holds similarly high importance compared to other forms of identities (e.g., religious identity, political identity) and can be highly salient for ethnic minority groups (Phinney & Alipuria, 1990). Ethnic identity depicts the human tendency to form groups based on their identification with the cultural and ethnic background of the groups (Phinney & Alipuria, 1990). Two important components of ethnic identity have been identified: commitment and exploration (Phinney & Ong, 2007). Commitment refers to one's devotion to their ethnic group and identity while exploration refers to seeking information and experiences related to one's ethnic culture. A secure

and strong ethnic identity can only be developed when both commitment and exploration are present (Phinney & Ong, 2007).

There has been limited research that explored the impact of ethnic identity on mental health for Chinese international students. However, studies conducted on immigrants and Chinese Americans have also provided some information on the impact of ethnic identity for Chinese international students due to some overlaps of experiences and identities. For immigrants, an individuals' attitudes and characteristics as well as the environment can determine the importance and role of ethnic identity in their lives (Phinney et al., 2001). Individuals can choose to either assert pride in their ethnic identity or reject their ethnic background in response to hostilities from the environment. Maintaining a strong ethnic identity can lead to better psychological well-being for immigrants, particularly for adolescents (Fuligni et al., 2005; Kiang et al., 2006; Phinney et al., 2001).

Some studies on ethnic identity and mental health have been conducted on Chinese Americans and other ethnic minorities in the U.S. Kiang and colleagues (2006) found stronger ethnic identity to be associated with higher levels of happiness in the face of daily stressors for Chinese American and Mexican American high school students (most of whom came from immigrant families). Higher ethnic identity was also found to be associated with better academic achievements and more positive outlook on school for Chinese and Mexican American high school students (Fuligni et al., 2005). Higher importance of ethnic identity was also found to predict lower levels of depression and anxiety symptoms for Chinese American high school students (Yip & Fuligni, 2002).

For Chinese American college students, having strong ethnic identity (e.g., asserting pride in Chinese culture, being able to speak Chinese fluently) predicted better self-esteem (Tsai et al., 2001). Tummala-Narra and colleagues (2021) also found ethnic identity to be associated with both the psychological well-being and willingness to seek help for Chinese American college students. However, Ai and colleagues (2015) found Chinese Americans with higher ethnic identity were more likely to receive a diagnosis of MDD (Major Depressive Disorder), indicating ethnic identity as a risk factor for mental health. The negative impact of ethnic identity might be caused by internalized shame and embarrassment about one's own ethnic minority culture. For Asian international students (including Chinese international students), higher ethnic identity was associated with higher levels of acculturative stress (Tian et al., 2019). However, Yasuda and Duan (2002) found ethnic identity to not be associated with emotional well-being for Asian international students (including Chinese international students). For Chinese international students, higher ethnic identity has been found to predict lower willingness to seek out help for mental health (Chauv et al., 2022; Li et al., 2016). Overall, there appeared to be conflicting findings, among existing research, on the impact of ethnic identity on mental health for immigrants, Asian Americans, Asian international students, and Chinese international students. Based on the conflicting study results concerning ethnic identity and Chinese international student mental health outcomes (which may be due to the targeting group in these studies is varied and possibly too wide), we tentatively expect a positive predictive relationship between ethnic identity and mental health outcomes.

Acculturation and Mental Health Outcomes

Acculturation refers to the process of adapting to a different culture, usually the dominant one (Kim & Abreu, 2001). It is a process that many immigrants and ethnic minorities experience regularly. For Chinese international students, acculturation is the process of adjusting to the mainstream U.S. culture while choosing to maintain one's Chinese culture, or not. One of the most prominent acculturation theories is Berry's model which outlined four acculturation strategies: assimilation, integration, separation, and marginalization (Berry, 1992). For Chinese immigrants in the U.S., people who fell into the integrated and separated groups had significantly better quality of life compared to people who fell into the marginalized group (Lieber et al., 2001). Integration was the most common acculturation strategy for Chinese international students in Belgium, followed by separation, assimilation, and marginalization (Cao et al., 2017). For Chinese international students in the U.S., their acculturation experiences were defined by a variety of different challenges. Yan and Berliner (2011) found that, for Chinese international students, their acculturation experience could be filled with 'confusion, uncertainty, and hastened adjustment'. Many wanted to change and adapt but often clung to their Chinese roots instead of adjusting to Western culture that might seemed foreign and alienating. Many Chinese international students in the U.S. also struggled with language differences, social interactions, academic environment, and everyday life issues (Li et al., 2017).

The impact of acculturation on the mental health of Chinese international students in the U.S. has been examined in several studies. Zhang and Goodson (2011) found that acculturating to U.S. culture and adhering to Chinese culture was negatively associated with depression for Chinese international students. Social connections served as a mediator between acculturation to the U.S. culture and depression. Building social connections with other American students was also found as a mediator between higher acculturation to the U.S. culture and higher future positive affect as well as life satisfaction (Du & Wei, 2015). Building social connections with other Chinese students served as a mediator between higher adherence to Chinese culture and lower future negative affect. Acculturation status was found to not be associated with eating pathology for female Asian international students (including Chinese international students; Stark-Wroblewski et al., 2005). Accepting Western beauty standards and acculturation appeared to be independent processes for female Asian international students. For Chinese international students in Germany, having lower acculturation to German culture was related to more sociocultural adjustment difficulties (Zhang et al., 2010). It is also important to note that acculturation is a two-way process. Higher acculturation to U.S. culture will also create challenges for Chinese international students.

Another important concept related to acculturation is acculturative stress, which is defined as the stress triggered by the process of acculturation (Berry, 1992). A number of factors have been found to be associated with acculturative stress. Interpersonal problems and having lower interpersonal agency were found to predict higher acculturative stress for newly arrived Chinese international students in the U.S. (Qi et al., 2018). Being satisfied with one's interpersonal support negatively predicted acculturative stress (Ye, 2006). Acculturative stress was also found to be a mediator

between cultural harmony (being able to balance both Chinese and American culture) and subjective well-being for Chinese immigrants and international students in the U.S. (Wu et al., 2023). Leisure activities might have the potential to help Chinese international students alleviate the impact of acculturative stress (Zhou et al., 2018). Levels of acculturative stress were found to be higher among undergraduate Chinese international students compared to their peers in graduate schools (Su et al., 2021). For Chinese international students in the U.S. and Australia, acculturative stress was negatively correlated with positive emotions and quality of life (Pan et al., 2008; Su et al., 2021). Stronger ethnic identity was associated with higher acculturative stress for Chinese Americans and Asian international students (Ai et al., 2015; Tian et al., 2019). Based on these studies we expect a positive predictive relationship between acculturation to U.S. mainstream culture and Chinese international student mental health outcomes.

Discrimination and Mental Health Outcomes

Discrimination refers to the prejudiced and unjust treatment of certain groups of people (Gamst et al., 2011). It can be widely perceived particularly by people with minority backgrounds. The most common form of discrimination is racial discrimination, which refers to the discriminatory practice toward groups of people based on their race (Paradies, 2006). Racial discrimination has a detrimental impact on the mental health of people from minority backgrounds (Paradies, 2006). For Chinese international students in the U.S., many have reported instances of racial discrimination while they were attending college (Lien, 2021). Anti-Asian sentiment and xenophobia have increased due to the pandemic and worsened China-U.S. relations (Le & Jin, 2025). Various stereotypes also contribute to the discrimination faced by Chinese international students (Ruble & Zhang, 2013; Xie et al., 2020). In the past few years, the COVID-19 pandemic has also significantly contributed to the level of perceived discrimination experienced by Chinese international students (Bi et al., 2022; Nam et al., 2021; Xu et al., 2021).

For Asian international students, higher levels of perceived discrimination were found to predict depression (Wei et al., 2008). When faced with higher levels of discrimination, Asian international students who 'felt like a burden' (i.e., feeling like they are unwanted which can be reinforced by incidents of discrimination) would be more likely to have suicidal ideations (Wang et al., 2013). Similarly, perceived discrimination also served as a moderator between feelings of alienation and suicidal ideations for Asian international students. For female Asian international students, perceived racial, gender, and nationality discrimination were all found to be associated with lower life satisfaction (Liu et al., 2016). Loneliness was found to be a mediator between the various forms of discrimination and decreased life satisfaction for female Asian international students. Having higher levels of perceived racial discrimination was associated with more psychological distress for male Asian international students in the U.S. (Wong et al., 2014).

Perceived discrimination predicted higher levels of mental health problems for Chinese international students (Sun et al., 2021). Having more social connections with other American students was found to be a protective factor against the nega-

tive impact of perceived discrimination on mental health. Perceived discrimination was also found to predict higher levels of post-traumatic stress symptoms for Chinese international students (Wei et al., 2012b). Having more social connections with other Chinese international students appeared to be a protective factor against discrimination on trauma symptoms. For female Chinese international students, using more internalization and less resistance coping (i.e., attributing the incidents to themselves) lead to more positive adaptation after experiencing discrimination (Tsai & Wei, 2018). For male Chinese international students, however, using less internalization and more resistance coping (attributing the incident to others) lead to more positive adaptation after encountering discrimination. Chauv and colleagues (2022) found that Chinese international students who faced higher levels of discrimination had a better outlook on life and were more willing to seek out mental health services.

Besides racial discrimination, language discrimination is another form of discrimination faced by Chinese international students (Liao et al., 2023; Wei et al., 2015). It refers to discrimination based on the languages that people speak (usually people who speak English as their second language). Perceived language discrimination was found to be a significant predictor of depression, anxiety, and PTSD symptoms for Chinese international students in the U.S. (Wei et al., 2015). Having social connections with American students and higher levels of self-esteem appeared to moderate the relationship between perceived language discrimination and mental health symptoms. Liao and colleagues (2023) also found perceived language discrimination to be predictive of depressive symptoms among Chinese international students. Interpersonal shame was also found to be a mediator between perceived language discrimination and depressive symptoms. Based on these studies, we expect an inverse relationship between perceived discrimination and mental health outcomes among Chinese international students.

Gender Role Attitudes on Mental Health Outcomes

Gender role attitudes refers to the social expectations toward a person's roles, attitudes, and behaviors based on the person's gender (Bem, 1981). Gender role attitudes can have significant impact on people's mental health (Barrett & White, 2002; Jaehn et al., 2020; King et al., 2019; Mesler et al., 2022; Priess et al., 2009; Straiton et al., 2013). Several studies (Barrett & White, 2002; Mesler et al., 2022; Priess et al., 2009; Straiton et al., 2013) have found masculinity to be associated with better mental health outcomes (e.g., self-harm behavior, depressive symptoms) for different populations (e.g., adult, adolescent, clinical population) in various countries (e.g., U.K., U.S., Norway). A couple of studies (Jaehn et al., 2020; King et al., 2019) found having more egalitarian gender role attitudes to be associated with better mental health outcomes for different demographics in Australia and Russia.

Limited research has been conducted on gender role attitudes among Chinese international students. Most existing research (Goff & Carolan, 2013; Qin et al., 2022; Zhang & Allen, 2019; Zhang et al., 2011) were qualitative studies conducted on this population (both male and female Chinese international students). There appeared to be significant differences between Chinese and Western perceptions on gender roles as well as between more traditional and modern/egalitarian gender role

attitudes that needed to be navigated through by Chinese international students (Goff & Carolan, 2013; Qin et al., 2022; Zhang & Allen, 2019; Zhang et al., 2011). For Chinese immigrants, similar types of differences (e.g., between Western and Chinese) had to be navigated through as well (Qin, 2009; Yu, 2011). For male Asian international students in the U.S., Wong and colleagues (2014) found that, when masculinity held high importance, discrimination had a significant impact on stress.

For Chinese students in China, Yu and Xie (2008) found that having more ‘undesirable’ (i.e., negatively perceived) femininity traits (e.g., submissiveness, shyness) were found to predict negative psychological well-being and higher trait anxiety. Lin and colleagues (2020) found that Chinese college students in mainland China, who scored higher on traditional masculine traits, were less likely to develop depressive symptoms during the COVID-19 pandemic. The MAIP model has emphasized consistently the importance of gender, gender roles, and shifting in establishing and promoting positive mental health outcomes across diverse multicultural populations (Gamst et al., 2011; Gamst et al., 2021; Gamst et al., 2023; Johnson et al., 2016). Based on the limited gender role attitude research with this population, we expect a positive relationship between expressing egalitarian gender role attitudes and mental health outcomes among Chinese international students

Purpose of the Study

The present study attempts to examine the impact of various multicultural factors (i.e., ethnic identity, acculturation, perceived discrimination, and gender role attitudes) on the mental health (e.g., anxiety, depressive symptoms, stress, etc.) of Chinese international students in the U.S. We hypothesize that having either higher ethnic identity, higher acculturation to either mainstream U.S. culture or Chinese culture, or more egalitarian gender role attitudes would predict better mental health outcomes for Chinese international students. We also hypothesize that experiencing higher levels of perceived discrimination would predict poorer mental health outcomes. Two fundamental and overarching research questions are examined in the present study: (1) how do multicultural factors predict mental health outcomes (anxiety and depression), and (2) how do multicultural factors predict acculturative stress among a sample of Chinese international college students? This study makes a useful contribution to the counseling literature due to the prevalence of Chinese international students attending U.S. colleges and universities coupled with the genuine paucity of published work exploring their multicultural experience here in the U.S.

Method

Participants

IBM SPSS software (version 28.0) was utilized as an a priori power analysis, with four predictor variables and an anticipated effect size $f^2 = 0.15$ and a desired statistical power level = 0.95 and an alpha level set at 0.05, the minimum sample size

required was 103, or 151 if our effect size f^2 was reduced to 0.10 (Cohen et al., 2003; Meyers et al., 2017). Participants ($N=315$) were conveniently sampled for the study. Participants were Chinese international students from mainland China (81.2%), Hong Kong (12.4%), Macau (1.9%), and Taiwan (4.5%). There were more male participants (51.6%) than female participants (46.5%) recruited with some preferring not to disclose their gender identities (1.9%). Participants' educational status were undergraduate students (48.1%), master's level students (34.1%), and doctoral level students (17.8%). Participant age was $M=24.35$ ($SD=3.83$). Participant years lived in the U.S. was $M=4.06$ ($SD=2.68$). Participant self-reported English level (as reported in TOEFL scores) was $M=93.59$ ($SD=13.57$).

Measures

Demographic Survey This measured the variables reported above.

Independent Variables Ethnic identity, acculturation, perceived discrimination, and gender role attitudes were independent variables used in this study. The Multigroup Ethnic Identity Measure-Revised (MEIM-R; Phinney & Ong, 2007) is a 6-item self-report measure of ethnic identity. The MEIM-R included two subscales: Exploration (e.g., "I have often done things that will help me understand my ethnic background better") and Commitment (e.g., "I understand pretty well what my ethnic group membership means to me"). Each item was rated on a 5-point Likert-type scale ranging from *strongly agree* (1) to *strongly disagree* (5), with 3 as *neutral*. Higher mean scores indicated higher ethnic identity exploration and commitment. Past studies (Li et al., 2016; Tian et al., 2019; Yasuda & Duan, 2002) using the MEIM-R with Chinese international students and Asian international students have consistently found Cronbach's alpha to be above 0.80. In the present study, the reliability for the scores of the Exploration and Commitment subscales was 0.80 and 0.83 respectively.

The Vancouver Index of Acculturation (VIA; Ryder et al., 2000) is a 20-item self-report measure of acculturation. The VIA included two subscales: Mainstream Acculturation (e.g., "I often participate in mainstream North American cultural traditions") and Heritage Acculturation (e.g., "I would be willing to marry a person from my heritage culture"). Each item was rated on a 9-point Likert-type scale ranging from *strongly disagree* (1) to *strongly agree* (9) with 5 being *neutral*. Higher mean scores on the subscales indicated higher acculturation to either mainstream U.S. culture or heritage culture (i.e., Chinese culture) respectively. Several studies (Du & Wei, 2015; Wei et al., 2012a; Zhang & Goodson, 2011) using the VIA on Chinese international students have found Cronbach's alpha levels to be above 0.80 for the scores of both Mainstream Acculturation and Heritage Acculturation subscales. In the present study, the internal consistency for the scores of the Mainstream Acculturation and Heritage Acculturation subscales were 0.88 and 0.91 respectively.

The Acculturative Stress Scale for International Students (ASSIS; Sandhu & Asrabadi, 1994) is a 36 item self-report measure of acculturative stress for international students. The ASSIS included seven subscales: Perceived Discrimination, Homesickness, Perceived Hate, Fear, Stress Due to Change/Culture Shock, Guilt,

and Miscellaneous. Only the Perceived Discrimination subscale (e.g., “Others are biased toward me”) from the ASSIS was used in the study to measure perceived discrimination. The Perceived Discrimination subscale consisted of 8 items rated on a 5-point Likert-type scale. Responses ranged from *strongly disagree* (1) to *strongly agree* (5) with 3 being *not sure*. Higher scores on the subscale indicated higher levels of perceived discrimination. Multiple studies (Tsai & Wei, 2018; Wang et al., 2013; Wei et al., 2008, 2012b; Wong et al., 2014) using the Perceived Discrimination subscale from the ASSIS with Chinese international students have found Cronbach’s alpha levels to be above 0.90. In the present study, the reliability for the scores of the Perceived Discrimination subscale was 0.92.

The Gender Role Egalitarian Attitude Test (GREAT; Chang, 1999) is a 10-item self-report measure of gender role attitudes. The GREAT included two subscales: Work Domain (e.g., “be a leader; make money”) and Home Domain (e.g., “do laundry; do housework”). Each item was rated on a 9-point Likert-type scale. Responses range from *more true for women* (−4) to *more true for men* (4) with 0 being the *same* (for men and women). Positive mean scores for each of the two domains indicated more traditional, male-dominant gender role attitudes while negative mean scores indicated more female dominant gender role attitudes in that domain. Mean scores close to 0 indicated more egalitarian gender role attitudes. Cronbach’s alpha level for the scores of the two subscales of GREAT has been found to be between 0.75 and 0.83 for Work Domain and between 0.70 and 0.81 for Home Domain in the original study (Chang, 1999). One study (Zhang, 2006) conducted among college students in China has found reliability to be around .72 for the scores of the Work and Home Domain subscales, respectively. In the present study, the reliability for the scores of the Work and Home Domain subscales were 0.73 and 0.88 respectively.

Dependent Variables Mental health was assessed by seven dependent variables, three subscales from the Depression Anxiety Stress Scales-21, and four subscales from the Acculturation Stress Scale for Chinese Students, were used in the present study. The Depression Anxiety Stress Scales-21 (DASS-21; Lovibond & Lovibond, 1995) is a 21 item self-report measure of mental health outcomes (i.e., depression, anxiety, and stress). The DASS-21 included three subscales: Depression (e.g., “I was unable to become enthusiastic about anything”), Anxiety (e.g., “I felt scared without any good reason”), and Stress (e.g., “I tended to over-react to situations”). Each item was rated on a 4-point Likert-type scale. Responses range from *did not apply to me at all* (0) to *applied to me very much, or most of the time* (3). Higher mean scores on each subscale indicated higher levels of stress, depression, and anxiety symptoms. Several studies (Liu et al., 2022; Wei et al., 2015; Xu et al., 2020) conducted with Chinese international students, using the DASS-21, have found Cronbach’s alpha level around 0.80 for the scores of the Depression and Anxiety subscales. In the present study, the Cronbach’s alpha for the scores of the Stress, Depression, and Anxiety subscales were 0.84, 0.87, and 0.83 respectively.

The Acculturation Stress Scale for Chinese Students (ASSCS; Bai, 2016) is a 32 item self-report measure of acculturative stress for Chinese international students in the U.S. The ASSCS included five subscales: Language Insufficiency (e.g., “I cannot

express myself very well when using English”), Social Isolation (e.g., “My social circles shrank after I come to the U.S.”), Perceived Discrimination (e.g., “Others are biased toward me”), Academic Pressure (e.g., “I feel a lot of academic pressure”), and Guilt Toward Family (e.g., “I worry about my parents”). The Perceived Discrimination subscale was borrowed directly from the Perceived Discrimination subscale on the ASSIS (Sandhu & Asrabadi, 1994) and was excluded from the current study to avoid repetition. These four ASSCS subscales (Language Insufficiency, Social Isolation, Academic Pressure, Guilt toward Family) while not traditional mental health outcome measures (i.e., anxiety and depression) are important contributors to mental health outcomes and often serve as proxies to more standard counseling outcome measures with Chinese international student populations (Ai et al. 2015; Bai 2016; Çimşir and Ünlü Kaynakçı 2024; Hansen et al. 2018; Pan et al. 2008; Qi et al. 2018; Su et al. 2021; Tian et al. 2019; Wei et al. 2012c; Wu et al. 2023; Ye 2006; Zhou et al. 2018). Many of these studies have included respondent acculturation status as a predictor of acculturation stress. Each item was rated on a 7-point Likert-type scale. Responses ranged from *never* (1) to *all the time* (7). Higher mean scores on the subscales indicated greater acculturative stress resulting from the various stressors (i.e., language insufficiency, social isolation, academic pressure, and guilt toward family). The original study (Bai, 2016) that developed the ASSCS found Cronbach’s alpha of 0.94 with a sample of Chinese international students in the U.S. Two studies (Liu and Wei, 2020; Liu et al., 2022) with Chinese international students, using the ASSCS, have found Cronbach’s alpha to be above 0.90. In the present study, the Cronbach’s alpha for the scores of the Language Insufficiency, Social Isolation, Academic Pressure, and Guilt Toward Family subscales were 0.91, 0.89, 0.80, and 0.83 respectively.

Procedure

The present study was approved by the university’s institutional review board and followed all ethical guidelines. Participants were recruited through the Chinese student associations and Taiwanese student associations from several public universities in the U.S. as well as through online social media platforms (e.g., Weibo, WeChat, Reddit, university online forums, etc.). Participants were given an informed consent prior to being administered the survey. The informed consent also notified participants that participation in this study was voluntary and the information obtained by the survey would remain anonymous. Participants were given a chance to enter a raffle after completion of the entire survey for a chance to win a \$20 Starbucks gift card. To qualify for the study, screening questions were given at the beginning to ensure participants who identified as being a Chinese international student (from either mainland China, Hong Kong, Macau, or Taiwan), on a F1 visa, also spoke and read English and Chinese, currently attended a university in the U.S., and was at least 18 years of age. Several manipulation checks (e.g., completing a rudimentary poem in Chinese, several questions that would catch random responders) were also included in the survey to increase the internal validity of the study.

Results

Preliminary Analyses

A total of 315 participants completed the entire questionnaire. Initially, a total of 405 started the questionnaire and 90 of these respondents were removed from the study (35 for missing data and 55 who did not pass quality control checks and were deemed “bots”/fraudulent responses). Descriptive statistics (i.e., means, standard deviations, minimum, and maximum) of the key variables used in the subsequent analyses as well as bivariate correlations between key variables of interest are presented in Table 1. Correlations between demographic variables and the dependent variables were computed. No significant correlations were found, $p > .05$. Due to this lack of correlation these variables were not entered into the regression models. All subscale scores of the measures achieved good internal consistencies. The three DASS-21 subscales, while fairly highly correlated, ($r = .73$ to 0.78), achieved moderate positive correlations with ASSIS Perceived Discrimination subscale ($r = .43$ to 0.50 , $p < .01$). The four ASSCS subscales, while fairly highly correlated, ($r = .28$ - 0.72), achieved moderate positive correlation with one of the subscales of the VIA (Heritage; $r = .30$, $p < .01$).

Before proceeding with the multiple regression analyses, all variables were screened for possible code and statistical assumption violations with IBM SPSS Frequencies, Explore, Plot, and Regression procedures. No univariate outliers were detected and Mahalanobis distance indicated no multivariate outliers. Pairwise linearity was deemed satisfactory as was multicollinearity (Meyers et al., 2017).

Regression Analyses

Seven standard multiple regression analyses were conducted to examine the predictive ability of the independent variables as measured by the MEIM-R, VIA, ASSIS Perceived Discrimination subscale, and GREAT on the mental health outcome variables as measured by the DASS-21 and ASSCS (see Table 2). Bonferroni adjustment to the alpha levels was employed to control for Type I error rates with a new alpha of $0.05/7 = 0.007$ as the minimum new alpha level (Meyers et al., 2017).

DASS-21 Stress All seven of the independent variables (MEIM-R Exploration subscale, MEIM-R Commitment subscale, VIA Heritage subscale, VIA Mainstream subscale, ASSIS Perceived Discrimination subscale, GREAT Work Domain subscale, and GREAT Home Domain subscale) were used in the regression model to predict stress measured by the DASS-21 Stress subscale. The overall regression model was found to be statistically significant $F(7, 307) = 15.29$, $p < .001$, and accounted for about 26% of the variance of stress ($R^2 = 0.26$). Ethnic identity exploration ($\beta = 0.25$), perceived discrimination ($\beta = 0.40$), and mainstream acculturation ($\beta = -0.18$) were all found to be significant predictors of stress. Higher levels of ethnic identity exploration and perceived discrimination predicted higher levels of stress. Less mainstream acculturation predicted higher levels of stress. Perceived discrimination was given the strongest weight in the model, followed by ethnic identity exploration and

Table 1 Correlations, means, standard deviations, minimum-maximum, and internal consistency estimates for key variables ($N = 315$)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
1	—														
2		.73**													
3			.76**												
4				.50**											
5					.51**										
6						.54**									
7							.30**								
8								.08							
9									.05						
10										.10					
11											.25**				
12												.43**			
13													.11*		
14														.15**	
<i>M</i>	13.80	12.05	12.29	29.90	26.02	12.63	11.59	3.77	4.02	6.81	5.55	21.99	3.64	—	-6.82
<i>SD</i>	4.22	4.12	3.98	11.74	9.65	5.00	4.57	.82	.79	1.33	1.21	7.87	6.70	8.09	
<i>Min-Max</i>	7-24	7-24	7-24	10-66	8-50	4-28	3-21	1-5	1-5	2-9	2-9	8-40	-20-20	-20-20	
<i>a</i>	.84	.87	.83	.91	.89	.80	.83	.80	.83	.91	.88	.92	.73	.88	

Note. Stress = DASS-21 Stress subscale; Depression = DASS-21 Depression subscale; Anxiety = DASS-21 Anxiety subscale; Language = ASSCS Language Insufficiency subscale; Social = ASSCS Social Isolation subscale; Academic = ASSCS Academic Pressure subscale; Guilt = ASSCS Guilt Toward Family subscale; Exploration = MEIM-R Exploration subscale; Commitment = MEIM-R Commitment subscale; Heritage = VIA Heritage subscale; Mainstream = VIA Mainstream subscale; Discrimination = ASSIS Perceived Discrimination subscale; Work = GREAT Work Domain subscale; Home = GREAT Home Domain subscale; * = $p < .05$; ** = $p < .01$.

Table 2 Summary of significant results for Multiple Regression for MAIP Variables Predicting DASS-21 Stress, DASS-21 Depression, DASS-21 Anxiety, ASSCS Language Insufficiency, ASSCS Social Isolation, ASSCS Academic Pressure, and ASSCS Guilt Toward Family (*N* = 315)

Predictive Variables	<i>b</i>	<i>t</i>	<i>R</i> ²
	Stress		.26
Ethnic Identity Exploration	.25**	3.63	
Mainstream Acculturation	-.18**	-3.52	.37
Discrimination	.40**	7.68	
	Depression		.37
Ethnic Identity Exploration	.30**	4.73	
Ethnic Identity Commitment	-.21**	-2.93	.30
Heritage Acculturation	-.21**	-3.21	
Mainstream Acculturation	-.15**	-3.20	.30
Discrimination	.46**	9.73	
	Anxiety		.30
Ethnic Identity Exploration	.27**	3.98	
Discrimination	.44**	9.69	.23
	Language Insufficiency		
Mainstream Acculturation	-.25**	-4.81	.23
Discrimination	.35**	6.73	
	Social Isolation		.33
Mainstream Acculturation	-.28**	-5.70	
	Academic Pressure		.27
Mainstream Acculturation	.40**	8.12	
	Guilt Toward Family		.28
Mainstream Acculturation	-.23**	-4.45	
Discrimination	.36**	6.95	.28
Gender Role Work Domain	.16**	2.73	
	Guilt Toward Family		.28
Gender Role Home Domain	-.35**	-6.19	

Note. Stress=DASS-21 Stress subscale; Depression=DASS-21 Depression subscale; Anxiety=DASS-21 Anxiety subscale; Language Insufficiency=ASSCS Language Insufficiency subscale; Social Isolation=ASSCS Social Isolation subscale; Academic Pressure=ASSCS Academic Pressure subscale; Guilt Toward Family=ASSCS Guilt Toward Family subscale; Ethnic Identity Exploration=MEIM-R Exploration subscale; Ethnic Identity Commitment=MEIM-R Commitment subscale; Heritage Acculturation=VIA Heritage subscale; Mainstream Acculturation=VIA Mainstream subscale; Discrimination=ASSIS Perceived Discrimination subscale; Gender Role Work Domain=GREAT Work Domain subscale; Gender Role Home Domain=GREAT Home Domain subscale; ** = *p*<.007.

mainstream acculturation. Cohen's f^2 suggested a moderate effect size for these three predictors ($f^2=0.35$).

DASS-21 Depression All seven of the independent variables were used in the regression model to predict depression measured by the DASS-21 Depression subscale. The overall regression model was found to be statistically significant $F(7, 307)=26.09, p<.001$, and accounted for about 37% of the variance of depression ($R^2=0.37$). Ethnic identity exploration ($\beta=0.30$), ethnic identity commitment ($\beta=-0.21$), heritage acculturation ($\beta=-0.21$), mainstream acculturation ($\beta=-0.15$), and perceived discrimination ($\beta=0.46$) were all found to be statistically significant predictors of depression. Higher levels of ethnic identity exploration and perceived discrimination predicted higher levels of depression. Lower levels of ethnic identity commitment, lower heritage acculturation, and mainstream acculturation also predicted higher levels of depression. Perceived discrimination was given the strongest weight in the model, followed by ethnic identity exploration, ethnic identity commitment, heritage acculturation, and mainstream acculturation. Cohen's f^2 suggested a large effect size for these five predictors ($f^2=0.59$).

DASS-21 Anxiety All seven of the independent variables were used in the regression model to predict anxiety measured by the DASS-21 Anxiety subscale. The overall regression model was found to be statistically significant $F(7, 307)=18.46, p<.001$, and accounted for about 30% of the variance of depression ($R^2=0.30$). Ethnic identity exploration ($\beta=0.27$) and perceived discrimination ($\beta=0.44$) were both found to be significant predictors of anxiety. Higher levels of ethnic identity exploration and perceived discrimination predicted higher levels of anxiety. Perceived discrimination was given the stronger weight in the model followed by ethnic identity exploration. Cohen's f^2 suggested a moderate effect size for these two predictors ($f^2=0.43$).

ASSCS Language Insufficiency All seven of the independent variables were used in the regression model to predict acculturative stress caused by language insufficiency measured by the ASSCS Language Insufficiency subscale. The overall regression model was found to be statistically significant $F(7, 307)=13.04, p<.001$, and accounted for about 23% of the variance of acculturative stress stemming from language insufficiency ($R^2=0.23$). Both perceived discrimination ($\beta=0.35$) and mainstream acculturation ($\beta=-0.25$) were found to be significant predictors of acculturative stress caused by language insufficiency. Higher levels of perceived discrimination and less mainstream acculturation predicted higher levels of acculturative stress caused by language insufficiency. Perceived discrimination was given the stronger weight in the model compared to mainstream acculturation. Cohen's f^2 suggested a moderate effect size for these two predictors ($f^2=0.30$).

ASSCS Social Isolation All seven of the independent variables were used in the regression model to predict acculturative stress caused by feeling socially isolated measured by the ASSCS Social Isolation subscale. The overall regression model was

found to be statistically significant $F(7, 307) = 21.42, p < .001$, and accounted for about 33% of the variance of acculturative stress stemming from social isolation ($R^2 = 0.33$). Both perceived discrimination ($\beta = 0.40$) and mainstream acculturation ($\beta = -0.28$) were found to be significant predictors of acculturative stress stemming from feeling socially isolated. Higher levels of perceived discrimination were predictive of higher levels of acculturative stress caused by social isolation. Less mainstream acculturation was also predictive of higher levels of acculturative stress caused by social isolation. Perceived discrimination was given the stronger weight in the model followed by mainstream acculturation. Cohen's f^2 suggested a moderate effect size for these two predictors ($f^2 = 0.49$).

ASSCS Academic Pressure All seven of the independent variables were used in the regression model to predict acculturative stress caused by academic pressure measured by the ASSCS Academic Pressure subscale. The overall regression model was found to be statistically significant $F(7, 307) = 16.13, p < .001$, and accounted for about 27% of the variance of acculturative stress caused by academic pressure ($R^2 = 0.27$). Mainstream acculturation ($\beta = -0.23$) perceived discrimination ($\beta = 0.36$), and gender role attitudes ($\beta = 0.16$) were all found to be significant predictors of acculturative stress stemming from academic pressure. Higher levels of perceived discrimination and male dominant gender role attitudes in the work domain (i.e., a more traditional gender role outlook) were predictive of higher levels of acculturative stress caused by academic pressure. Less mainstream acculturation was also predictive of higher levels of acculturative stress caused by academic pressure. Perceived discrimination was given the strongest weight in the model followed by mainstream acculturation and gender role work domain. Cohen's f^2 suggested a moderate effect size for these three predictors ($f^2 = 0.37$).

ASSCS Guilt Toward Family All seven of the independent variables were used in the regression model to predict acculturative stress caused by feeling guilty toward family members measured by the ASSCS Guilt Toward Family subscale. The overall regression model was found to be statistically significant $F(7, 307) = 17.18, p < .001$, and accounted for about 28% of the variance of acculturative stress caused by guilt towards family ($R^2 = 0.28$). Gender role attitudes ($\beta = -0.35$) was the only significant predictor of acculturative stress stemming from feeling guilty toward family members. Having more female dominant gender role attitudes in the home domain (i.e., a more traditional gender role outlook) predicted higher levels of acculturative stress caused by guilt towards family. Cohen's f^2 suggested a moderate effect size for this predictor ($f^2 = 0.39$).

Mental health issues among the Chinese international student population appear to be influenced by higher levels of perceived discrimination, ethnic identity exploration, lower levels of acculturation (both to mainstream U.S. culture and Chinese culture), ethnic identity commitment, and having more traditional gender role attitudes.

Discussion

The current study examined the impact of multicultural factors (i.e., ethnic identity, acculturation, perceived discrimination, and gender role attitudes) on mental health issues for Chinese international students in the U.S. In terms of ethnic identity, greater ethnic identity commitment was predictive of fewer mental health issues (depression), while greater ethnic identity exploration was predictive of more mental health issues (stress, depression, and anxiety). Greater acculturation to both mainstream U.S. culture and Chinese culture were predictive of fewer mental health issues (stress, depression, acculturative stress from language insufficiency, social isolation, and academic pressure). Greater levels of perceived discrimination were predictive of more mental health issues (stress, depression, anxiety, and acculturative stress from language insufficiency, social isolation, and academic pressure). Having more traditional gender role attitudes was predictive of greater mental health issues (acculturative stress from academic pressure and guilt towards family). Perceived discrimination and acculturation were the most consistent predictors and protector of mental health issues among Chinese international students in the U.S.

Findings from the current study bring further insight into the impact of multicultural factors on mental health issues for Chinese international students. For ethnic identity, a bi-directional effect on mental health was found for the two components of ethnic identity (exploration and commitment). More commitment to one's ethnic identity appeared to be a protective factor for mental health while more exploration of one's ethnic identity appeared to be a risk factor. One potential explanation for this finding is that Chinese international students with higher commitment to their Chinese ethnic identity already felt more secure about their cultural background. Feeling more secure about their cultural heritage would protect them from life stressors. Students with higher exploration of their Chinese ethnic identity might be doing so because they did not feel very secure about their cultural background in the first place, which would lead them to experience more psychological distress.

Studies on other populations (Fisher et al., 2014; Iwamoto & Liu, 2010; Mills & Murray, 2017; Suh et al., 2019; Syed et al., 2013; Torres & Ong, 2010; Torres et al., 2011), using the same exploration and commitment framework on ethnic identity, have found similar bi-directional impact of ethnic identity on mental health outcomes. Torres and colleagues (Torres & Ong, 2010; Torres et al., 2011) found that ethnic identity exploration was positively associated with greater psychological distress while ethnic identity commitment served as a protective factor for Latinx Americans. It was theorized that ethnic identity exploration is more likely to occur due to unresolved and potentially uncomfortable questions related to one's ethnic identity. Commitment might reflect internalization or affirmation (i.e., being more secure) about one's ethnic identity (Mills & Murray, 2017). This might have explained why ethnic identity exploration was positively associated with psychological distress while ethnic identity commitment was negatively associated with psychological distress, consistent with the findings of the current study.

Syed and colleagues (2013) found ethnic identity commitment to be positively associated with psychological well-being while ethnic identity exploration was negatively associated with psychological well-being for ethnic minority college students

in the U.S. Fisher and colleagues (2014) also found similar results on ethnic identity for high school students in the U.S. Iwamoto and Liu (2010) found that higher ethnic identity commitment was positively associated with psychological well-being for Asian Americans and Asian international students in the U.S. Suh and colleagues (2019) found that higher ethnic identity commitment was negatively associated with anxiety while ethnic identity exploration was positively associated with anxiety for Asian international students in South Korea. These results are consistent with the findings on ethnic identity in our current study. Mills and Murray (2017) found higher ethnic identity exploration associated with higher anxiety symptoms with college students of various racial/ethnic backgrounds. However, there were no association found between ethnic identity commitment and anxiety as well as depression, providing a result that is inconsistent with the findings of the current study.

In terms of acculturation, the present study further adds to the existing literature on the impact of acculturation on mental health outcomes for Chinese international students in the U.S. Greater acculturation to the mainstream U.S. culture was found to predict lower levels of mental health issues. Greater acculturation to heritage Chinese culture was also found to predict lower level of depression and anxiety. The results from the current study supports the findings by Zhang and Goodson (2011). Higher acculturation to both mainstream U.S. culture and heritage Chinese culture predicted better mental health outcomes for Chinese international students. Social connection with American students might be a potential explanation for the protective effect of acculturation to mainstream U.S. culture on mental health. The finding is also consistent with Du and Wei (2015) who found a positive association between higher initial acculturation and better life satisfaction. Similarly, the protective factor of acculturation to heritage Chinese culture on mental health outcomes might also be explained by social connections with other Chinese international students. Social connection with other Chinese students was found to be a mediator between higher initial enculturation (i.e., acculturation to Chinese culture) and lower levels of future negative affect (Du & Wei, 2015).

Higher acculturation to mainstream American culture was found to predict lower levels of acculturative stress caused by language insufficiency, social isolation, and academic pressure for Chinese international students. The results from the current study seems to support the qualitative findings by Bertram and colleagues (2014). Students who are more acculturated (to U.S. culture) would likely have less language difficulty, are able to form better social connections, and have fewer academic difficulties. As a result, they would likely experience less acculturative stress caused by these stressors.

The current study further confirmed existing findings about the negative impact of perceived discrimination on mental health. Perceived discrimination was found to be a predictor of six out of the seven mental health outcomes tested. Perceived discrimination also received the greatest predictive weight compared to all other multicultural variables in the six multiple regression models. These results were consistent with all of the previous findings (Liu et al., 2016; Sun et al., 2021; Wang et al., 2013; Wei et al., 2008, 2012b; Wong et al., 2014) on the negative impact of perceived discrimination on mental health outcomes for Chinese international students and Asian international students in the U.S. Chinese international students with higher levels of

perceived discrimination might also be less likely to interact with American students (Wei et al., 2012b). This lack of interaction can also further heighten the level of perceived discrimination. The lack of social support can further increase the acculturative stress faced by the Chinese international students in addition to the negative emotional reaction when facing discrimination.

One underlying mediator for the relationship between perceived discrimination and negative mental health outcome might be shame. Interpersonal shame (caused by perceived negative evaluation from others) was found as a mediator between perceived language discrimination and depressive symptoms for Chinese international students (Liao et al., 2023). When faced with discrimination, Chinese international students might internalize the event and experience an increase in interpersonal shame for not having sufficient language skills. The increase in interpersonal shame can, in turn, create more mental health symptoms and acculturative stress. Interpersonal shame can be particularly culturally salient considering the significance of shame and interdependence in Chinese culture. This potential underlying mechanism can be further explored in future research. The results from the current study also appear to support the findings by Chauv et al. (2022). A negative association was found between perceived discrimination and attitudes towards mental health services. One possible explanation was that Chinese international students would experience higher levels of mental health symptoms and acculturative stress when they experienced higher levels of perceived discrimination. They, in turn, would be more willing to seek mental health services and perceive mental health services more positively.

It is also worth noting that the current study was conducted after the onset of the COVID-19 pandemic. Multiple studies (Bi et al., 2022; Gibson et al., 2023; Ji & Chen, 2022; Ke et al., 2023; Li et al., 2021; Nam et al., 2021; Xu et al., 2021) have consistently found an increase in perceived discrimination towards Chinese international students due to the pandemic. Perceived discrimination was also found to be related to increased depression and anxiety levels for Chinese international students during the pandemic (Bi et al., 2022). It is very likely that the experiences with discrimination during the pandemic have made perceived discrimination to be the most salient multicultural predictor of the well-being for Chinese international students in the current study. Experiences of being discriminated against can be traumatic and fresh on their mind. As a result, it had the strongest negative impact on mental health.

Overall, the Chinese international students in this study endorsed a strong female dominant gender role attitude in the home domain (i.e., women are expected to do the housework). The students endorsed a less strong male dominant gender role in the work domain (i.e., men are still expected to dominate in the workplace but there is a shift towards more equal gender roles). This finding seems to support existing literature (Gui, 2019; Koo et al., 2020; Wang et al., 2024; Zhang & Liu, 2021) on the complexity of gender role attitudes in modern day China due to the historical events in the past 70 years (i.e., socialist revolution and market reform). In terms of the predictability of gender role attitudes, having more traditional gender role attitudes predicted higher levels of acculturative stress from academic pressure and feeling guilty toward family members. The finding from the current study supported existing findings on the impact of egalitarian gender role attitudes on positive mental health outcomes (Jaehn et al., 2020; King et al., 2019). The relationship between egalitarian

gender role attitudes and positive mental health outcomes have also been found by studies (Gui, 2019; Koo et al., 2020; Zhang & Liu, 2021) conducted in China, including college age populations.

Students who expect women to dominate the work at home (more traditional gender role attitudes) were found to face higher levels of acculturative stress from feeling guilty toward their family members. The expectation for women to take up the responsibilities at home in modern day China has its roots in traditional Chinese culture such as Confucianism (Gui, 2019; Koo et al., 2020; Wang et al., 2024; Zhang & Liu, 2021). Confucianism also put strong emphasis on the family union, filial piety, and collectivism. Being able to stay with family members and performing duties that are expected (e.g., taking care of parents when they get old) can be highly valued by many Chinese families. It is possible that Chinese international students who hold more traditional gender role attitudes in the home domain might also hold other traditional values (such as Confucianism) very highly. As a result, these individuals might feel more pressure to conform to these expectations of filial piety and collectivism. Moving half way across the earth to pursue an education and being away from family members can be perceived as a failure to conform to certain expectations in traditional Chinese culture. As a result, students may feel a very strong sense of guilt towards their family members due to not being able to fulfil certain expectations (particularly with filial piety).

Counseling Implications

From the findings of the current study, a few counseling implications can be drawn. First, the current study highlighted the complex challenges that Chinese international students face in their cross-cultural academic journey. Chinese international students in the U.S. have made adjustments and faced difficulties in many different areas (e.g., academic, social, personal) of their lives. Being familiar with the complex challenges that this population faces can help mental health professionals better connect with the experiences and struggles of this population. Second, discrimination appears to consistently have the most negative impact on the mental health of Chinese international students based on the findings of the current study as well as previous research (Ma et al., 2021; Sun et al., 2021; Wei et al., 2015). The negative impact of perceived discrimination appears to be exacerbated by the COVID-19 pandemic. The increase in perceived discrimination during the COVID-19 pandemic (Bi et al., 2022; Gibson et al., 2023; Ji & Chen, 2022; Ke et al., 2023; Li et al., 2021; Nam et al., 2021; Xu et al., 2021) might have made discrimination more salient in affecting the psychological well-being of Chinese international students. Language discrimination has also been found to negatively impact the mental health of Chinese international students (Liao et al., 2023; Wei et al., 2015). Counselors would benefit from an awareness of the impact of discrimination and invite students to talk about these experiences.

Language related issues and difficulties might be one of the most challenging parts about the acculturation process (Bertram et al., 2014; Li et al., 2017). Language related difficulty can negatively impact students' ability to adjust socially and academically. Counselors can benefit from understanding the complex challenges that language related issues might bring. Furthermore, acculturation to both the main-

stream U.S. culture and heritage Chinese culture predicted fewer negative mental health symptoms. Being able to form better social supports might explain the positive impact of acculturation on mental health. For counselors, it is important to understand the challenges of the acculturation experiences. It is important to discuss and promote acculturation to either U.S. culture or Chinese culture as it leads to better social support with either American students or other Chinese international students (Zhang & Goodson, 2011).

From the results of the current study, ethnic identity appeared to have a bi-directional impact on mental health outcomes for Chinese international students. Holding stronger ethnic identity commitment predicted better mental health outcomes while conducting ethnic identity exploration predicted poorer mental health outcomes. For students who have a strong sense and commitment to their Chinese cultural identity and heritage, ethnic identity serves as a protective factor for mental health. However, for students who might not be very certain about their Chinese ethnic identity, conducting more exploration of their ethnic background can lead to poorer mental health outcomes. With gender role attitudes, Chinese international students can hold both traditional and egalitarian gender role attitudes due to shifts in Chinese society and their cross-cultural experiences. Having more traditional gender role attitudes predicted higher levels of acculturative stress for this population. Understanding the complex impact of these multicultural factors on mental health can benefit counselors when working with his population. Various culturally adapted treatment interventions were found to be effective in reducing mental health symptoms for Chinese international students (Chen et al., 2021; Cheng & Merrick, 2017; Xu et al., 2020). Acceptance and Commitment Therapy (ACT), Dialectical Behavioral Therapy (DBT), and Behavioral Activation (BA) have been culturally adapted to treat mental health issues for Chinese international students. Providing training for these treatment adaptations at college counseling centers can help practitioners to better cater to the needs of Chinese international students. Lastly, besides traditional counseling settings (e.g., college counseling centers), other school events, departments, agencies, and resources can also take steps to help address the mental health concerns of Chinese international students in the U.S.

Limitations and Future Research

Several limitations were identified from this study. First, the study relied on self-report survey measures. The desirability effect can negatively impact the results of the study even though the surveys were conducted anonymously. Second, the incentive (i.e., having a low probability to win a \$20 Starbucks gift card) to participate in the study is relatively low. The lack of strong incentives and length of the survey might have made the study prone to random and careless responding. Several validity questions were implemented to catch any careless or random responding, but random responding still cannot be completely ruled out. Third, the study utilized a cross-sectional design which does not allow any causal relationships to be drawn. For example, higher perceived discrimination can lead to higher anxiety levels while higher anxiety levels can increase one's sense of being discriminated upon. The timing of the study (after the COVID-19 pandemic) can also negatively exacerbate the

impact of discrimination on mental health. Thus, the conclusions that can be drawn from the findings are limited.

Another limitation of the study is the use of mostly English to administer the survey. Language difficulty can be a big challenge for Chinese international students particularly when they first arrived in the U.S. (Li et al., 2017; Wei et al., 2007). Being able to understand the nuance and intricacies of their psychological experiences in a second language can be challenging. The use of English to administer the survey might have affected the accuracy of the results and findings. Other limitations of the study included the inability to capture potentially important factors such as English language levels, or English language fluency change as a function of residing in the U.S., level of their academic degree program, mixing visible Chinese populations (e.g., mainland China, Taiwan, etc.), as well as the online platform used to distribute the questionnaire which may not have been convenient.

Lastly, some of the scales used in this study might have limitations. The GREAT (Chang, 1999) measure of gender role attitudes has never been used with Chinese international students or Asian international students. This is the first time, to our knowledge, that this scale has been used with Chinese international students in the U.S. The perceived discrimination measure (ASSIS perceived discrimination subscale; Sandhu & Asrabadi, 1994) only captured experiences of perceived racial discrimination. Other types of potentially significant discrimination (e.g., language discrimination) was not explored in the current study. This study utilized the MEIM-R (Phinney & Ong, 2007) which was designed for American born populations (e.g., Latinx Americans). Chinese international students, as an immigrant population, have vastly different experiences compared to other American born populations in the U.S. (e.g., Chinese Americans). The current study was not able to fully capture the complex ethnic and national identities that Chinese international students might have.

Future research on this population can be conducted to further explore the impact of ethnic identity on mental health outcomes. The bidirectional impact of ethnic identity should be further studied and confirmed by future research. Future studies can also focus more on the impact of gender role attitudes on mental health outcomes. Future research can consider using measures that are based on different gender role attitude frameworks (e.g., traditional vs. egalitarian; masculine vs. feminine) to further explore this relationship. Future research can also utilize other measures on perceived discrimination (e.g., perceived language discrimination). Language adaptations to the survey can also be utilized (i.e., using measurements that have been translated and validated in Chinese). Potential mediators that explore the underlying mechanism can be used to advance our understanding on how the underlying process operates. Factors such as maladaptive perfectionism, social connections, shame, loneliness, and length of stay in the U.S. have been found as mediators between different multicultural variables (e.g., acculturation, discrimination) and mental health outcomes (Du & Wei, 2015; Liao et al., 2023; Liu et al., 2016, 2022; Zhang & Goodson, 2011). Future studies can also work on developing and validating other culturally adapted psychological interventions to help counselors to develop tools when working with Chinese international students. Lastly, the current study utilized the Multicultural Assessment-Intervention Process model (MAIP model; Dana, 1993; Gamst et al., 2011) to help guide the exploration and predictability of multicultural

factors on mental health outcomes. Future studies can continue to use this framework to guide the exploration of multicultural factors and mental health outcomes.

Conclusion

The current study outlined different challenges and factors that are prominent in the experience of Chinese international students pursuing full time degrees at U.S. colleges and universities. Multicultural factors such as ethnic identity exploration and commitment, acculturation to mainstream U.S. culture and heritage Chinese culture, perceived discrimination, and gender role attitudes in home and work domains were all found to predict mental health outcomes for Chinese international students. It is important for mental health professionals to understand the challenges and experiences of Chinese international students as well as different multicultural factors that can impact the mental health outcomes for this population. The findings from the current study will hopefully provide more insight for mental health professionals when working with this growing student population at universities.

Author Contributions This journal article was developed through the dissertation research conducted by the corresponding author Kai He, MS. Second author Glenn Gamst, PhD served as the dissertation chair for the dissertation research. The other two authors (Jerry Kernes, PhD and Aghop Der Karabetian, PhD) served as dissertation committee members. All authors contributed to the original dissertation research. The corresponding author (Kai He, MS) wrote the main manuscript text and prepared Tables 1 and 2. The second author (Glenn Gamst, PhD) reviewed the manuscript and provided feedback.

Funding Open access funding provided by SCELIC, Statewide California Electronic Library Consortium

Data Availability No datasets were generated or analysed during the current study.

Declarations

Competing interests The authors declare no competing interests.

Open Access This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>.

References

- Ai, A. L., Nidao, E. G., Appel, H. B., & Lee, D. H. J. (2015). Ethnic identity and major depression in Asian American subgroups nationwide: Differential findings in relation to subcultural contexts. *Journal of Clinical Psychology*, 71(12), 1225–1244. <https://doi.org/10.1002/jclp.22214>

- Bai, J. (2016). Development and validation of the Acculturative StressScale for Chinese College Students in the United States (ASSCS). *Psychological Assessment*, 28(4), 443–447. <https://doi.org/10.1037/pas0000198>
- Barrett, A. E., & White, H. R. (2002). Trajectories of gender role orientations in adolescence and early adulthood: A prospective study of the mental health effects of masculinity and femininity. *Journal of Health and Social Behavior*, 43(4), 451–468. <https://doi.org/10.2307/3090237>
- Beiter, R., Nash, R., McCrady, M., Rhoades, D., Linscomb, M., Clarahan, M., & Sammut, S. (2015). The prevalence and correlates of depression, anxiety, and stress in a sample of college students. *Journal of Affective Disorders*, 173, 90–96. <https://doi.org/10.1016/j.jad.2014.10.054>
- Bem, S. L. (1981). Gender schema theory: A cognitive account of sex typing. *Psychological Review*, 88(4), 354–364. <https://doi.org/10.1037/0033-295X.88.4.354>
- Berry, J. W. (1992). Acculturation and adaptation in a new society. *International Migration*, 30, 69–85.
- Bertram, D. M., Poulakis, M., Elsasser, B. S., & Kumar, E. (2014). Social support and acculturation in Chinese international students. *Journal of Multicultural Counseling and Development*, 42(2), 107–124. <https://doi.org/10.1002/j.2161-1912.2014.00048.x>
- Bi, K., Yeoh, D., Jiang, Q., Wienk, M. N. A., & Chen, S. (2022). Psychological distress and everyday discrimination among Chinese international students one year into covid-19: A preregistered comparative study. *Anxiety, Stress & Coping: An International Journal*, 1–16. <https://doi.org/10.1080/10615806.2022.2130268>
- Cao, C., Zhu, C., & Meng, Q. (2017). Predicting Chinese international students' acculturation strategies from socio-demographic variables and social ties. *Asian Journal of Social Psychology*, 20(2), 85–96. <https://doi.org/10.1111/ajsp.12171>
- Chang, L. (1999). Gender role egalitarian attitudes in Beijing, HongKong, Florida, and Michigan. *Journal of Cross-Cultural Psychology*, 30(6), 722–741. <https://doi.org/10.1177/0022022199030006004>
- Chao, C., Hegarty, N., Angelidis, J., & Lu, V. F. (2017). Chinese students' motivations for studying in the United States. *Journal of International Students*, 7(2), 257–269.
- Chauv, J., Gamst, G., Meyers, L. S., Kernes, J. L., & Der-Karabetian, A. (2022). Perceived discrimination and Asian cultural values are associated with beliefs about psychological services among Chinese international students. *International Journal of Intercultural Relations*, 91, 138–149. <https://doi.org/10.1016/j.ijintrel.2022.10.003>
- Chen, Y., Anand, D., Li, H., Xu, P., & Daughters, S. B. (2021). Feasibility, acceptability and future adaptation of the Chinese translated Behavioural Activation (C-BA) treatment for depression: A pilot study. *International Journal of Psychology*, 56(2), 238–248. <https://doi.org/10.1002/ijop.12704>
- Cheng, P. H., & Merrick, E. (2017). Cultural adaptation of dialectical behavior therapy for a Chinese international student with eating disorder and depression. *Clinical Case Studies*, 16(1), 42–57. <https://doi.org/10.1177/1534650116668269>
- Çimşir, E., & Ünlü Kaynakçı, F. Z. (2024). Acculturative stress and depressive symptoms among international university students: A meta-analytic investigation. *International Journal of Intercultural Relations*, 102, 102041. <https://doi.org/10.1016/j.ijintrel.2024.102041>
- Cohen, J., Cohen, P., Aiken, L. S., & West, S. G. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences* (3rd ed.). Erlbaum Associates.
- Copeland, W. E., McGinnis, E., Bai, Y., Adams, Z., Nardone, H., Devadanam, V., Rettew, J., & Hudziak, J. J. (2021). Impact of COVID-19 pandemic on college student mental health and wellness. *Journal of the American Academy of Child & Adolescent Psychiatry*, 60(1), 134–141. <https://doi.org/10.1016/j.jaac.2020.08.466>
- Dana, R. H. (1993). *Multicultural assessment perspectives for professional psychology*. Allyn and Bacon.
- Du, Y., & Wei, M. (2015). Acculturation, enculturation, social connectedness, and subjective well-being among Chinese international students. *The Counseling Psychologist*, 43(2), 299–325. <https://doi.org/10.1177/0011000014565712>
- Fisher, S., Reynolds, J. L., Hsu, W. W., Barnes, J., & Tyler, K. (2014). Examining multiracial youth in context: Ethnic identity development and mental health outcomes. *Journal of Youth and Adolescence*, 43(10), 1688–1699. <https://doi.org/10.1007/s10964-014-0163-2>
- Fulgini, A. J., Witkow, M., & Garcia, C. (2005). Ethnic identity and the academic adjustment of adolescents from Mexican, Chinese, and European backgrounds. *Developmental Psychology*, 41(5), 799–811. <https://doi.org/10.1037/0012-1649.41.5.799>
- Gamst, G., Liang, C. T. H., & Der-Karabetian, A. (2011). *Handbook of multicultural measures*. SAGE.

- Gamst, G., Ma-Kellams, C., Arellano-Morales, L., Meyers, L. S., Balla, J., McCafferty, K., & Verbarendse K., Serpas, D., Rojas, A., Huffman, N., & Menendez, C. (2021). Development and validation of the Asian American Women's Shifting Scale (AsAWSS). *Asian American Journal of Psychology, 12*(2), 122–137. <https://doi.org/10.1037/aap0000220>
- Gamst, G., Ma-Kellams, C., Meyers, L. S., & Arellano-Morales, L. (2023). Shifting mediates gendered racial microaggressions and perceived racism among Asian American women. *Journal of Clinical Psychology, 79*, 2053–2070.
- Gibson, D. M., Xu, Y., Pandey, T., Jiang, Y., & Olsoe, B. (2023). The impact of the pandemic and protests on identity and purpose: A narrative inquiry with an international Chinese student. *International Journal for the Advancement of Counselling, 45*(3), 475–492. <https://doi.org/10.1007/s10447-023-09507-2>
- Goff, J. D., & Carolan, M. T. (2013). The intersection of gender and culture in Chinese international student couples. *Journal of Feminist Family Therapy: An International Forum, 25*(3), 141–164. <https://doi.org/10.1080/08952833.2013.777879>
- Gui, Y. (2019). Gender role attitudes and their psychological effects on Chinese youth. *Social Behavior and Personality: An International Journal, 47*(5), 1–8. <https://doi.org/10.2224/sbp.7563>
- Han, X., Han, X., Luo, Q., Jacobs, S., & Jean-Baptiste, M. (2013). Report of a mental health survey among Chinese international students at Yale University. *Journal of American College Health, 61*(1), 1–8. <https://doi.org/10.1080/07448481.2012.738267>
- Hansen, H. R., Shneyderman, Y., McNamara, G. S., & Grace, L. (2018). Assessing Acculturative Stress of International Students at a U.S. Community College. *Journal of International Students, 8*(1), 215–232. <https://doi.org/10.5281/zenodo.1134293>
- Helms, J. E. (2007). Some better practices for measuring racial and ethnic identity constructs. *Journal of Counseling Psychology, 54*(3), 235–246. <https://doi.org/10.1037/0022-0167.54.3.235>
- Houlette, H., Lee, J., & Li, X. (2025). Graduate Students and the U.S. China Initiative. *Comparative & International Higher Education, 17*(1), 92–104. <https://doi.org/10.32674/82hhj90>
- Institute of International Education (2025). *all places of origin*. IIE open doors /all places of origin. Available at: <https://opendoorsdata.org/data/international-students/all-places-of-origin/>
- Iwamoto, D. K., & Liu, W. M. (2010). The impact of racial identity, ethnic identity, Asian values, and race-related stress on Asian Americans and Asian international college students' psychological well-being. *Journal of Counseling Psychology, 57*(1), 79–91. <https://doi.org/10.1037/a0017393>
- Jaehn, P., Bobrova, N., Saburova, L., Kudryavtsev, A. V., Malyutina, S., & Cook, S. (2020). The relation of gender role attitudes with depression and generalized anxiety disorder in two Russian cities. *Journal of Affective Disorders, 264*, 348–357. <https://doi.org/10.1016/j.jad.2020.01.027>
- Ji, Y., & Chen, Y. W. (2022). “spat on and coughed at”: Co-cultural understanding of Chinese international students' experiences with stigmatization during the covid-19 pandemic. *Health Communication, 38*(9), 1964–1972. <https://doi.org/10.1080/10410236.2022.2045069>
- Johnson, J. C., Gamst, G., Meyers, L. S., Arellano-Morales, L., & Shorter-Gooden, K. (2016). Development and validation of the African American Women's Shifting Scale (AAWSS). *Cultural Diversity & Ethnic Minority Psychology, 22*(1), 11–25. <https://doi.org/10.1037/cdp0000039>
- Ke, T., Li, W., Sanci, L., Reavley, N., Williams, I., & Russell, M. A. (2023). The mental health of international university students from China during the COVID-19 pandemic and the protective effect of social support: A longitudinal study. *Journal of Affective Disorders, 328*, 13–21. <https://doi.org/10.1016/j.jad.2023.02.014>
- Kiang, L., Yip, T., Gonzales-Backen, M., Witkow, M., & Fuligni, A. J. (2006). Ethnic identity and the daily psychological well-being of adolescents from Mexican and Chinese backgrounds. *Child Development, 77*(5), 1338–1350. <https://doi.org/10.1111/j.1467-8624.2006.00938.x>
- Kim, B. S. K., & Abreu, J. M. (2001). *Acculturation measurement: Theory, current instruments, and future directions*. In J. M. Ponterotto, J. G. Casas, L. A. Suzuki, & C. M. Alexander (Eds.), *Handbook of multicultural counseling* (2nd ed., pp. 394–424). Sage
- King, T. L., Singh, A., & Milner, A. (2019). Associations between gender-role attitudes and mental health outcomes in a nationally representative sample of Australian adolescents. *Journal of Adolescent Health, 65*(1), 72–78. <https://doi.org/10.1016/j.jadohealth.2019.01.011>
- Koo, A., Hui, B. P., & Pun, N. (2020). Gender ideologies of youth in post-socialist China: Their gender-role attitudes, antecedents, and socio-psychological impacts. *Chinese Sociological Review, 52*(5), 487–514. <https://doi.org/10.1080/21620555.2020.1768366>
- Lai, H., Wang, D., & Ou, X. (2023). Cross-cultural adaptation of Chinese students in the United States: Acculturation strategies, sociocultural, psychological, and academic adaptation. *Frontiers in Psychology, 13*, 924561–924561. <https://doi.org/10.3389/fpsyg.2022.924561>

- Le, T. T., & Jin, R. (2025). How perceived discrimination and trust dynamics influence social integration in acculturation and reacculturation: the case of Chinese international student returnees. *Frontiers in Psychology, 16*, 1597967-. <https://doi.org/10.3389/fpsyg.2025.1597967>
- Li, J., Marbley, A. F., Bradley, L. J., & Lan, W. (2016). Attitudes toward seeking professional counseling services among Chinese international students: Acculturation, ethnic identity, and English proficiency. *Journal of Multicultural Counseling and Development, 44*(1), 65–76. <https://doi.org/10.1002/jmcd.12037>
- Li, M., Su, H., Liao, Z., Qiu, Y., Chen, Y., Zhu, J., Pei, Y., Jin, P., Xu, J., & Qi, C. (2021). Gender differences in mental health disorder and substance abuse of Chinese international college students during the COVID-19 pandemic. *Frontiers in Psychiatry, 12*, 1–9. <https://doi.org/10.3389/fpsyg.2021.710878>
- Li, Z., Heath, M. A., Jackson, A. P., Allen, G. E. K., Fischer, L., & Chan, P. (2017). Acculturation experiences of Chinese international students who attend American universities. *Professional Psychology: Research and Practice, 48*(1), 11–21. <https://doi.org/10.1037/pro0000117>
- Lian, Z., & Wallace, B. C. (2020). Prevalence of past-year mental disorders and its correlates among Chinese international students in US higher education. *Journal of American College Health, 68*(2), 176–184. <https://doi.org/10.1080/07448481.2018.1538147>
- Lian, Z., Wallace, B. C., & Fullilove, R. E. (2020). Mental health help-seeking intentions among Chinese international students in the US higher education system: The role of coping self-efficacy, social support, and stigma for seeking psychological help. *Asian American Journal of Psychology, 11*(3), 147–157. <https://doi.org/10.1037/aap0000183>
- Liao, K. Y. H., Wei, M., Tsai, P. C., Kim, J., & Cheng, H. L. (2023). Language discrimination, interpersonal shame, and depressive symptoms among international students with Chinese heritage: Collective self-esteem as a buffer. *Counselling Psychology Quarterly, 36*(4), 774–795. <https://doi.org/10.1080/09515070.2023.2164845>
- Lieber, E., Chin, D., Nihira, K., & Mink, I. T. (2001). Holding on and letting go: Identity and acculturation among Chinese immigrants. *Cultural Diversity and Ethnic Minority Psychology, 7*(3), 247–261. <https://doi.org/10.1037/1099-9809.7.3.247>
- Lien, P. (2021). Tracing roots of attitudes toward race and affirmative action among immigrant Chinese Americans: Learning from undergraduate international students. *Journal of Diversity in Higher Education. https://doi.org/10.1037/dhe0000319*
- Lin, J., & Dmitrieva, J. (2019). Cultural orientation moderates the association between desired affect and depressed mood among Chinese international students living in the United States. *Emotion, 19*(2), 371–375. <https://doi.org/10.1037/emo0000415>
- Lin, J., Guo, T., Becker, B., Yu, Q., Chen, S.-T., Brendon, S., Hossain, M. M., Cunha, P. M., Soares, F. C., Veronese, N., Yu, J. J., Grabovac, I., Smith, L., Yeung, A., Zou, L., & Li, H. (2020). Depression is associated with moderate intensity physical activity among college students during the COVID-19 pandemic: Differs by activity level, gender and gender role. *Psychology Research and Behavior Management, 13*, 1123–1134. <https://doi.org/10.2147/PRBM.S277435>
- Liu, J. M., & Peng, R. J. (2024). Mobility Repertoires: How Chinese Overseas Students Overcame Pandemic-Induced Immobility. *The International Migration Review, 58*(2), 545–572. <https://doi.org/10.1177/01979183231170835>
- Liu, S., & Wei, M. (2020). Cognitive flexibility, relativistic appreciation, and ethnocultural empathy among Chinese international students. *The Counseling Psychologist, 48*(4), 583–607. <https://doi.org/10.1177/0011000019900558>
- Liu, S., He, L., Wei, M., Du, Y., & Cheng, D. (2022). Depression and anxiety from acculturative stress: Maladaptive perfectionism as a mediator and mindfulness as a moderator. *Asian American Journal of Psychology, 13*(2), 207–216. <https://doi.org/10.1037/aap0000242>
- Liu, T., Wong, Y. J., & Tsai, P. C. (2016). Conditional mediation models of intersecting identities among female Asian international students. *The Counseling Psychologist, 44*(3), 411–441. <https://doi.org/10.1177/0011000016637200>
- Lovibond, P. F., & Lovibond, S. H. (1995). The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. *Behaviour Research and Therapy, 33*(3), 335–343. [https://doi.org/10.1016/0005-7967\(94\)00075-U](https://doi.org/10.1016/0005-7967(94)00075-U)
- Ludden, D. C. Jr (2019). *A history of modern psychology: The quest for a science of the Mind*. Sage.
- Ma, S., Zhu, Y., & Bresnahan, M. (2021). Chinese international students' face concerns, self-stigma, linguistic factors, and help-seeking intentions for mental health. *Health Communication, 37*(13), 1631–1639. <https://doi.org/10.1080/10410236.2021.1910167>

- Mesler, R. M., Leary, R. B., & Montford, W. J. (2022). The relationships between masculine gender role discrepancy, discrepancy stress and men's health-related behavior. *Personality and Individual Differences, 184*, 1-13. <https://doi.org/10.1016/j.paid.2021.111205>
- Meyers, L. S., Gamst, G., & Guarino, A. J. (2017). *Applied multivariate research: Design and interpretation* (3rd ed.). Sage.
- Mills, S. D., & Murray, K. E. (2017). A cross-cultural evaluation of ethnic identity exploration and commitment. *Journal of College Student Development, 58*(3), 315-332. <https://doi.org/10.1353/csd.2017.0025>
- Nam, B. H., Marshall, R. C., Tian, X., & Jiang, X. (2021). Why universities need to actively combat sinophobia: Racially-traumatic experiences of Chinese international students in the United States during COVID-19. *British Journal of Guidance & Counselling, 50*(5), 1-15. <https://doi.org/10.1080/03069885.2021.1965957>
- Pan, J. Y., Wong, D. F. K., Chan, C. L. W., & Joubert, L. (2008). Meaning of life as a protective factor of positive affect in acculturation: A resilience framework and a cross-cultural comparison. *International Journal of Intercultural Relations, 32*(6), 505-514. <https://doi.org/10.1016/j.ijintrel.2008.08.002>
- Paradies, Y. (2006). A systematic review of empirical research on self-reported racism and health. *International Journal of Epidemiology, 35*, 888-901. <https://doi.org/10.1093/ije/dy1056>
- Phinney, J. S., & Alipuria, L. L. (1990). Ethnic identity in college students from four ethnic groups. *Journal of Adolescence, 13*(2), 171-183. [https://doi.org/10.1016/0140-1971\(90\)90006-S](https://doi.org/10.1016/0140-1971(90)90006-S)
- Phinney, J. S., & Ong, A. D. (2007). Conceptualization and measurement of ethnic identity: Current status and future directions. *Journal of Counseling Psychology, 54*(3), 271-281. <https://doi.org/10.1037/0022-0167.54.3.271>
- Phinney, J. S., Horenczyk, G., Liebkind, K., & Vedder, P. (2001). Ethnic identity, immigration, and well-being: An interactional perspective. *Journal of Social Issues, 57*(3), 493-510. <https://doi.org/10.1111/10022-4537.00225>
- Priess, H. A., Lindberg, S. M., & Hyde, J. S. (2009). Adolescent gender-role identity and mental health: Gender intensification revisited. *Child Development, 80*(5), 1531-1544. <https://doi.org/10.1111/j.1467-8624.2009.01349.x>
- Qi, W., Gabriel, Wang, K. T., Pincus, A. L., & Wu, L. Z. (2018). Interpersonal problems and acculturative stress over time among Chinese international students from mainland China and Taiwan. *Asian American Journal of Psychology, 9*(3), 237-246. <https://doi.org/10.1037/aap0000119>
- Qin, D. B. (2009). Being "good" or being "popular": Gender and ethnic identity negotiations of Chinese immigrant adolescents. *Journal of Adolescent Research, 24*(1), 37-66. <https://doi.org/10.1177/0743558408326912>
- Qin, D. B., Liu, S., Xie, M., & Huang, Q. (2022). Resilience, culture, gender and identity construction of first-year female Chinese international students in the United States. *Research in Human Development, 19*(3-4), 143-163. <https://doi.org/10.1080/15427609.2022.2160185>
- Ruble, R. A., & Zhang, Y. B. (2013). Stereotypes of Chinese international students held by Americans. *International Journal of Intercultural Relations, 37*(2), 202-211. <https://doi.org/10.1016/j.ijintrel.2012.12.004>
- Ryder, A. G., Alden, L. E., & Paulhus, D. L. (2000). Is acculturation unidimensional or bidimensional? A head-to-head comparison in the prediction of personality, self-identity, and adjustment. *Journal of Personality and Social Psychology, 79*(1), 49-65. <https://doi.org/10.1037/0022-3514.79.1.49>
- Sandhu, D. S., & Asrabadi, B. R. (1994). Development of an Acculturative Stress Scale for International Students: Preliminary findings. *Psychological Reports, 75*(1), 435-448. <https://doi.org/10.2466/pr0.1994.75.1.435>
- Stamatis, C. A., Broos, H. C., Hudiburgh, S. E., Dale, S. K., & Timpano, K. R. (2022). A longitudinal investigation of COVID-19 pandemic experiences and mental health among university students. *British Journal of Clinical Psychology, 61*(2), 385-404. <https://doi.org/10.1111/bjc.12351>
- Stark-Wroblewski, K., Yanico, B. J., & Lupe, S. (2005). Acculturation, internalization of western appearance norms, and eating pathology among Japanese and Chinese international student women. *Psychology of Women Quarterly, 29*(1), 38-46. <https://doi.org/10.1111/j.1471-6402.2005.00166.x>
- Straiton, M. L., Hjelmeland, H., Grimholt, T. K., & Dieserud, G. (2013). Selfharm and conventional gender roles in women. *Suicide and Life-Threatening Behavior, 43*(2), 161-173. <https://doi.org/10.1111/sltb.12005>

- Su, Z., McDonnell, D., Shi, F., Liang, B., Li, X., Wen, J., Cai, Y., Xiang, Y. T., & Yang, L. (2021). Chinese international students in the United States: The interplay of students' acculturative stress, academic standing, and quality of life. *Frontiers in Psychology, 12*, 1–8. <https://doi.org/10.3389/fpsyg.2021.625863>
- Suh, H. N., Flores, L. Y., & Wang, K. T. (2019). Perceived discrimination, ethnic identity, and mental distress among Asian international students in Korea. *Journal of Cross-Cultural Psychology, 50*(8), 991–1007. <https://doi.org/10.1177/0022022119874433>
- Sun, X., Hall, G. C. N., DeGarmo, D. S., Chain, J., & Fong, M. C. (2021). A longitudinal investigation of discrimination and mental health in Chinese international students: The role of social connectedness. *Journal of Cross-Cultural Psychology, 52*(1), 61–77. <https://doi.org/10.1177/0022022120979625>
- Syed, M., Walker, L. H. M., Lee, R. M., Umaña-Taylor, A. J., Zamboanga, B. L., Schwartz, S. J., Armenta, B. E., & Huynh, Q.-L. (2013). A two-factor model of ethnic identity exploration: Implications for identity coherence and well-being. *Cultural Diversity and Ethnic Minority Psychology, 19*(2), 143–154. <https://doi.org/10.1037/a0030564>
- Tian, L., McClain, S., Moore, M. M., & Lloyd, H. (2019). An examination of ethnic identity, self-compassion, and acculturative stress in Asian international students. *Journal of International Students, 9*(2), 635–660. <https://doi.org/10.32674/jis.v9i2.617>
- Torres, L., & Ong, A. D. (2010). A daily diary investigation of Latino ethnic identity, discrimination, and depression. *Cultural Diversity and Ethnic Minority Psychology, 16*(4), 561–568. <https://doi.org/10.1037/a0020652>
- Torres, L., Yznaga, S. D., & Moore, K. M. (2011). Discrimination and Latino psychological distress: The moderating role of ethnic identity exploration and commitment. *American Journal of Orthopsychiatry, 81*(4), 526–534. <https://doi.org/10.1111/j.1939-0025.2011.01117.x>
- Tsai, J. L., Ying, Y. W., & Lee, P. A. (2001). Cultural predictors of self-esteem: A study of Chinese American female and male young adults. *Cultural Diversity and Ethnic Minority Psychology, 7*(3), 284–297. <https://doi.org/10.1037/1099-9809.7.3.284>
- Tsai, P. C., & Wei, M. (2018). Racial discrimination and experience of new possibilities among Chinese international students. *The Counseling Psychologist, 46*(3), 351–378. <https://doi.org/10.1177/001100018761892>
- Tummala-Narra, P., Li, Z., Yang, E. J., Xiu, Z., Cui, E., & Song, Y. (2021). Intergenerational family conflict and ethnic identity among Chinese American college students. *American Journal of Orthopsychiatry, 91*(1), 36–49. <https://doi.org/10.1037/ort0000515>
- U.S. Commission on Civil Rights (2023). *The federal response to anti-Asian racism in the United States: 2023 statutory enforcement report*. <https://www.usccr.gov/files/2023-03/2023-Statutory-Enforcement-Report.pdf>
- Wang, C. C. D., & Mallinckrodt, B. (2006). Acculturation, attachment, and psychosocial adjustment of Chinese/Taiwanese international students. *Journal of Counseling Psychology, 53*(4), 422–433. <https://doi.org/10.1037/0022-0167.53.4.422>
- Wang, K. T., Wong, Y. J., & Fu, C. C. (2013). Moderation effects of perfectionism and discrimination on interpersonal factors and suicide ideation. *Journal of Counseling Psychology, 60*(3), 367–378. <https://doi.org/10.1037/a0032551>
- Wang, Q., Chiang, T. F., & Xiao, J. J. (2024). Attitude toward gender inequality in China. *Humanities and Social Sciences Communications, 11*(1). <https://doi.org/10.1057/s41599-024-02857-1>
- Wei, M., Heppner, P. P., Mallen, M. J., Ku, T. Y., Liao, K. Y. H., & Wu, T. F. (2007). Acculturative stress, perfectionism, years in the United States, and depression among Chinese international students. *Journal of Counseling Psychology, 54*(4), 385–394. <https://doi.org/10.1037/0022-0167.54.4.385>
- Wei, M., Ku, T. Y., Russell, D. W., Mallinckrodt, B., & Liao, K. Y.-H. (2008). Moderating effects of three coping strategies and self-esteem on perceived discrimination and depressive symptoms: A minority stress model for Asian international students. *Journal of Counseling Psychology, 55*(4), 451–462. <https://doi.org/10.1037/a0012511>
- Wei, M., Liang, Y. S., Du, Y., Botello, R., & Li, C. I. (2015). Moderating effects of perceived language discrimination on mental health outcomes among Chinese international students. *Asian American Journal of Psychology, 6*(3), 213–222. <https://doi.org/10.1037/aap0000021>
- Wei, M., Liao, K. Y. H., Heppner, P. P., Chao, R. C. L., & Ku, T. Y. (2012a). Forbearance coping, identification with heritage culture, acculturative stress, and psychological distress among Chinese international students. *Journal of Counseling Psychology, 59*(1), 97–106. <https://doi.org/10.1037/a0025473>

- Wei, M., Tsai, P. C., Chao, R. C. L., Du, Y., & Lin, S. P. (2012c). Advisory Working Alliance, Perceived English Proficiency, and Acculturative Stress. *Journal of Counseling Psychology, 59*(3), 437–448. <https://doi.org/10.1037/a0028617>
- Wei, M., Wang, K. T., Heppner, P. P., & Du, Y. (2012b). Ethnic and mainstream social connectedness, perceived racial discrimination, and posttraumatic stress symptoms. *Journal of Counseling Psychology, 59*(3), 486–493. <https://doi.org/10.1037/a0028000>
- Wong, Y. J., Tsai, P. C., Liu, T., Zhu, Q., & Wei, M. (2014). Male Asian international students' perceived racial discrimination, masculine identity, and subjective masculinity stress: A moderated mediation model. *Journal of Counseling Psychology, 61*(4), 560–569. <https://doi.org/10.1037/cou0000038>
- World Health Organization (2024). *Clinical descriptions and diagnostic requirements for ICD-11 mental, behavioural and neurodevelopmental disorders*. World Health Organization
- Wu, M. Y. H., Huang, S. Y., Chang, J. H., Tsai, P. H., & Chen, H. C. (2023). Undergoing acculturation: The effects of bicultural identity on the eudaimonic well-being of Chinese students in the United States. *Current Psychology: A Journal for Diverse Perspectives on Diverse Psychological Issues*. <https://doi.org/10.1007/s12144-023-04895-5>
- Xie, M., Qin, D. B., Liu, S., Duan, Y., Sato, M., & Tseng, C. (2020). Crazy rich Chinese? A mixed-methods examination of perceived stereotypes and associated psychosocial adaptation challenges among Chinese international students in the United States. *Applied Psychology: Health and Well-Being, 13*(3), 653–676. <https://doi.org/10.1111/aphw.12233>
- Xu, H., O'Brien, W. H., & Chen, Y. (2020). Chinese international student stress and coping: A pilot study of acceptance and commitment therapy. *Journal of Contextual Behavioral Science, 15*, 135–141. <https://doi.org/10.1016/j.jcbs.2019.12.010>
- Xu, Y., Gibson, D., Pandey, T., Jiang, Y., & Olsoe, B. (2021). The lived experiences of Chinese international college students and scholars during the initial COVID-19 quarantine period in the United States. *International Journal for the Advancement of Counselling, 43*(4), 534–552. <https://doi.org/10.1007/s10447-021-09446-w>
- Yan, K., & Berliner, D. C. (2011). Chinese international students in the United States: Demographic trends, motivations, acculturation features and adjustment challenges. *Asia Pacific Education Review, 12*(2), 173–184. <https://doi.org/10.1007/s12564-010-9117-x>
- Yasuda, T., & Duan, C. (2002). Ethnic identity, acculturation, and emotional well-being among Asian American and Asian international students. *Asian Journal of Counselling, 9*(1–2), 1–26
- Ye, J. (2006). An examination of acculturative stress, interpersonal social support, and use of online ethnic social groups among Chinese international students. *Howard Journal of Communications, 17*(1), 1–20. <https://doi.org/10.1080/10646170500487764>
- Yip, T., & Fuligni, A. J. (2002). Daily variation in ethnic identity, ethnic behaviors, and psychological well-being among American adolescents of Chinese descent. *Child Development, 73*(5), 1557–1572. <https://doi.org/10.1111/1467-8624.00490>
- Yu, L., & Xie, D. (2008). The relationship between desirable and undesirable gender role traits, and their implications for psychological well-being in Chinese culture. *Personality and Individual Differences, 44*(7), 1517–1527. <https://doi.org/10.1016/j.paid.2008.01.008>
- Yu, Y. (2011). Reconstruction of gender role in marriage: Processes among Chinese immigrant wives. *Journal of Comparative Family Studies, 42*(5), 651–668. <https://doi.org/10.2307/41604477>
- Yuan, M. (2022). Five Academic Challenges of Chinese International Students in U.S Higher Education: Educational System Adjustment and Classroom Transition. *Highlights in Business, Economics and Management, 4*, 311–319. <https://doi.org/10.54097/hbem.v4i.3508>
- Zhang, J., & Allen, K. R. (2019). Constructions of masculinity and the perception of interracial relationships among young male Chinese international students and scholars in the United States. *Journal of Family Issues, 40*(3), 340–362. <https://doi.org/10.1177/0192513X18809751>
- Zhang, J., & Goodson, P. (2011). Acculturation and psychosocial adjustment of Chinese international students: Examining mediation and moderation effects. *International Journal of Intercultural Relations, 35*(5), 614–627. <https://doi.org/10.1016/j.ijintrel.2010.11.004>
- Zhang, N. (2006). Gender role egalitarian attitudes among Chinese college students. *Sex Roles: A Journal of Research, 55*(7–8), 545–553. <https://doi.org/10.1007/s11199-006-9108-x>
- Zhang, Y., & Liu, H. (2021). Individual's gender ideology and happiness in China. *Chinese Sociological Review, 54*(3), 252–277. <https://doi.org/10.1080/21620555.2021.1871727>