ATTENUATION OF INTERGROUP ANXIETY THROUGH INTERGROUP CONTACT AND INTERCULTURAL SENSITIVITY: INSIGHTS FROM ASIAN INTERNATIONAL STUDENTS STUDYING IN HUNGARY

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ABSTRACT

International students are particularly vulnerable to mental health challenges, including depression, anxiety, and psychological distress, often at rates significantly higher than those of their domestic counterparts. In light of these pressing mental health concerns, this study primarily sought to investigate whether positive intergroup contact and intercultural sensitivity could serve as effective strategies to attenuate intergroup anxiety among Asian international students studying in Hungary. The study further examined the students' levels of intergroup contact, intercultural sensitivity, and intergroup anxiety. Participants were selected through convenience sampling from the general student population (N = 237) and completed self-report questionnaires assessing these variables. Data were analyzed using both descriptive and inferential statistical techniques, including frequency distribution, Pearson product-moment correlation, and hierarchical multiple regression. The results indicate that while international students experience low to moderate intergroup contact with local individuals, they exhibit higher levels of intercultural sensitivity. Additionally, moderate levels of intergroup anxiety were reported during intercultural interactions. Importantly, the findings reveal that intergroup contact and intercultural sensitivity emerge as essential resources for reducing intergroup anxiety. These results underscore the need for higher education institutions to proactively foster intergroup contact and enhance intercultural sensitivity among their international student populations. The study also discusses implications, limitations, and future research directions.

Keywords: Intergroup contact, Intercultural sensitivity, Intergroup anxiety, Asian international students, Hungary.

INTRODUCTION

Globalization has transformed the landscape of education, offering students more opportunities to select their preferred study destinations. As a result, the international education market has expanded, leading to a significant increase in the mobility of international student sojourners. Statistical reports indicate that by 2020, the number of international students studying across the globe exceeded 6.3 million (Oduwaye et al., 2023). Similarly, since the establishment of the Stipendium Hungaricum scholarship by the Hungarian government in 2013, the number of international students studying in Hungary has grown significantly. According to the Tempus Public Foundation (2020), as cited by Wu and Rudnák (2021), the number of international students in Hungary increased from 11,783 in 2011 to 38,422 in the 2019/2020 academic year. Among Hungarian universities, the University of Debrecen stands out as the institution hosting the largest number of international students, followed by the University of Pécs (Vincze & Bács, 2020). This growing international student presence highlights Hungary's expanding role in global higher education. The influx of students from diverse countries not only enriches the academic and cultural environment of Hungarian universities but also makes international students an increasingly important part of the country's higher education system. As a result, Hungary has become an attractive destination for students seeking quality education and international experiences, cementing its place in the global education landscape. While studying abroad offers numerous benefits, including access to quality education, cultural exposure, and enhanced job prospects, it also presents significant challenges. The unfamiliar social, cultural, and academic environments of host countries can pose serious mental health risks to international students. These challenges often manifest in the form of anxiety, depression, acculturative stress, psychological distress, and intergroup conflicts (e.g., Forbes-Mewett & Sawyer, 2016; Gebregergis et al., 2020; Kim & Kim, 2021; Maharaj et al., 2024).

One of the common mental health issues faced by international students is intergroup anxiety, which arises from social interactions with people from different cultural backgrounds. Intergroup anxiety is defined as "a type of anxiety that people experience when anticipating or engaging in intergroup interactions" (Stephan, 2014). In other words, intergroup anxiety reflects that when individuals from different cultural backgrounds come together and interact, they often experience feelings of fear, discomfort, and apprehension. For example, the daily basis interaction between international students and members of the host society is more likely to elicit feelings of anxiety due to cultural differences, such as language barriers. Unlike social anxiety, intergroup anxiety is specifically tied to situations involving interactions between different cultural or social groups (Stephan, 2014). This anxiety can be triggered by interactions with specific outgroups or by general intergroup encounters. According to Stephan (2014), intergroup anxiety comprises three distinct but interconnected components: affective, cognitive, and physiological. The affective component refers to the negative emotional experiences individuals encounter during intergroup contact. Those experiencing affective intergroup anxiety may feel apprehension, distress, and uneasiness. Research has consistently shown that anxiety-related emotional responses often accompany intergroup interactions (Stephan & Stephan, 1992; Stephan, 2014). The cognitive component involves an individual's negative evaluation of the intergroup interaction, with concerns that the

interaction may lead to undesirable outcomes. Stephan & Stephan (1985) identified four key reasons why people may be anxious about intergroup interactions. First, they may worry about negative psychological consequences, such as feeling embarrassed, confused, fearful, or incompetent. Second, concerns may arise about negative behavioural consequences, such as being discriminated against, exploited, harassed, or physically harmed. Third, individuals may fear being negatively evaluated by members of the outgroup, fearing rejection, negative stereotyping, disrespect, or ridicule. Finally, people may worry about being rejected by members of their group (ingroup) for engaging with members of the outgroup. The physiological component of intergroup anxiety involves physical changes that occur during intergroup interactions, such as heightened galvanic skin responses, increased blood pressure, and elevated cortisol levels. These physiological reactions underscore the tangible impact intergroup anxiety can have on individuals, particularly international students who frequently navigate intercultural environments. Likewise, Karyanta et al. (2024) point out that intergroup anxiety can have significant implications for international students, creating barriers to active participation in both social and academic activities (e.g., reduced engagement in group discussions, campus events, and social gatherings). It can also lead to social isolation, such as difficulty establishing friendships with locals, and increased emotional stress, which may jeopardize their psychological well-being and academic success. Considering the devastating impact of intergroup anxiety on international students' well-being and academic performance, researchers have suggested various personal and situational factors such as personality traits, intergroup contact, interpersonal mindfulness, cross-group friendship and intercultural sensitivity that potentially reduce the adverse outcomes of intercultural contact including intergroup anxiety (e.g., Castiglione et al., 2013; Khukhlaev et al., 2022; Pettigrew & Tropp, 2006; Sari & Yalcinkaya-Alkar, 2022; Stephan & Stephan, 1992; Turner et al., 2014). In this study, we propose that intergroup contact and intercultural sensitivity are critical assets for reducing intergroup anxiety among international students.

Pettigrew and Tropp (2006: 75) conceptualized intergroup contact as "actual face-to-face interaction between members of clearly defined groups". Harwood (2017) further describes intergroup contact as occurring when members of a specific group (the ingroup) communicate with members of another group (the outgroup), emphasizing that intergroup contact is inherently a communicative process. According to Allport (1954: 35), ingroup contact can be defined as "any cluster of people who can use the term we with the same significance". In contrast, an outgroup consists of individuals who do not identify with a particular social category, such as gender, religion, race, ethnicity, or social class (Stephan & Stephan, 1992). Originally, intergroup contact theory focused primarily on ethnic and racial groups, emphasizing direct face-to-face interactions. However, its application and conceptualization have expanded to include various forms of intergroup contact, including direct, indirect, imagined, and mediated interactions, as well as the quantity and quality of contact, and secondary transfer of contact (McKeown & Psaltis, 2017; Pettigrew et al., 2007; Visintin et al., 2016). As a result, individuals can experience multiple forms of contact with different groups (Ramasubramanian & Costantini, 2020). Direct contact involves the quantity and quality of face-to-face interactions between group members. For instance, intergroup friendships represent a high-quality form of contact compared to brief interactions with acquaintances (Pettigrew & Tropp, 2006;

Ramasubramanian & Costantini, 2020). Another type of intergroup contact is mediated contact, which refers to interactions with members of other groups through mass media or computer-based interpersonal communication. Extended contact occurs when ingroup members have weak connections with outgroup members within social media networks (Ramasubramanian & Costantini, 2020). Imagined contact, another form, represents individuals' psychological visualization of positive interactions with members of the outgroup (Ramasubramanian & Costantini, 2020). In this study, we aim to explore the various forms of intergroup contact that international students may experience while interacting with members of the host country. Consequently, our focus will be on general intergroup contact without specifying a particular form.

The second potential personal resource that may alleviate intergroup anxiety is intercultural sensitivity. In the context of the 21st century, characterized by the emergence of a global village, developing intercultural sensitivity is essential for individuals to thrive and secure their place in an increasingly diverse world. The significance of intercultural sensitivity in our rapidly changing environment is thus becoming increasingly evident. Intercultural sensitivity is defined as "an individual's ability to develop a positive emotion toward understanding and appreciating differences that promote appropriate and effective behaviour in intercultural communication" (Chen & Starosta, 1997). This definition highlights that intercultural sensitivity is a dynamic construct comprising six key attributes: self-esteem, self-monitoring, open-mindedness, empathy, interaction involvement, and non-judgment. Consequently, individuals who navigate intercultural environments effectively typically exhibit these six characteristics. Individuals with high intercultural sensitivity often demonstrate elevated self-esteem (Chen & Starosta, 1997). According to Chen & Starosta (1997), while intercultural sensitivity encompasses cognitive, affective, and behavioural components, it primarily focuses on the affective dimension, emphasizing the emotions of individuals. Intercultural knowledge (cognitive) serves as a foundational element for intercultural sensitivity (affective) and contributes to the development of intercultural competence (behavioural). Furthermore, Hammer et al. (2003) describe intercultural sensitivity as "the ability to discriminate and experience cultural differences". Overall, these definitions emphasize the importance of individuals' ability to accurately recognize and respect cultural differences during intercultural interactions and thereby reduce intergroup anxiety.

There are lack of studies that examined the levels of intergroup contact, intercultural sensitivity, and intergroup anxiety. However, one study explored the levels of intercultural sensitivity among international students studying at the Northern University of the Philippines, and the results suggested that the students demonstrated a higher level of intercultural sensitivity in the host society (Arde, 2018). Studies conducted among domestic university students have similarly reported higher levels of intercultural sensitivity (e.g., Chen & Hu, 2023; Magsanay et al., 2024). Although research on the levels of these variables is limited, several studies have observed the effects of intergroup contact and intercultural sensitivity on intergroup anxiety. For example, the general intergroup contact studies support the assumption that intergroup contact is a significant predictor of intergroup anxiety. Individuals with higher levels of positive intergroup contact are more likely to experience lower levels of negative outcomes, such as anxiety, negative attitudes, prejudice, and intergroup conflict during their interactions

with members of different groups (Bentsen, 2022; Islam & Hewstone, 1993; Stephan & Stephan, 1992; Telaku, 2021). These studies suggest that positive intergroup contact can help individuals feel more comfortable and less anxious when engaging with outgroups, thereby reducing intergroup anxiety. In contrast, negative or limited intergroup contact may reinforce existing stereotypes, increase anxiety, and contribute to negative experiences during intergroup interactions. Similarly, research carried out among domestic and international students observed the same result that international students' positive quality contact with the local people reports a reduced level of negative intergroup contact experiences such as anxiety. Specifically, those students report lower levels of intergroup anxiety, which often manifests as discomfort or nervousness during interactions with members of the host community (Gao et al., 2024; Mak et al., 2014). Positive intergroup contact not only reduces negative intergroup experiences but also enhances positive outcomes, such as fostering more positive attitudes, improving subjective well-being, increasing willingness to engage in interactions, and promoting intercultural competence (Gao et al., 2024; Mak et al., 2014; Ye et al., 2023). These findings highlight the importance of encouraging positive social interactions between international students and locals to mitigate potential negative experiences, such as anxiety, prejudice, or isolation, during their time abroad. Intergroup contact theory also posits that face-to-face interactions between members of different groups are more likely to reduce negative intergroup outcomes, such as intergroup anxiety, prejudice, hostility, and perceived threat (Allport, 1954).

Intercultural sensitivity is widely recognized as a critical individual psychological factor influencing intergroup contact experiences and their outcomes, including intergroup anxiety. A study conducted in Türkiye demonstrated that intergroup anxiety served a significant mediator between intercultural sensitivity and positive attitudes toward outgroup members. The findings indicated that members of the interculturally sensitive Turkish local community experienced lower levels of intergroup anxiety, which, in turn, fostered a more positive attitude toward Syrian refugees (Sari & Yalcınkaya-Alkar, 2022). In a similar vein, Rodríguez-Izquierdo (2022) examined the relationship between international experiences and the development of intercultural sensitivity in a sample of 1,645 university students. The study reported a positive correlation between intercultural sensitivity and both mobility experiences and intercultural friendships. This suggests that intercultural sensitivity not only mitigates negative intergroup outcomes but also enhances positive intergroup outcomes, such as the formation of intercultural friendships. Furthermore, several researchers have established that negative expectations regarding intergroup interactions, such as fear of rejection and perceptions of hostility from outgroup members are positively associated with intergroup anxiety (Britt et al., 1996; Brown, 2007; Butz & Plant, 2007). These findings indicate that individuals' feelings of intergroup anxiety are exacerbated by psychological anticipations of negative consequences during intergroup interactions. He et al. (2023) noted that individuals with lower intercultural sensitivity are more susceptible to emotional disturbances such as depression and anxiety. Conversely, this study suggests that students with higher intercultural sensitivity are less likely to experience these emotional difficulties, particularly anxiety and depression. Overall, it appears that intercultural sensitivity plays a crucial role in alleviating intergroup anxiety.

CURRENT STUDY

The increasing globalization of education has led to a significant rise in the number of international students pursuing their studies in Hungary. While this diversity enriches the academic environment, it also poses unique mental health challenges, such as anxiety, depression, and psychological distress, especially when compared with domestic students (Maharaj et al., 2024; Wang et al., 2023). Intergroup anxiety is among these mental health encounters that can adversely impact international students' academic performance, social integration, and overall mental well-being, ultimately limiting their ability to thrive in a foreign educational context (Stephan & Stephan, 1992). When individuals from different cultures come into contact, their intercultural interactions naturally involve emotional responses such as feelings of discomfort, stress, and anxiety (Berry, 2005; Stephan, 2014). Existing literature and theoretical models consistently support the effectiveness of positive intergroup contact and intercultural sensitivity in reducing intergroup anxiety among general immigrant populations. Those immigrants may have different ethnicity or race but they may share a common cultural background. However, this area has received limited attention regarding international student populations who are ethnically and culturally different from domestic students. Therefore, there is a paucity of research on the role of intergroup contact and intercultural sensitivity in decreasing intergroup anxiety among international students. Considering this research gap, the current study was carried out to investigate the levels of intergroup contact and intercultural sensitivity, as well as their roles in reducing intergroup anxiety among Asian international students in Hungary. The findings of this research are expected to provide valuable insights into the relationships between these variables and offer practical recommendations for universities to better support their international students. More specifically, the study proposed the following guiding research questions.

1. What is the degree of intergroup contact, intercultural sensitivity, and intergroup anxiety among Asian international students in Hungary?

2. What is the relationship between intergroup contact and intercultural sensitivity among Asian international students in Hungary?

3. Does intercultural sensitivity significantly predict intergroup anxiety of Asian international students in Hungary?

METHODS

Participants of the study

The sample of the study comprised 237 international students enrolled in undergraduate and postgraduate programs at the University of Debrecen, Hungary. Participants were recruited through a convenience sampling strategy. As summarized in Table 1, the sample included 121 (51.10%) male and 116 (48.90%) female students, with an average age of 23.21 years. The average length of stay of the students in Hungary was 25.40 months. The sample included students at various academic levels: 132 (55.70%) were pursuing bachelor's degrees, 82 (34.60%) were master's students, and 23 (9.70%) were doctoral students. Regarding financial support, 103 students (43.50%) were scholarship recipients, while 134 (56.50%) were self-funded. Before arriving in Hungary, the majority of students reported having international travel experience (n = 179; 75.50%),

whereas 58 students (24.50%) indicated they had no such experience. Regarding their host language skills, most students reported having poor to fair proficiency in the Hungarian language, with only a small number indicating good or very good proficiency. The participants came from a diverse range of Asian countries, including China, India, Russia, Lebanon, Palestine, Syria, Iran, Qatar, the United Arab Emirates, Jordan, Iraq, Pakistan, Israel, Türkiye, South Korea, Kyrgyzstan, Kazakhstan, Uzbekistan, Turkmenistan, Japan, and Indonesia.

Table 1

Frequency Distribution of Characteristics of the Participants

Variable	N	%	N
Sex			237
Male	121	51.10	
Female	116	48.90	
Educational level			237
Bachelor	132	55.70	
Master	82	34.60	
Doctorate	23	9.70	
Source of financial support			237
Scholarship	103	43.50	
Self-support	134	56.50	
Prior Travel Experience			
Yes	179	75.50	
No	58	24.50	
Hungarian Language Skill			237
Poor	142	59.90	
Fair	79	33.30	
Good	13	5.50	
Very good	3	1.30	

Source: Authors' own data

Measures

Sociodemographic variables: Data on students' sociodemographic backgrounds were gathered through self-developed questions. These variables included gender, age, proficiency in the host country's language, length of stay in the host country, educational qualifications, and prior international travel experience.

Intergroup contact: The General Intergroup Contact Quantity and Quality (CQCQ) scale, developed by Islam & Hewstone (1993) was utilized to assess intergroup contact. This scale measures two dimensions: intergroup contact quantity (5 items) and intergroup contact quality (5 items). The contact quantity

dimension reflects the number of friends international students have from the host culture, as well as the frequency of interactions with locals (Hungarians) in various settings (e.g., campus). The contact quality dimension assesses the equality, motivation, and nature of relationships with members of the host culture (e.g., "I have positive experiences during my interactions with Hungarians"). The CQCQ is a 10-item self-report questionnaire based on a Likert scale, with higher scores on the quantity items indicating greater contact with members of the host country, and higher scores on the quality items reflecting more positive contact experiences. Previous studies have demonstrated that the scale has good internal consistency and reliability (Ye et al., 2023). Likewise, the scale demonstrated a high reliability coefficient in the current study ($\alpha = .88$).

Intercultural sensitivity: The Intercultural Sensitivity Scale (ISS), originally developed by Chen & Starosta (2000) and shortened by Wang & Zhou (2016), was adopted to measure the intercultural sensitivity of international students. The ISS assesses five dimensions: interaction engagement, respect for cultural differences, interaction confidence, interaction enjoyment, and interaction attentiveness. It comprises 15 items rated on a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). Negative statements were reverse-coded, and overall scores were calculated by summing all item values, with higher scores reflecting greater intercultural sensitivity. The scale has been validated in several studies, demonstrating high internal consistency and strong validity (e.g., Wang & Zhou, 2016). In the present study, the reliability coefficient of the measure was 0.84.

Intergroup anxiety: The Intergroup Anxiety Scale (IAS), developed by Stephan & Stephan (1985), was used to assess the intergroup anxiety experienced by international students. The IAS includes 11 items based on adjectives such as certain (reverse coded), awkward, accepted (reverse coded), self-conscious, confident (reverse coded), happy (reverse coded), defensive, irritated, impatient, suspicious, and careful when interacting with outgroup members. International students will rate how they feel when interacting with Hungarians, using a 5-point scale from 1 (not at all) to 5 (extremely). Positive statements were reverse-coded to compute a total score ranging from 10 to 50, with higher scores indicating greater intergroup anxiety. The scale has shown good internal consistency in previous research (Gudykunst & Nishida, 2001; Khuhlaev et al., 2022). Karyanta et al. (2024) have also validated the psychometric properties of the scale with a sample of international students. In the current study, the scale showed good internal consistency ($\alpha = 0.74$).

Data collection procedure and analysis

The study received approval from the United Ethical Review Committee for Research in Psychology at the University of Debrecen. Printed self-report questionnaires were distributed to participants in their dormitories and libraries. In line with the American Psychological Association's guidelines, participation was voluntary, and informed consent was obtained from all participants. They were assured that their data would remain confidential and be used solely for research purposes. The collected data were entered into SPSS Version 26 for analysis. Univariate statistics, including means, standard deviations, skewness, and kurtosis, were computed to summarize the data and check for normality. Based on previous general studies that employed similar procedures to evaluate

other behaviours and psychological variables (e.g., Gebregergis et al., 2024; Hamdzah et al., 2020; Yikealo et al., 2018), we adapted the method to assess the levels of intergroup contact, intercultural sensitivity, and intergroup anxiety among students. The total continuous scores for each variable were divided into three categories. The lowest one-third of scores were classified as reflecting below-average levels, the middle one-third represented moderate levels, and the highest one-third indicated above-average levels. Pearson product-moment correlation analyses were conducted to explore the relationships between the study variables. Hierarchical multiple regression analyses were used to assess the predictive effect of intergroup contact and intercultural sensitivity on intergroup anxiety while controlling for sociodemographic factors. Before conducting the correlation and regression analyses, assumptions such as normality, and multicollinearity were tested, and no violations were found, ensuring the validity of the analyses. Normality was assessed using the values of skewness and kurtosis (see Table 2). Multicollinearity was evaluated using Tolerance and VIF (Variance Inflation Factor). The Tolerance values of less than 0.10 and VIF value greater than 10 indicate the presence of multicollinearity (Field 2009; Pallant, 2020). In the current study, the Tolerance and VIF values for the independent variables appeared to be within the recommended cutoff criteria. To determine the relationship between the study variables, a significance level of 0.05 (95% confidence interval) was applied.

RESULTS

Descriptive statistics of the study variables

Table 2 presents the summarized statistical values, including mean, standard deviation, Cronbach's alpha, skewness, and kurtosis. The average values for the study variables intergroup contact, intercultural sensitivity, and intergroup anxiety were 28.74, 59.27, and 25.67, respectively. The reliability coefficients for the study exceeded the benchmark value of 0.70, indicating strong internal consistency. To the assumption of normality, skewness and kurtosis were computed and they fell within the acceptable limits of $+2$ and -2 (Field 2009; Gravetter & Wallnau, 2014), suggesting that all data sets were normally distributed.

Table 2
Descriptive statistics of the study variables ($N = 237$)

| Variables	Min	Max	M	SD	Items	α	Sk	Ku
Intergroup Contact	10.00	70.00	28.74	11.72	10	.88	.73	.50
Intercultural Sensitivity	35.00	75.00	59.27	8.57	15	.84	-.45	-.66
Intergroup Anxiety	10.00	50.00	25.67	6.32	10	.74	.07	.69

Note. Sk = skewness; *Ku* = Kurtosis

Sources: Authors' own data

Levels of intergroup contact, intercultural sensitivity and intercultural anxiety

To assess the levels of intergroup contact, intercultural sensitivity, and intercultural anxiety, a frequency distribution was used, and the results are presented in Figure 1. The findings revealed that the majority of international students report-

ed low to moderate levels of intergroup contact. Specifically, more than half of the students ($n = 134$; 56.5%) indicated moderate levels of contact, while nearly one-third ($n = 85$; 35.5%) reported low levels of contact. Only 19 students (8.0%) reported high levels of contact with local people. Further, the results indicated that students' levels of intercultural sensitivity ranged from moderate to high. The majority of students ($n = 188$; 79.3%) reported high levels of intercultural sensitivity in their intercultural interactions, while a smaller proportion ($n = 49$; 20.7%) exhibited moderate levels. Additionally, the findings revealed that the majority of students demonstrated moderate levels of intergroup anxiety during their intercultural interactions with Hungarian people (n = 200; 84%). Meanwhile, 17 students (7.2%) reported high levels of intergroup anxiety, and 20 students (8.4%) indicated that they did not experience anxiety in their intergroup contact with Hungarians.

Figure 1
Levels of Intergroup Contact, Intercultural Sensitivity and Intercultural Anxiety
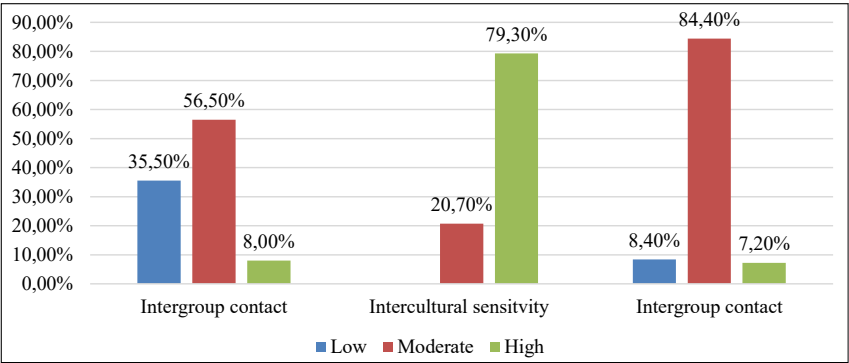
Source: Authors' own data

The Interplay Between the Study Variables

Pearson's product-moment correlation and an independent sample t-test were used to examine the associations between the study variables, and the correlation coefficients for the continuous variables are presented in Table 3. The results indicated that intergroup contact ($r = −.29$, $p < .001$) and intercultural sensitivity ($r = −.43$, $p < .001$) were both negatively and significantly correlated with intergroup anxiety. However, no statistically significant association was found between intergroup contact and intercultural sensitivity. Among the sociodemographic variables, age ($r = −.16$, $p < .05$), length of stay ($r = .15$, p < .05), and source of financial support ($t = 2.87$, $p < .05$) showed significant associations with intergroup anxiety, suggesting that younger students, those with longer stays in Hungary, and self-funded students tended to experience higher levels of intergroup anxiety.

Table 3

Correlation coefficients for the study variables

Variables	1	2	3	4
1. Age				
2. Length of stay	.02			
3. Intergroup contact	.11	.04		
4. Intercultural sensitivity	.06	-.02	.06	
5. Intergroup anxiety	-.17*	.15*	-.29**	-.43**

$^*p < .05$, $^{**}p < .001$

Source: Authors' own data

Hierarchical multiple regression analysis

Predicting intergroup anxiety from intergroup contact and intercultural sensitivity

To assess the predictive effects of intergroup contact and intercultural sensitivity on the intergroup anxiety of international students, a hierarchical multiple regression analysis was performed. The regression analysis consisted of three blocks. In the first block, sociodemographic characteristics such as gender, age, educational level, length of stay, prior travel experience, and source of financial support were included. In the second block, intergroup contact was added. Finally, intergroup anxiety was entered in the third block of the regression model. The variables in the first block accounted for a total of 6% of the variance in the outcome variable, and the regression model was significantly different from zero ($R^2 = .06$, $F_{(6, 230)} = 2.52$, $p < .05$). The inclusion of intergroup contact in the second block enhanced the model, explaining a total of 14% of the variance in intergroup anxiety ($R^2 = .14$, $F_{(7, 229)} = 5.16$, $p < .05$). When controlling for sociodemographic variables, intergroup contact contributed 8% of the variance to the model ($\Delta R^2 = .08$, $F_{(1, 229)} = 19.77$, $p < .001$). Intergroup contact with local people showed a negative and significant relationship with intergroup anxiety ($\beta = -.28$, $p < .001$). Finally, the addition of intercultural sensitivity in the last block of the regression model resulted in an explanation of a total of 29% of the variance in the outcome variable ($R^2 = .29$, $F_{(8, 228)} = 11.77$, $p < .001$). When the effects of sociodemographic variables and intergroup contact were controlled, intercultural sensitivity uniquely contributed an additional 11% of variance to the overall model ($\Delta R^2 = .11$, $F_{(1, 228)} = 50.26$, $p < .001$). Intercultural sensitivity negatively and significantly predicted intergroup anxiety ($\beta = -.41$, $p < .001$).

Table 4

Regression coefficients for predictors of intergroup anxiety

Predictors	B	SE	β	R	R^2	ΔR^2	F	df
Block 1				.25	.06		2.52*	6, 230
Gender	.36	.80	.03					
Age	-.13	.10	-.09					
Educational level	.78	.90	.06					
Prior travel experience	-.07	.97	-.01					
Length of stay	.04	.02	.13					
Source of fund	-1.43	.91	-.12					
Block 2				.37	.14	.08	5.16***	7, 229
Gender	.84	.78	.07					
Age	-.09	.10	-.07					
Educational level	.78	.87	.06					
Prior travel experience	.00	.94	.00					
Length of stay	.04	.02	.14*					
Source of fund	-1.16	.88	-.09					
Intergroup contact	-.15	.03	-.28***					
Block 3				.54	.29	.16	11.77***	8, 228
Gender	.02	.71	.00					
Age	-.10	.09	-.07					
Educational level	.54	.79	.04					
Prior travel experience	.40	.85	.03					
Length of stay	.04	.02	.14*					
Source of fund	-.47	.80	-.04					
Intergroup contact	-.13	.03	-.25**					
Intercultural sensitivity	-.28	.04	-.41***					

Note. Sociodemographic variables were coded as: *Gender*: Male = 1, Females = 0; *Educational Level*: Undergraduate = 1, Postgraduate = 0; *Source of fund*: Scholarship holder = 1, Self-support = 0; *Prior travel experience*: Yes = 1, No = 0;. *$p < .05$, **$p < .01$, ***$p < .001$; *SE*: Standard Error

Source: Authors' own data

DISCUSSION

The primary purpose of this study is to examine how positive intergroup contact and intercultural sensitivity contribute to reducing intergroup anxiety among Asian international students studying in Hungary. More specifically, the discussion section addresses three key issues: 1) the levels of intergroup contact, intercultural sensitivity, and intergroup anxiety; 2) the relationship between intergroup contact and intergroup anxiety; and 3) the relationship between intercultural sensitivity and intergroup anxiety.

First, the results indicate that the majority of the students reported low to moderate levels of intergroup contact, high levels of intercultural sensitivity, and moderate levels of intergroup anxiety. A few studies have found that intergroup interaction and friendship between international and local students are limited (Aydin, 2019). Despite the lack of adequate prior studies examining these variables within the international student population, several explanations can account for these findings. The low to moderate levels of intergroup contact (especially in quantity statements, such as visiting homes of Hungarian friends, contacting Hungarians as friends or neighbours, and contacting Hungarians at school) and an average level of intergroup anxiety (e.g., feeling awkward during interaction with Hungarians) among the majority of international students may be to some extent attributed to cultural differences that create barriers to interaction. Asian students typically come from collectivist cultures, where social harmony, group cohesion, and loyalty to one's in-group are highly valued. In contrast, Hungarian culture is more individualistic, emphasizing personal autonomy and self-expression (Hofstede, 2001). This cultural discrepancy can lead Asian international students to anticipate negative psychological experiences when interacting with local individuals, fostering a reluctance to engage in intergroup interactions. Such expectations may stem from fears of cultural misunderstandings or feelings of alienation in a new social context. Several studies have shown that Asian international students experience greater challenges in intercultural and intergroup interactions with host nationals in Western academic contexts compared to other regions, primarily due to significant cultural differences (Glass et al., 2014; Rienties & Nolan, 2014). Another significant factor that might hinder students from not having high intergroup contact and low intergroup anxiety is the reported poor host language proficiency of the students (Aydin, 2019). Most of the participants of the current study indicate that they possess limited skills in the Hungarian language, which can serve as a substantial barrier to effective communication. This lack of fluency may create anxiety around engaging in conversations, as students might fear miscommunication or embarrassment. Several previous studies have shown that limited proficiency in the host language can hinder international students' ability to connect with local peers, leading to the avoidance of social situations that require communication (e.g., Tang & Zhang, 2023; Wilczewski & Alon, 2023; Xiao, 2024). This linguistic barrier can further perpetuate feelings of isolation and inhibit the development of meaningful relationships with Hungarian students. Furthermore, the academic structure in which international and domestic students often attend separate classes, primarily due to differences in the medium of instruction, can significantly limit opportunities for meaningful interactions.

The findings of our study, indicating that most Asian international students exhibit high levels of intercultural sensitivity, are consistent with previous studies

conducted in Asia, which also reported high intercultural sensitivity among both international and domestic students (Arde, 2018; Chen & Hu, 2023; Magsanay et al., 2024). This suggests that these students possess a strong awareness of cultural differences, as well as the ability to appreciate and respect such differences, enabling them to function effectively in a multicultural environment. A plausible explanation for the elevated intercultural sensitivity could be linked to their diverse cultural backgrounds. Many of these students may come from societies of multiple ethnic and cultural groups, and their prior exposure to such diversity before arriving in Hungary may have influenced their intercultural sensitivity. Various scholars also suggest that the multicultural context is one of the critical factors contributing to the development of intercultural sensitivity (Chen & Hu, 2023; Segura-Robles & Parra-González, 2019). Moreover, although the students reported low to moderate levels of intergroup contact with Hungarians, they likely engage in frequent and meaningful intercultural interactions with other international students, as they attend the same classes and communicate in English. Another possible explanation is that, as Asian international students constitute a larger number of students at the University of Debrecen, they may have more opportunities for intercultural contact among themselves, which could further enhance their intercultural sensitivity. Additionally, various cultural and social events hosted by the university may have contributed to the development of their intercultural competence during intercultural interactions.

Second, the current study highlights that international students who maintain high levels of intergroup contact with domestic students tend to experience reduced intergroup anxiety. This finding is consistent with previous research that has identified a negative relationship between these variables (Bentsen, 2022; Islam & Hewstone, 1993; Stephan & Stephan, 1992; Telaku, 2021). This result can be understood within various theoretical frameworks, such as intergroup contact theory, intergroup anxiety theory, and social learning theory. According to intergroup contact theory, direct and positive interactions between groups can significantly alleviate prejudice and anxiety, particularly when these interactions are characterized by equal status, shared goals, cooperation, and institutional support (Allport, 1954; Pettigrew & Tropp, 2006). Similarly, in their intergroup anxiety theory, Stephan & Stephan (1985) argue that individuals may feel apprehensive about intergroup interactions as a result of their feeling of concern about the negative behavioural and psychological consequences of the interaction, as well as fear of negative evaluation and rejection by the members of the other group. Based on this theoretical argument, it can be assumed that engagement in positive intergroup contact increases familiarity and understanding between international and domestic students. As students interact, they have opportunities to learn about each other's cultures and experiences, which can mitigate stereotypes and reduce anxiety associated with cultural differences. Social learning theory also posits that individuals learn behaviours and attitudes through observation and interaction, fostering an environment of acceptance and understanding (Bandura, 1977). Moreover, positive intergroup contact can facilitate the development of social support networks. When international students form friendships with domestic peers, they create a support system that can help buffer the stress and anxiety associated with adapting to a new environment. This sense of belonging can further enhance their overall well-being and reduce feelings of isolation, which are common among international students. Furthermore, intergroup contact often involves collaborative educational tasks that encour-

age cooperation and communication. Such shared goals can enhance language skills, allowing international students to express themselves more confidently and effectively. Improved communication not only reduces misunderstandings but also fosters positive attitudes toward one another, ultimately leading to a decrease in intergroup anxiety.

Finally, the findings of our study indicate a significant negative association between intercultural sensitivity and intergroup anxiety. This suggests that international students with higher intercultural sensitivity in their interactions tend to experience reduced levels of intergroup anxiety. This outcome echoes previous studies that have reported a statistically significant negative relationship between intercultural sensitivity and negative intergroup experiences such as intergroup anxiety (He et al., 2023; Sari & Yalcinkaya-Alkar, 2022). The theoretical conceptualization of intergroup anxiety and intercultural sensitivity might explain the negative relationship between the variables. Stephan and Stephan (1985) proposed various types of feared negative consequences that contribute to intergroup anxiety: negative psychological consequences (e.g., frustration, loss of control), negative behavioural consequences (e.g., exploitation), negative evaluations by outgroup members (e.g., negative stereotyping, disdain), and negative evaluations by ingroup members (e.g., disapproval or rejection for engaging with the outgroup). Thus, the affective and cognitive dimensions of intergroup anxiety play a significant role in shaping individuals' experiences of anxiety during intercultural interactions. In this context, it can be argued that intercultural sensitivity functions as an effective approach to alleviating negative emotional and psychological expectations associated with intercultural encounters. For instance, individuals with high intercultural sensitivity are often characterized by greater self-esteem, enabling them to engage in positive evaluations of intercultural interactions rather than anticipating adverse experiences (Chen & Starosta, 1997). Moreover, the self-esteem and open-mindedness components of intercultural sensitivity facilitate the development of positive emotions toward understanding and accepting cultural differences during intercultural encounters. Chen & Starosta (1997) further assert that when individuals adopt a non-judgmental stance during intercultural interactions, they are more likely to enjoy their engagements with individuals from diverse cultural backgrounds and less likely to experience negative intercultural experiences. Hence, it is plausible that the diverse set of intercultural sensitivity skills, including self-esteem, self-regulation, open-mindedness, cultural empathy, interaction involvement, and the ability to suspend judgment, are essential personal resources for significantly reducing intergroup anxiety among international students. The study also highlights that, despite both intergroup contact and intercultural sensitivity significantly predicted intercultural anxiety, intercultural sensitivity emerges as a stronger predictor of intergroup anxiety. The limited effect of intergroup contact in mitigating intergroup anxiety might be associated with the students' low to moderate levels of intergroup contact with members of the host country. On the other hand, the moderate to higher levels of intercultural sensitivity reported by the students might have played a better role in reducing their intergroup anxiety.

Implications of the study

This study offers several significant theoretical and practical implications for higher education institutions, particularly in the Hungarian context. Theoretically, by examining the roles of positive intergroup contact and intercultural

sensitivity in reducing intergroup anxiety among international students, the research extends our understanding of these factors. Specifically, it sheds light on the levels of intergroup contact, intercultural sensitivity, and intergroup anxiety experienced by Asian international students studying in Hungary. Additionally, the findings may offer valuable insights for international students regarding their own experiences of intergroup contact, intercultural sensitivity, and anxiety within the host society. On a practical level, higher education institutions, university lecturers, and curriculum developers are recommended to take practical actions toward fostering intergroup contact and intercultural sensitivity of their international students, thereby reducing the students' vulnerability to intergroup anxiety. For example, higher education institutions might organize various social, cultural, and recreational activities, such as cultural exchange programs, sports and recreational events, tutor programs, language exchange programs, multicultural concerts and exhibitions, student excursions, and multicultural potluck events. Such activities are instrumental in raising students' levels of intergroup contact and cultural sensitivity during their intercultural interactions. These initiatives not only increase the quantity and quality of interactions between local and international students but also foster the development of intimate friendships, positive attitudes, and improved language skills in the host society. Moreover, these activities contribute to the appreciation and acceptance of cultural differences, ultimately enhancing students' intercultural communication competence. Another crucial strategy for promoting intergroup contact involves integrating international and local students in shared living arrangements, such as dormitory assignments. Mixed accommodation arrangements encourage daily interactions and close friendships, while co-national dormitory groupings may impede intergroup interaction and hinder host language development and also the overall intercultural adaptation of the students. Involvement in extracurricular activities with host nationals and tutoring programs, along with mixed housing arrangements where international and local students share the same living space, has been shown to effectively promote intergroup contact and foster friendships (Hendrickson, 2018).

In addition to extracurricular initiatives, educational interventions, such as group work projects, short educational trainings, seminars, and workshops, host language and culture courses can further enhance intercultural interaction and competence. Cruickshank et al. (2012) emphasize that group work in both classroom settings and the broader university environment significantly fosters intergroup interaction and learning. Furthermore, intensive short-term training or workshops have been proven effective in promoting positive intergroup relationships (Ng et al., 2023), which are essential for quality intergroup contact and lasting friendships. Beyond these strategies, educators are encouraged to adopt culturally sensitive and inclusive teaching methods to further enhance the development of intergroup contact, and intercultural sensitivity, and reduce intergroup anxiety. The current study recommends curriculum developers to design and implement curricula that actively promote meaningful intercultural interactions between international and domestic students. Hence, by implementing these strategies, universities can create environments that actively enhance positive intergroup contact and intercultural sensitivity among international students, thereby alleviating negative experiences such as intergroup anxiety during intercultural interactions.

Limitations and future research directions

While the theoretical and practical implications discussed above are significant, this study has several limitations that should be acknowledged for future research consideration and to enhance the robustness of the findings. One potential limitation is the reliance on self-report questionnaires as the primary method of data collection. This approach may be influenced by social desirability bias, as students may provide responses they believe are more socially acceptable rather than their true feelings. Additionally, the study employed a cross-sectional design, assessing all variables at a single point in time. This design limits the ability to capture changes in these variables over time, which could affect the results. Furthermore, participants were drawn from a specific region and enrolled at a single university, which may restrict the generalizability of the findings to other contexts or populations. It is also important to note that the predictive effects of intergroup contact and intercultural sensitivity on intergroup anxiety were based on correlational data rather than empirical evidence. Moreover, though this study utilized a quantitative approach, integrating qualitative methods, such as interviews, participant observation, or focus group discussions, in future research could provide a richer understanding of the experiences and perspectives of international students related to their intergroup or intercultural encounters. To address these limitations, future research is recommended to validate the findings of the current study by employing longitudinal designs, adopting qualitative approaches, expanding the participant pool, and utilizing mixed data collection methods.

CONCLUSION

Research documents that international students encounter mental health challenges, including depression, intergroup anxiety, and psychological distress. Considering the detrimental effect of these student mental health challenges, the current cross-sectional study was conducted to unravel the potential predicting effects of intergroup contact and intercultural sensitivity on intergroup anxiety among Asian international students in Hungary. The findings reveal that positive intergroup contact and intercultural sensitivity were significantly and negatively related to intergroup anxiety, suggesting that students with high intergroup contact and intercultural sensitivity experienced fewer symptoms of anxiety during their intercultural interaction. The study further reports that the levels of intergroup contact and intergroup anxiety for the majority of the students ranged from low to moderate. However, the student achieved moderate to higher levels of intercultural sensitivity. The results of the study suggest that intergroup contact and intercultural sensitivity are effective strategies to mitigate international students' feelings of fear, apprehension and discomfort during intercultural interaction. Therefore, university communities should consider these factors when addressing mental health challenges, such as intergroup anxiety, among their international students.

Ethical Commission Approval

This study involving human participants has completed and fulfilled the ethical guidelines requirements. The participants provided written informed consent before taking part in the study and were informed about its objectives.

Conflict of Interest Statement

There is no conflict of interest with any institution or person within the scope of this study.

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