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Gender Differences in the Acculturative Stress of International Students: A Meta-Analysis

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ABSTRACT

This meta-analysis examines gender differences in acculturative stress among international students. Despite numerous studies on cultural adjustment, inconsistencies persist regarding gender differences in acculturative stress. This study synthesizes findings from 12 empirical studies. Comprehensive searches across databases, including institutional libraries, Google Scholar, PsycINFO, ScienceDirect, and ResearchGate, were conducted. Studies were categorized by geographic location, publication type, sample size, instruments, and participant age. The meta-analysis revealed no significant differences in acculturative stress levels between male and female international students. These findings suggest the need for further research on gender differences and other variables related to acculturative stress. Understanding these variables could enhance interventions and support international students' well-being and adaptation.

Keywords: Acculturative stress, culture, gender differences, international students, meta-analysis

Thousands of international students travel from different parts of the world yearly to complete their studies abroad and obtain degrees from universities and colleges. According to the *Open Doors Report*, over 1 million international students were enrolled in U.S. institutions during the 2022/2023 academic year, marking a 12% increase from the prior academic year. Additionally, new international student enrollments grew by 14%, with 298,523 new students joining U.S. institutions, as seen in the most recent data (IIE, 2023). This contributes to diversity, enriching the learning experience for both local and international students and fostering a

more inclusive and globally aware academic environment. However, international students face challenges and difficulties adapting to the new culture. These challenges include but are not limited to, language, customs, financial difficulties, academic pressures, homesickness, and others. Consequently, anxiety, depression, and culture shock can occur (Oyeniya et al., 2021).

Acculturation refers to the wide range of changes that occur when there is contact between cultures (Lee, 2014). Acculturation can be defined as the process of cultural change and adjustment to a new culture, which happens to people when they interact with the new culture (Gibson, 2001). It also refers to changes in the behavior and values of people due to their interactions in a new culture (Kagan & Cohen, 1990). In addition, acculturation stress is considered one of the most threatening problems faced by international students and negatively affects them academically, socially, and psychologically. Acculturative stress is defined as "one kind of stress in which the stressors are identified as having their source in the process of acculturation, a particular set of stress behaviors that occur during acculturation, such as lowered mental health status (especially confusion, anxiety, depression), feelings of marginality, and alienation, heightened psychosomatic symptoms and identity confusion" (Berry, 1995, p. 479). Furthermore, Berry and colleagues (1987) described acculturative stress as the poor physical and psychosocial health of people adjusting to a new culture and interacting in an environment that lacks the strength of their usual cultural connections, status, and social support. Experiencing pressure to adapt to a different culture can cause acculturative stress. In academic settings, international students may view the new culture as a threat to their previous way of life. For example, using a new language, adapting to a new educational system, practicing new cultural behaviors, and perhaps abandoning previous cultural beliefs and values can pose difficult and challenging situations for international students engaging with other cultures (Ayoob et al., 2011).

Several students' demographic characteristics, such as gender, marital status, age, and educational status, can be associated with their acculturative stress levels. Gender is one of the most prominent of these factors. The results related to gender and acculturative stress are mixed and not yet well-established (Gebregergis, 2018). It has been suggested that males and females differ in how they perceive acculturative stress (Ayoob et al., 2011). Gender plays a significant role in the stress process, affecting both the perception of a situation as stressful, coping responses, and health outcomes resulting from stress reactions (Matud, 2004). Overall, understanding demographic factors, including gender, and their impact on acculturative stress is essential for designing effective interventions and support systems to help people overcome cultural adjustment difficulties and enhance their well-being.

However, the literature on international student adjustment remains inconsistent regarding gender differences in adjustment problems, especially acculturative stress. Thus, more studies are needed to explore gender differences and acculturative stress among international students. Therefore, the present study investigates gender differences in acculturative stress among international students within the host context. To bridge the gap in the previous literature, a

meta-analysis was conducted using 12 retrieved empirical studies to explore gender differences in acculturative stress across various study feature variables, including geographic locations, instruments, sample sizes, and mean age.

Research Questions

The following research questions were proposed:

RQ1: Are there gender differences in the experience of acculturative stress among international students within the host context?

RQ2: To what extent do these variables (geographical location, instrument used, sample size, and average age) influence gender differences in acculturative stress among international students?

LITERATURE REVIEW

Acculturative Stress Factors of International Students

Acculturative stress is one of the prominent challenges faced by international students. Some of these stressors can be caused by rejection and identity threats, which constitute social obstacles that prevent them from adapting or acculturating.

Yu et al. (2014) conducted a study on 567 international students at universities in Wuhan to explore the acculturative stress of international students in China and its influential factors. The results revealed external and internal sources of acculturative stress. The external sources consist of three components linked to each other: deprivation of opportunities, identity threat, and rejection. The internal sources include the conflict between cultural values and the lack of self-confidence and cultural competence. In addition, Iorga et al. (2020) argued that there are many factors associated with acculturative stress. They conducted research on 265 international students at a public medical university in Romania to determine these factors. One of the leading factors associated with acculturative stress is comfort level in terms of language, climate, and food. The study also revealed that hatred, rejection, and fear are significantly associated with low levels of comfort, causing acculturative stress and perceived discrimination.

Moreover, social and demographic factors may be a significant source of acculturative stress. Gebregergis (2018) investigated the main sources of acculturative stress and their associations with sociodemographic factors. The results revealed that age, previous travel experience, language proficiency, interaction with local students, educational level, and financial support were significantly related to international students' acculturative stress levels. This means that younger international students and students with previous travel experience less acculturative stress. International students who are able to engage with local students and use the language efficiently in communication are less likely to experience acculturative stress. The educational level also plays a role in the acculturation process, as the results revealed that international graduate students (master's and doctoral) have a higher level of acculturative stress than

undergraduate students do. This may be due to the difference in the number of academic tasks required of graduate students. Similarly, Talwar et al. (2022) conducted a study of 208 international students at a Malaysian university to examine acculturative stress levels and discover sociodemographic factors associated with acculturative stress. The results revealed that acculturative stress levels were high among most international students who reported feelings of discrimination, rejection, homesickness, and fear. The results also revealed that family support, year of study, and poor language proficiency were essential factors related to cultural stress among students. The length of stay or number of years the student has spent in the host country also plays a role in cultural adaptation to a new environment. Thus, as the length of stay increases, students gain greater knowledge of the environment and culture in the host country, which can lead to a decrease in acculturative stress levels.

Xie and Ridley (2024) explored three-way interactions between Chinese international students' acculturative stress, proactive coping, and future time perspective in predicting their subjective well-being. The participants were 198 undergraduate and graduate students attending U.S. universities who completed an online survey. The study results indicated that acculturative stress is negatively associated with subjective well-being. In addition, the analysis of the subscales of acculturative stress indicated that language insufficiency, social isolation, and academic pressure were significantly correlated with well-being. These findings suggest that individuals who have low levels of stress in these aspects are likely to have more positive emotions, such as excitement and satisfaction. However, not all studies have reported a significant relationship between acculturative stress and academic performance. For example, Yun and Greenwood (2021) reported no significant associations between acculturative stress and sleep quality or between acculturative stress and academic performance in international students. They suggested that international students, particularly those with greater academic ability, may have developed coping mechanisms or received adequate academic support, which could explain the lack of a significant relationship in their studies. These findings contrast with earlier research identifying a strong link between acculturative stress and academic difficulties. In addition, Soufi Amlashi et al. (2024) conducted a systematic review and meta-analysis on the relationship between acculturative stress and psychological outcomes among international students. Their synthesis of 29 studies, with a combined sample size of 7,247 participants, revealed that higher levels of acculturative stress are significantly linked to increased symptoms of anxiety, depression, and overall psychological distress. The authors emphasize the need for targeted interventions to mitigate these stressors and enhance the well-being of international students.

Furthermore, Desa et al. (2012) studied postgraduate students at the School of Psychology and Human Development, University Kebangsaan, Malaysia. Their study aimed to explore the type of acculturative stress that most international students experience. Four aspects of acculturative stress, namely, social, attitudinal, family, and environmental, were measured. The results indicated that the environment and attitudes were the international students' most common sources of acculturative stress. With respect to the environment, many

international students face challenges and difficulties related to adapting to a new environment and educational system. In addition, international students' negative attitudes toward the host country affect their acculturative stress levels, leading to difficulty adjusting and feelings of discomfort and dissatisfaction. However, positive attitudes are often linked to better adjustment and a reduced level of stress.

A longitudinal study conducted by Koo et al. (2021) on first-year international college students was conducted to examine their experiences with acculturative stress and adjustment during their first year of enrollment in the U.S. The results revealed that social interactions and English language proficiency are the main factors associated with acculturative stress among international students. Acculturative stress and difficulties adapting were also negatively associated with social interactions and the use of the English language.

In summary, the findings of the previous study emphasize several factors impacting acculturative stress levels among international students. Notably, social interactions and English language proficiency are significant factors in this stress. Additionally, demographic factors, such as age and educational level, along with travel experiences, length of stay, attitudes, and the environment, were explored as essential elements impacting the acculturation process. Additionally, self-confidence, adequate intercultural communication skills, and the avoidance of conflicting values play a protective role against acculturative stress.

Acculturative Stress between Genders

Although there are mixed results in previous studies on gender differences in acculturative stress, the results of some studies have shown that there are statistically significant differences between the genders. One of these studies by Castillo et al. (2015) focused on 1,004 Latino college students in the United States. The participants completed the Multidimensional Acculturative Stress Inventory (MASI; Rodriguez et al., 2002) to measure their levels of acculturative stress. The results showed that both males and females suffered from acculturative stress. However, Latino male students have higher levels of acculturative stress than female students do. The authors of the study mentioned that one possible explanation for this is socialization in Latino culture and the sense of shame that males may feel when asking for help. Therefore, seeking help is linked to their weakness, which may hinder them from adapting to the new environment and culture. Similarly, another study by Mahmood and Burke (2018) investigated acculturative stress levels and certain demographic factors among 413 international students in a nonmetropolitan university environment in the United States. The results revealed that male students had higher acculturative stress scores than females did. Thus, males are more likely to be prone to sociocultural adaptation difficulties and face more challenges in adjusting to the academic environment. In addition, Talwar et al. (2022) examined the levels of acculturation stress among 208 international students enrolled in a Malaysian

university. The acculturative Stress Scale for International Students (ASSIS; Sandhu & Asrabadi, 1994) was administered. The results indicate that male students had significantly higher ASSIS scores than females did. Finally, Koo et al. (2021) conducted a longitudinal study to examine the acculturative stress and adjustment experiences of international students during their first year of enrollment in the U.S. The findings indicate that male students with lower socioeconomic backgrounds had higher levels of acculturative stress than their female peers did at the end of their first year.

In contrast, some previous studies have shown that female international students experience a higher level of acculturative stress than males do. Ayoob et al. (2011) carried out a study to examine gender differences in Acculturative Stress and Health among 219 Kashmiri graduate students in India. Their acculturative stress levels were measured via the Social, Attitudinal, Familial, and Environmental Scale (SAFE-SF; Mena, Padilla, & Maldonado, 1987). The results indicated that there was a significant difference between genders in acculturative stress, and female students experienced greater accurate stress than male students did. Accordingly, compared with male students, female students reported high levels of anxiety, insomnia, and depression. The researchers stated that these results can be explained by the fact that female students in the Indian cultural context may have more cultural restrictions, less freedom, and less insecurity than male students. In addition, Kefayati (2016) examines the predictors of acculturative stress in international students studying at Eastern Mediterranean University, Cyprus. The participants were 174 Iranian and Nigerian international students aged 18--35 years. The study revealed that female students experienced more acculturative stress than male students did. One possible explanation for these results is that female students have a greater level of homesickness and guilt and, therefore, greater difficulty adapting to the new environment than males do. Nigerian female students also reported higher levels of perceived discrimination. Another study by Hahn (2010) on 511 international students studying at a northeastern university in the USA investigated the levels of stress and coping experienced by gender. The results indicate that female students experienced greater cultural stress than male students did. Finally, Cong et al. (2024) explored the impact of various factors, including gender, on the acculturative stress experienced by Asian international students in the United States and compared these stress levels before and during the COVID-19 pandemic. Using data from 204 students across ten universities and colleges, the study revealed that English proficiency and gender were significant predictors of acculturative stress. Higher perceived English proficiency was associated with lower acculturative stress, whereas female students reported higher stress levels than their male counterparts did. Moreover, the pandemic exacerbated feelings of sadness and perceived discrimination among these students. The authors suggested that a possible reason for this difference is that females may be more vulnerable during acculturation because of their lower social status and multiple role expectations, leading to cultural conflicts and maladaptation. Additionally, females are more expressive and efficient in processing emotions, especially negative emotions, making them more likely to report stress.

On the other hand, other studies suggest that there are no statistically significant differences between genders in acculturative stress. Misra et al. (2003) conducted research on 143 international students in the USA to examine whether there are gender differences in life and academic stress. The findings indicated that there was no significant difference in cultural adjustment or academic stress by gender. The participants reported some difficulties regarding cultural adjustments, such as American food, social interactions, cultural norms, and some racial discrimination. The results also indicated that female students had greater behavioral, emotional, and physiological reactions to stressors than male students did. Another study by Gebregergis (2018) was conducted on 506 international students in China. The aim of this study was to investigate whether students' levels of acculturative stress differ on the basis of their sociodemographic characteristics. However, the study revealed no statistically significant differences in the scores of males and females. Similarly, Gholamrezai (1995) carried out research recruiting 173 international students from 11 nationalities in Australia to explore the role of sociodemographic factors in international students' acculturative stress. The researcher compared males' and females' acculturative stress scores and found no statistically significant differences. The researcher argued that gender is not a valid explanatory factor for observed differences in acculturative stress because it is confounded with other background characteristics.

While much research has explored the factors contributing to acculturative stress, the findings regarding gender differences have been notably inconsistent. The results of studies investigating gender differences in acculturative stress have been mixed, with some research suggesting that male students experience greater acculturative stress, whereas others indicate the opposite or report no significant difference at all. These inconsistencies can be attributed to several factors, which are important to understand when interpreting both the literature and the findings of this meta-analysis. One key factor is the role of cultural contexts and societal gender norms, which may shape how males and females experience acculturative stress. In some cultures, traditional gender roles impose stricter expectations on one gender, contributing to heightened stress during the process of acculturation. For example, research indicates higher levels of acculturative stress among male international students, often attributed to social norms, shyness in seeking help, and socioeconomic challenges (Castillo et al., 2015). Conversely, in societies where women face greater cultural restrictions, female students may encounter more challenges in adapting to a new culture because of limited freedoms or societal expectations, resulting in higher levels of acculturative stress. These increased levels of acculturative stress among female students are often linked to cultural restrictions, homesickness, guilt, and discrimination (Ayoob et al., 2011). The differing cultural norms regarding gender roles may explain the variation in findings across studies conducted in different countries.

Variations in coping mechanisms between genders may also account for some of the mixed findings. For example, men and women often use different coping strategies when dealing with acculturative stress, with women more frequently seeking social support, whereas men may be less likely to ask for help,

especially in cultures where doing so is stigmatized for males (Mahmood & Burke, 2018). Such differences in coping approaches can significantly affect the levels of reported acculturative stress, as those who seek social support often experience lower stress levels than individuals who internalize their struggles.

Another important factor is the methodological differences between studies, which may contribute to the inconsistencies in the reported results. The instruments used to measure acculturative stress, such as the Acculturative Stress Scale for International Students (ASSIS) and other scales, might capture the nuances of stress differently, depending on the context. Additionally, sample sizes and participant demographics, such as level of education, length of stay, and age, can influence the outcomes. Smaller studies with more homogeneous samples may report gender differences than larger, more diverse studies do not (Gebregergis, 2018; Talwar et al., 2022). Research also indicates that gender is not a critical factor in the differences between acculturative stress levels, as other social and background characteristics play essential roles (Gebregergis, 2018).

Therefore, conducting a meta-analysis would help clarify these discrepancies and contribute to a deeper understanding of the role of gender in acculturative stress among international students.

The rationale for conducting a meta-analysis lies in its ability to provide a more holistic and statistically rigorous examination of gender differences in acculturative stress among international students, even in the absence of clear indications from previous studies.

METHOD

A comprehensive search was conducted across multiple databases, including Google Scholar, PsycINFO, ScienceDirect, and ResearchGate, using combinations of keywords such as "Acculturative Stress," "International Students," "Gender Differences," and related terms. Initially, 19 studies that met the general scope of the meta-analysis were retrieved.

After an initial screening of titles and abstracts, studies that did not meet the inclusion criteria were excluded. For inclusion in this meta-analysis, studies had to meet the following criteria:

1. Published in peer-reviewed journals or dissertations.
2. Focused specifically on international students.
3. Acculturative stress was measured via validated instruments (e.g., the Acculturative Stress Scale for International Students [ASSIS]).
4. Reported gender as a variable in their analysis of acculturative stress.

Studies were excluded if they:

1. Focused on nonstudent immigrant populations or other groups such as expatriates.
2. Did not provide sufficient information on gender differences in acculturative stress.
3. Addressed acculturative stress in the context of other demographic factors (e.g., age or marital status) was the primary focus of the study.

4. The acculturative stress score means (M) and standard deviations (SD) for gender comparisons were not reported.

After this screening process, 12 studies that met all the inclusion criteria were selected for full-text review and ultimately included in the final meta-analysis.

Coding process

After the studies were retrieved, each one was systematically coded to investigate the gender differences in the acculturative stress of international students. The coding process involved identifying key study features, including the following:

1. Author and year.
2. Geographic location: USA or other countries.
3. Publication type: Peer-reviewed articles or dissertations.
4. Sample sizes: Small ($N \leq 300$ students) or large ($N > 300$ students).
5. Instruments used: ASSIS or other instruments.
6. Participants' mean age: Below 24 years (e.g., 20, 21, 23) or 24 years and above (e.g., 24, 25, 27, 28).

The coding process was conducted step by step under the guidance of an expert instructor, ensuring consistency through discussions and resolving any discrepancies.

Effect size calculations and statistical analyses

In general, the effect size for each study was calculated as the difference between the mean acculturative stress scores for males and females, divided by the pooled standard deviation. The effect size (*ES*), standard error (*SE*), and weight (*w*) for each study were calculated via Excel software. To ensure accuracy in the calculations, the results were then verified via SPSS, and an additional researcher independently checked the calculations. SPSS was used to conduct all the statistical analyses after individual effect sizes (*ESs*), standard errors (*SEs*), and weights (*ws*) were calculated for all 12 qualifying studies. These analyses included calculating overall effect sizes, *Q* statistics, degrees of freedom (*df*), and both fixed and mixed effects models. The mixed-effects model for the meta-analysis was conducted via SPSS, with alpha values of .05, .01, and .001 used for all the statistical tests.

RESULTS

In this meta-analysis of gender differences in acculturative stress among international students, findings from 12 studies were synthesized. The retrieved articles presented mixed results, with some studies reporting no significant difference between genders in acculturative stress (Gebregergis, 2018; Gholamrezai, 1995; Misra et al., 2003), whereas others have suggested that either males (Castillo et al., 2015; Koo et al., 2021; Lee, 2014; Mahmood & Burke,

2018; Misra & Castillo, 2004; Talwar et al., 2022) or females (Ayoob et al., 2011; Hahn, 2010; Kefayati, 2016) experience greater stress in acculturation.

However, this meta-analysis revealed no significant differences in acculturative stress between male and female international students. The overall random effects model effect size (*ES*) for gender differences in acculturative stress among international students, on the basis of a meta-analysis of 12 studies, was 0.017 (*SE* = 0.075), 95% CI [-0.132, 0.165]. The test of the mean (*Z*) yielded a value of 0.219, indicating that the mean effect size is not significantly different from zero. Therefore, the meta-analysis did not find a statistically significant difference in acculturative stress between genders among international students.

Table 1: Summary of major meta-analyses on gender differences in the acculturation stress of international students

Study ID	Author, Year	ES	SE	W	Geographic Location	Publication Type	Sample Sizes	Instruments	Mean Age
1	Misra & Castillo (2004).	.32	.21	23.70	US	Peer-reviewed article	Small (n=143)	Others	24
2	Misra, Crist & Burant (2003).	-.08	.17	35.09	US	Peer-reviewed article	Small (n=143)	Others	24
3	Mahmood & Burke (2018).	.21	.10	92.69	US	Peer-reviewed article	Large (n=413)	ASSIS	24
4	Castillo et al., (2015)	.16	.07	185.27	US	Peer-reviewed article	Large (n= 1004)	Others	20
5	Ayoob, Singh & Jan (2011).	-.41	.14	53.56	Others (India)	Peer-reviewed article	Small (n=219)	Others	23
6	Lee (2014).	.61	.29	12.20	Others (Ireland)	Dissertation	Small (n=75)	ASSIS	24

Study ID	Author, Year	ES	SE	W	Geographic Location	Publication Type	Sample Sizes	Instruments	Mean Age
7	Gebregergis (2018).	.12	.09	123.74	Others (China)	Peer-reviewed article	Large (n=506)	ASSIS	27
8	Talwar et al., (2022).	.30	.15	43.13	Others (Malaysia)	Peer-reviewed article	Small (n=208)	ASSIS	21
9	Yu et al., (2014).	.03	.09	129.69	Others (China)	Peer-reviewed article	Large (n=336)	ASSIS	23
10	Gholamrezai, (1995).	.00	.15	43.21	Others (Australia)	Dissertation	Small (n=173)	ASSIS	27
11	Kefayat, (2016).	-.63	.16	41.36	Others (Cyprus)	Dissertation	Small (n=174)	ASSIS	24
12	Hahn, (2010).	-.17	.09	127.30	US	Dissertation	Large (n=511)	Others	24

Table 2: Overall effect size

Study ID	K	ES	SE	95% CI		Test Of	Test of heterogeneity in effect sizes	
				Lower	Upper	Z	Q	Df
1	--	0.32	0.20	-0.08	0.72	1.56	--	--
2	--	-0.08	0.16	-0.41	0.24	-0.48	--	--
3	--	0.21	0.10	0.01	0.41	2.06*	--	--
4	--	0.16	0.07	0.01	0.30	2.20*	--	--
5	--	-0.40	0.13	-0.67	-0.13	-2.96*	--	--
6	--	0.61	0.28	0.05	1.17	2.14*	--	--
7	--	0.12	0.08	-0.05	0.29	1.36	--	--
8	--	0.29	0.15	-0.003	0.59	1.93	--	--
9	--	0.02	0.08	-0.14	0.19	0.30	--	--
10	--	0.001	0.15	-0.29	0.29	0.008	--	--
11	--	-0.63	0.15	-0.93	-0.32	-4.05***	--	--
12	--	-0.16	0.08	-0.34	0.006	-1.88	--	--
<i>Overall effect size</i>								
1. fixed	12	0.027	0.0331	-0.038	0.092	0.811	50.28***	11
2. Random	12	0.017	0.075	-0.132	0.165	0.219		

Note. k = number of studies; ES = effect size; SE = standard error; CI = confidence interval. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 3: Subgroup analysis: mixed-effects results

Study Features	<i>K</i>	<i>ES</i>	<i>SE</i>	95% CI		Test Of	Test of	
				Lower	Upper	mean	heterogeneity in	<i>Df</i>
							<i>Q</i>	
<i>By Geographic Location</i>								
1.USA	5	0.07	0.09	-0.10	0.25	0.83	12.99**	4
2.Others	7	-0.02	0.12	-0.26	0.21	-0.21	35.36***	6
Total Between (<i>Q_B</i>)							0.44	1
<i>By Publication</i>								
1.Peer-reviewed article	8	0.08	0.06	-0.05	0.21	1.15	20.30**	7
2.Dissertations	4	-0.10	0.18	-.046	0.26	-0.55	17.53***	3
Total Between (<i>Q_B</i>)							0.85	1
<i>By Sample Sizes</i>								
1.Large	5	0.07	0.06	-0.05	0.20	1.06	11.26**	4
2.Small	7	-0.01	0.15	-0.31	0.28	-0.09	34.22***	6
Total Between (<i>Q_B</i>)							0.25	1
<i>By Instruments</i>								
1.ASSIS	7	0.06	0.10	-0.14	0.27	0.60	28.82***	6
2.Others	5	-0.04	0.11	-0.28	0.18	-0.38	19.75***	4
Total Between (<i>Q_B</i>)							0.48	1
<i>By Mean Age</i>								
1.Below 24	4	0.02	0.12	-0.21	0.26	0.19	16.05**	3
2.At or above 24	8	0.01	0.10	-0.19	0.22	0.15	33.42***	7
Total Between (<i>Q_B</i>)							0.003	1

Note. *k* = number of studies; *ES* = effect size; *SE* = standard error; CI = confidence interval. **p* < .05. ***p* < .01. ****p* < .001.

Although significant heterogeneity was found within each subgroup, the overall effect size (*ES*) remained nonsignificant across all subgroups. Given that the *Q_B* is consistently nonsignificant for all study feature analyses, it appears that no study feature can explain the lack of significance.

In summary, the subgroup analyses did not reveal statistically significant differences in acculturative stress between genders across different categories. However, there was notable heterogeneity in effect sizes within each subgroup, indicating variability in the findings across studies.

DISCUSSION

The results of the present meta-analysis did not yield statistically significant differences in acculturative stress according to sex. These findings suggest that gender may not be a substantial factor in acculturative stress among international students. These findings support several previous studies that reported no significant gender differences in acculturative stress among international students (Gebregergis, 2018; Gholamrezai, 1995; Misra et al., 2003). For example, Mustaffa and Ilias (2013) indicated that gender is not a distinguishing factor for cross-cultural success. Another study revealed that male and female international students do not differ in terms of both sociocultural and psychological adjustment (Rujipak & Limprasert, 2016). However, the results of this study contrast with those of other studies that indicated that either male or female students experienced higher levels of acculturative stress (Castillo et al., 2015; Koo et al., 2021; Lee, 2014; Mahmood & Burke, 2018; Misra & Castillo, 2004; Talwar et al., 2022; Ayooob et al., 2011; Hahn, 2010; Kefayati, 2016). These discrepancies highlight the complexity of the factors influencing acculturative stress and the need for further investigation.

One possible explanation for the lack of significant gender differences in acculturative stress among international students could be the development of differing cultural norms and gender roles in diverse cultural contexts. Cultural norms refer to the social expectations and behaviors caused by cultural contexts. For example, in some cultures, traditional gender norms may view women's roles as caregivers and homemakers who endure extreme sacrifices, whereas in other cultures, they may promote more equal views where men and women share responsibilities equally. These norms can affect various aspects of life, including gender roles, family dynamics, and social interactions (Castillo et al., 2015). As societies become more developed and globalized, traditional gender roles and expectations may change, leading to equal stressors and coping mechanisms between male and female international students. In addition, support services and resources offered by educational institutions and host countries to international students can help relieve stressors and reduce observed gender differences in acculturative stress levels (Gebregergis, 2018). For example, student affairs services could launch initiatives to promote social justice and inclusion among international students. These initiatives should be led by counseling centers, international student services, and offices dedicated to diversity, equity, and inclusion, with additional support from faculty members (Xie & Ridley, 2024). All these developing social dynamics emphasize the need for continued research to understand and address cultural stress among international students.

However, acculturative stress is a complex and multifaceted phenomenon influenced by several factors and is not limited to gender alone. Cultural context, social support networks, language proficiency, academic requirements, and experiences of discrimination can significantly influence an international student's level of acculturative stress. In addition, the measures used in previous studies and self-report questionnaires may not include the full range of these influential factors, leading to the inability to detect significant associations. Moreover, the

characteristics of the participants, including their diverse cultural backgrounds and individual coping strategies, may have contributed to the nonsignificant results with respect to gender. International students can alleviate this stress by enhancing their English skills, developing self-compassion, maintaining a positive outlook, and engaging in meaningful activities (Le & Huyen-Nguyen, 2024). Additionally, social support plays a crucial role in mitigating acculturative stress, acting as a protective factor against life stressors and increasing overall health and wellness (Fedolina & Saptandari, 2024).

Implications

The findings of this study not only contribute to our understanding of acculturative stress among international students but also have significant implications for supporting their well-being within academic institutions. By recognizing that gender may not be a substantial factor in acculturative stress, institutions can develop comprehensive support systems that address the broader needs of all students, regardless of gender. This includes implementing inclusive policies, providing culturally sensitive counseling services, offering orientation programs with language assistance, and organizing diverse cultural events. These initiatives would help relieve acculturative stress and better support overall well-being and academic success.

Longitudinal studies with more comprehensive assessments of acculturative stress and its determinants could provide a deeper understanding of the role of gender and other factors in predicting acculturative stress among international students over time. Exploring additional factors such as cultural identity, discrimination, coping strategies, and social integration could further enhance the understanding of acculturative stress dynamics.

In conclusion, while the study did not find significant gender differences in acculturative stress among international students, the complex interaction between factors indicates the need for continued research to support international students' well-being. By addressing limitations and considering different variables influencing acculturative adjustment, future research can usefully contribute to interventions and policies to enhance the acculturation experience of international students.

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