

# DISAGGREGATING DISTRESS AMONG INTERNATIONAL AND DOMESTIC UNIVERSITY STUDENTS: SOCIAL AND ACADEMIC CORRELATES

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## Abstract

International students often confront distinctive cultural, linguistic, financial, and academic challenges that may heighten vulnerability to emotional strain and academic overwhelm. Yet research on international student mental health and well-being is mixed and often neglects variation within this population, comparisons with domestic students, or the social and academic factors that may shape disparities in distress. Drawing on survey data from undergraduate students at a large university in southern Ontario, we examine distress among domestic students and three subgroups of international students: those from China, South Asia, and other regions. We assess how social background and academic preparation, campus involvement, and experiences of racism and discrimination shape disparities in reported distress. We find substantial variation, both between domestic and international students and across international student subgroups. Social and academic advantages and extracurricular participation are associated with lower distress, while exposure to racism and discrimination is strongly linked to higher distress.

**Keywords:** international university students, student mental health, racism and discrimination, academic preparation, extracurricular participation

## Résumé

Les étudiants internationaux sont souvent confrontés à des défis culturels, linguistiques, financiers et scolaires spécifiques qui peuvent accroître leur vulnérabilité au stress émotionnel et au surmenage. Pourtant, les recherches sur la santé mentale et le bien-être des étudiants internationaux présentent des résultats qui varient d'une étude à l'autre, et elles négligent fréquemment la diversité au sein de cette population, les comparaisons avec les étudiants nationaux, ou encore les facteurs sociaux et scolaires susceptibles de façonner des disparités en matière de détresse. À partir des données d'enquête recueillies auprès d'étudiants de premier cycle d'une grande université du sud de l'Ontario, nous examinons la détresse chez les étudiants nationaux et trois sous-groupes d'étudiants internationaux : ceux originaires de la Chine, de l'Asie du Sud et d'autres régions. Nous évaluons de quelle mesure le milieu social et la préparation universitaire, l'engagement sur le campus, ainsi que les expériences de racisme et de discrimination contribuent à façonner les disparités en matière de détresse déclarée. Nos résultats révèlent une variation substantielle tant entre les étudiants nationaux et internationaux qu'entre des sousgroupes d'étudiants internationaux. Les avantages sociaux et scolaires, de même que la participation aux activités parascolaires, sont associés à une détresse moindre, tandis que l'exposition au racisme et à la discrimination est fortement liée à une détresse accrue.

**Mots-clés** : étudiants universitaires internationaux, santé mentale des étudiants, racisme et discrimination, préparation aux études, participation à des activités extrascolaires

## INTRODUCTION

Canada has become a preferred destination for international students. Following years of rapid growth, more than 572,000 international students were enrolled in Canadian higher education institutions in 2024, representing nearly one-quarter of all post-secondary enrolments (Statistics Canada, 2025b). This increase reflects both Canada's appeal as a place to study and government policies designed to attract international students (McCartney, 2021; Sabzalieva, 2020). At the institutional level, declining government funding for higher education and differential tuition structures that charge international students substantially higher fees have incentivized recruitment (Buckner et al., 2020; McCartney, 2021).

Although rising international student enrolment has often been endorsed as beneficial for economic growth, immigration, and cultural diversity (De Moissac et al., 2020; Kenyon et al., 2012), concern is growing about universities' capacity to provide adequate support and protection (Isai, 2024). More recently, the federal government has moved to restrict new study permits in response to unsustainable growth, housing pressures, and the exploitation of international students by poorly regulated institutions and other actors. International students may also face cultural, linguistic, financial, and academic challenges, including unfamiliar educational expectations, difficulties finding housing and building social ties, and exposure to racism or discrimination (Calder et al., 2016;

Hamilton et al., 2020; Maynard et al., 2018). Together, these pressures may undermine mental health and well-being and heighten distress.

In this article, we use *mental health and well-being* as an umbrella term for the wide range of outcomes examined in prior research, including clinically diagnosed mental health disorders, self-reported symptoms (such as anxiety and depression), and broader indicators of emotional and social functioning. Our own analyses focus more narrowly on distress, defined here as a combination of emotional strain and academic overwhelm.

Existing research on international students and mental health and well-being yields conflicting findings: some studies identify elevated risks (Alharbi & Smith, 2018; Huang & Mussap, 2018), while others find similar or even better outcomes than among domestic students (De Moissac et al., 2020; Khawaja & Dempsey, 2008; King et al., 2021). Making sense of these mixed results is further complicated by design limitations in prior work. Much of this work treats international students as a single category (e.g., Calder et al., 2016; Lee, 2010), focuses on only one subgroup (e.g., Avenido, 2023; Heng, 2017), or omits comparisons with domestic students (e.g., Gebhard, 2012; Han et al., 2013), limiting insight into variation across this population. Yet international students differ in language background, familiarity with educational systems similar to Canada's, cultural distance, and vulnerability to racism, all of which may shape patterns of distress. Moreover, few studies examine the mechanisms underlying differences in distress. As a result, universities have limited insight into which students are most vulnerable and why.

To address these deficits, we draw on comprehensive survey data to analyze distress among international and domestic undergraduate students at a large university in southern Ontario. We build on prior research by moving beyond approaches that either isolate a single subgroup or treat international students as a homogeneous category. Instead, we differentiate among three subgroups of international students: those from China, those from South Asia, and those from other regions, and com-

pare them with domestic students. We then use regression analyses to assess how students' social background, academic characteristics, campus involvement, and experiences of racism and discrimination shape disparities in reported distress.

## **SOCIAL CONTEXTS OF DISTRESS: CHALLENGES FOR INTERNATIONAL STUDENTS**

Psychological, emotional, and academic distress are widespread among university students in Canada and elsewhere (Linden & Stuart, 2020). In a study of eight countries, about one third of students reported at least one mental disorder (Auerbach et al., 2018), and students experience poorer mental health than the general population (Beks et al., 2018; De Moissac et al., 2020; Robinson et al., 2016). For young adults, the transition into university can be fraught with difficulty. Academic pressure, changes in social networks and living situations, and financial stress can exacerbate mental health concerns (Acharya et al., 2018; Clough et al., 2019; De Moissac et al., 2020). In turn, stress, anxiety, depression, and the loss of self-esteem can undermine academic success, retention, and overall satisfaction with university (Acharya et al., 2018; Clough et al., 2019; De Moissac et al., 2020; Robinson et al., 2016).

International students often encounter pressures distinct from those faced by their domestic counterparts (Clough et al., 2019). They must adapt to an unfamiliar educational system and to norms and expectations that may differ from their prior experiences, both of which can intensify distress (Alharbi & Smith, 2018; De Moissac et al., 2020; Hamamura & Laird, 2014). Unrealistically high academic expectations may heighten depressive symptoms and acculturative stress (Alharbi & Smith, 2018; Huang & Mussap, 2018), while insufficient English proficiency can impede academic and social adjustment (Anderson, 2015; Cao et al., 2016, 2017; Martirosyan et al., 2015, 2019).

Although most universities require proof of English proficiency for admission, the linguistic demands of classroom instruction often exceed what language tests capture (Marangell & Baik, 2022; Wang, 2016). As a result, some international students may struggle to understand course material and complete assignments (Avenido, 2023). Perceived limitations in English proficiency can also inhibit active participation: compared with domestic students, international students tend to be less engaged in class activities and group work and less likely to seek help from faculty and administrative staff (Chen & Zhou, 2019; Wang, 2016; Zhou & Zhang, 2014). Consequently, students facing language difficulties may receive less academic support and are more prone to isolation and disconnection (Chen & Zhou, 2019). Language barriers can also hamper communication with classmates and professors, hinder the development of supportive social networks, contribute to emotional distress, and discourage students from seeking mental health services (Alharbi & Smith, 2018; Finn et al., 2022; Martirosyan et al., 2019).

International students, especially those from cultures that differ markedly from North America, also may confront significant difficulties adjusting to university life (Avenido, 2023; Marangell & Baik, 2022; Shu et al., 2020). Acculturative stress arises through adaptation to a new culture and often increases with the cultural distance between students' home and host environments (Avenido, 2023; Prieto-Welch, 2016; Shadowen et al., 2019). Asian international students in particular may experience elevated acculturative stress related to substantial cultural divergences (Bender et al., 2019). For instance, students from collectivist societies such as China may grapple with the more individualistic culture of North American academic settings, especially where interactive teaching and critical thinking are emphasized over the lecture-based approaches more common in their home countries (Chen & Zhou, 2019; Yan & Berliner, 2013; Zhou & Zhang, 2014).

Consequently, participating in seminar discussions can be especially challenging (Chen & Zhou, 2019; Gebhard, 2012). Cultural incongru-

ence may also precipitate misunderstandings, as less participatory behaviour can be misread as disinterest or disrespect, reinforcing negative stereotypes and further marginalizing these students (Chen & Zhou, 2019; Heng, 2017). Cultural differences may also heighten exposure to prejudice and racial discrimination (Avenido, 2023; Prieto-Welch, 2016), as substantiated by instances targeting students from China and the Middle East (Guo & Guo, 2017; Lee & Rice, 2007). East Asian international students report more racial microaggressions than their South Asian peers, a difference that may partly reflect English-language challenges (Houshmand et al., 2014). Acculturative stress can also intensify communication apprehension, compounding stress levels and exacerbating mental health (Alharbi & Smith, 2018; De Moissac et al., 2020; Marangell & Baik, 2022; Shadowen et al., 2019).

While these factors suggest a greater susceptibility to distress, empirical findings are mixed. Some studies report that international students exhibit similar or even better mental health outcomes than domestic students on several indicators (De Moissac et al., 2020; Khawaja & Dempsey, 2008; King et al., 2021). For example, at two universities in Manitoba, international students were more likely to report better mental health, despite lower use of mental health services, fewer employed coping mechanisms, and reluctance to talk about their problems (De Moissac et al., 2020). This result might reflect the context of smaller-city universities and the distinctive sociodemographic profile of the sample, who were generally older, primarily from African countries, and more likely to be religious. Similarly, a study of first-year students at Queen's University found that international students had similar or lower levels of anxiety, depression, and insomnia than domestic students, although patterns varied somewhat by gender (King et al., 2021). However, the same study also found that international students reported higher rates of some symptoms, especially suicidal ideation, at the start of first year.

Research on Chinese international students also presents a mixed picture. Some studies find elevated distress, while others report compara-

ble or even more favourable outcomes. A handful of studies find that they are more prone to mental health concerns than domestic students and less likely to seek professional help (Han et al., 2013; Lian & Wallace, 2020; M. Liu, 2009). In contrast, King et al. (2021) find that although Chinese international students report similar rates of suicidal ideation as other international students, they report significantly fewer mental health symptoms. Likewise, a Bright Futures (2018) survey found that the levels of psychological distress among Chinese international students in the United Kingdom and Germany closely mirrored those of domestic students.

East and South Asian international students differ in how they respond to stress and racialized experiences. East Asian students are more likely to rely on close family and co-national networks when facing stress (Frey & Roysircar, 2006; Sue & Sue, 2016), and to respond to racial microaggressions by disengaging from academic settings and retreating into their cultural communities (Houshmand et al., 2014). South Asian students, by contrast, tend to respond more proactively to stressors and are more likely to use support services (Frey & Roysircar, 2006). These differences may reflect stronger English proficiency among South Asian students, linked to British colonial influence, as well as greater exposure to religious and cultural diversity in their home countries (Frey & Roysircar, 2006).

In sum, prior research highlights the distinct challenges many international students face and their potential consequences for mental health and well-being. However, whether international students experience elevated distress relative to domestic students, and how distress varies across international student subgroups, remains unclear, given both contradictory findings and research design limitations. Some studies focus on a single subgroup of international students, while others treat international students as a single undifferentiated category, or omit comparisons with domestic students. Much of the research also lacks adequate controls. Beyond adverse childhood experiences

and prior psychological illness, university students' mental health and well-being are shaped by social background, academic preparation, and campus experiences (Auerbach et al., 2018; X.-Q. Liu et al., 2022). Our study addresses some of these limitations by distinguishing among three international student subgroups—students from China, students from South Asia, and students from other countries—and comparing them with domestic students. We then examine how social background, academic characteristics, campus involvement, and experiences of racism and discrimination account for disparities in distress.

## DATA AND METHODS

We utilize data from a cross-sectional survey of students at a four-year post-secondary institution in southern Ontario. Compared with the broader undergraduate populations of Ontario and Canada, the student body is notably more diverse and includes a larger share of international students (Choi & Hou, 2023; Shadowen et al., 2019; Statistics Canada, 2025a, 2025b; Thomas & Galambos, 2004). Among domestic students, 21% identify as Chinese, 30% as South Asian, 13% as White, and 7% as Black. Eighty percent are immigrants or children of immigrants. International students account for about 25% of the student body; of these, 77% are from China, 9% from South Asian countries, and the remaining 14% from other countries. The survey was administered online in 2019 across 23 first-year courses and participants were offered a small extra-credit incentive. Of the 5,793 students enrolled in these courses, 3,944 completed the survey, and 3,480 consented to research use, yielding a response rate of 60%. Following removal of straight-liners and cases with substantial missing data, the final analytic sample consisted of  $N = 3,260$ .



## Dependent Variable

The dependent variable captures students' self-reported distress, a construct related to overall well-being that reflects emotional and academic strain. We created a distress scale from four survey items asking how often, during the current academic year, students (1) felt overwhelmed by all they had to do, (2) stayed up all night to finish an academic assignment or prepare for an exam, (3) felt very sad, and (4) felt so depressed it was difficult to function. The first two items reflect academic overwhelm and the latter two emotional strain. Response options were given on a Likert-style scale that ranged from "never" (coded as 1) to "very often" (coded as 5), yielding a continuous scale from 4–20, with higher scores indicating greater distress. The scale demonstrates acceptable internal consistency (Cronbach's  $\alpha = .80$ ).

## Independent Variables

### *Student Populations*

To analyze differences across international students, we group them by region of origin: China, South Asia, and other countries. This reflects the sample distribution, with Chinese students comprising the largest international subgroup ( $n = 626$ ), followed by students from South Asian countries ( $n = 75$ ) and other regions ( $n = 115$ ). Domestic students ( $n = 2,444$ ) serve as the reference group.

Ideally, we would have analyzed international students from each South Asian country separately, as well as the many other countries included in the "other" category. However, small cell sizes preclude that level of disaggregation. Only Chinese and South Asian students are represented in sufficient numbers to permit subgroup comparisons.

Although South Asia is internally diverse, we follow prior research in treating it as a meaningful regional category (Frey & Roysircar, 2006). Countries in the region share broad historical and institutional features. Most South Asian countries, including India, Pakistan, Bangladesh, and Sri Lanka, were shaped by British colonial rule and reflect this legacy in their legal,

administrative, and educational systems. Many also retain English as a second or semi-official language, contributing to relatively high English proficiency rates, and their educational systems often align more closely with Canadian academic structures than those of some other regions. In addition, South Asian societies are often multilingual and multireligious, fostering familiarity with cultural pluralism and potentially easing students' adjustment to the diversity of Canadian campus life (Frey & Roysircar, 2006). While important differences exist within South Asia, these commonalities provide a rationale for grouping these students in our analysis.

Chinese international students represent a distinct and analytically meaningful comparison group. Despite some shared challenges with South Asian students, including navigating life in a new country and managing the demands of university study, Chinese students differ in several important respects. China's education system, grounded in Confucian traditions and characterized by centralized curriculum and high-stakes testing, diverges markedly from the British-influenced systems found in South Asia and Canada. English proficiency may also differ given the more limited role of English in Chinese public life. In addition, as noted above, studies suggest that Chinese and South Asian students experience different frequencies and forms of racialized treatment on campus and may draw on different coping strategies.

### *Socio-Economic and Academic Background*

To assess variation across student groups, we examine three sets of explanatory variables, beginning with social and academic backgrounds. Socio-economic status, known to correlate positively with university adjustment and psychological distress (X.-Q. Liu et al., 2022), is measured through parental education, students' educational aspirations, childhood family income, and students' current concerns about financing their education. Parental education indicates the highest level attained by either parent or guardian and is represented by three binary variables: less than a bachelor's degree, a bachelor's degree, and more than a

bachelor's degree. Students' educational aspirations are indicated by their planned highest level of education. Childhood family income is based on students' assessments of their family's financial situation growing up and coded as below average, average, and above average. Students were also asked how concerned they were about financing their education, with responses ranging from "not at all concerned" to "very concerned," capturing more immediate financial stress.

We also include measures of students' academic preparedness, English proficiency, and whether the university was their first choice, all of which may shape academic success, adjustment, and well-being (Auerbach et al., 2018; X.-Q. Liu et al., 2022; Shadowen et al., 2019; Thomas & Galambos, 2004). Students rated how well-prepared they felt to succeed academically when they began university, ranging from "unprepared" to "very well prepared." English proficiency was coded as a binary variable based on whether students agreed that they had strong proficiency in English. We also include a binary indicator of whether the university was the students' first choice.

### ***Campus Involvement and Barriers to Participation***

A second set of measures captures barriers to campus participation, including students' weekly work hours during the academic year and commute time, as well as students' involvement in campus life. Prior research suggests that long work hours and lengthy commutes can reduce engagement in campus life (Allen & Farber, 2018), weaken belonging, and increase psychological strain (Strayhorn, 2018). Work hours are coded as a binary variable indicating whether a student worked 20 or more hours per week. Commute time is represented by two binary variables: more than 30 minutes or 30 minutes or less, with no commute time (living on campus) as the reference category.

Campus involvement is assessed through extracurricular participation, cross-racial interaction, and use of academic English support services. The extracurricular participation variable indicates students' self-reported likelihood

of joining student groups, clubs, organizations, or sports-related activities. Cross-racial interaction measures how often students share meals or socialize with peers from different racial or ethnic backgrounds. To gauge students' engagement with campus services, a binary variable indicates whether a student sought English language support from the university's language centre. These forms of social and institutional involvement are known to influence students' mental health and well-being (Alharbi & Smith, 2018; X.-Q. Liu et al., 2022; Shadowen et al., 2019).

### ***Experiences of Discrimination and Bias***

The final set of measures captures students' experiences of discrimination and bias on campus. Students were asked how often they experienced unfair treatment, insults, negative judgement, discrimination, or exclusion from activities based on their race/ethnicity or English language accent. They were also asked about feeling ignored or invisible due to their race/ethnicity; exclusion from internships, mentoring, leadership, volunteer, or work opportunities; and feeling they received a lower grade from a professor due to their race or ethnicity.

All five variables are ordinal, with categories ranging from "never" to "very often." Prior research suggests that international students disproportionately encounter racism and discrimination, which in turn influences adjustment, satisfaction, and mental well-being (Alharbi & Smith, 2018; Guo & Guo, 2017; Lee & Rice, 2007; Shadowen et al., 2019). All survey items used in this study were developed by the research team (or adapted from prior surveys) and were not drawn from standardized or psychometrically validated instruments.

We begin with descriptive statistics comparing international and domestic students. We then estimate hierarchical multiple regression models predicting distress. Model 1 includes only the three international student groups, with domestic students as the reference category. Model 2 adds socio-economic and academic background characteristics. Model 3 introduces barriers to campus participation (work hours

and commute time), and measures of campus involvement (likelihood of extracurricular participation, cross-racial interactions, and receiving English language support). Model 4 adds indicators of on-campus bias and discrimination.

Prior to estimating the regression models, we examined correlations among all variables. Although several were modestly correlated, none exceeded conventional thresholds for multicollinearity. Except for the distress index described above, all variables were treated as single-item measures.

## Analysis and Findings

### *Descriptive Findings*

Table 1 shows significant differences between domestic and international students, as well as variation within the international student population. Overall, international students report more advantaged family backgrounds. They are more likely to have well-educated parents, and over half (54%) report above-average childhood family income, compared with just 21% of domestic students. They are also slightly less concerned about financing their undergraduate education. Within the international student population, students from South Asia and other regions appear somewhat more advantaged than Chinese students. In terms of educational expectations, Chinese students hold somewhat lower expectations while students from other countries report higher ones.

Academically, international students overall report significantly stronger preparation for university than domestic students, with the exception of students from South Asia, who do not differ from domestic students. English language proficiency follows the opposite pattern: 93% of domestic students rate their English proficiency as strong, compared with 75% of international students overall and 71% of Chinese international students. There is little difference in whether the university was students' first choice, except among international students from other countries, only 40% of whom identify it as their first choice, compared with 53% of domestic students.

International students face fewer barriers to campus involvement. Compared with domestic students, they are less likely to work 20 hours or more per week (4% vs. 10%) and more likely to live on campus (34% vs. 8%). When they do commute, their commute times are significantly shorter: only 16% report commuting over 30 minutes, compared with 55% of domestic students. Likely reflecting these advantages, they are significantly more active in extracurricular activities and more likely to use English academic supports, particularly Chinese international students. At the same time, they report lower levels of cross-racial interaction than domestic students. Within the international student population, Chinese students are considerably less likely to engage in cross-racial interactions, while South Asian students and those from other countries differ little from domestic students.

International students are substantially more likely than domestic students to report experiences of bias and discrimination, including unfair treatment based on race/ethnicity or English language accent, being ignored or excluded, and feeling they received a lower grade because of their race or ethnicity. This pattern holds across all international student groups, although the forms of bias vary. South Asian students report the highest levels of race- and ethnicity-based discrimination, while students from other countries are most likely to report being ignored.

With respect to the dependent variable, international students overall report significantly lower distress than do domestic students. This pattern is driven largely by Chinese international students, who exhibit notably less distress. By contrast, South Asian students and those from other countries do not differ significantly from domestic students.

### **Multivariate Regression Findings**

The first model in Table 2 examines baseline differences in distress between international students from different regions and domestic students (the reference category). Chinese international students report significantly lower distress than domestic students, while South Asian students and students from other countries do not differ significantly.



**Table 1**  
*Descriptive Statistics for Domestic and International Students*

|                                        | Domestic<br>% / M (SD) | International: All<br>% / M (SD) | t-value   | International: Chinese<br>% / M (SD) | t-value   | International: S. Asian<br>% / M (SD) | t-value   | International: Other<br>% / M (SD) | t-value   |
|----------------------------------------|------------------------|----------------------------------|-----------|--------------------------------------|-----------|---------------------------------------|-----------|------------------------------------|-----------|
| <b>Socio-Economic Characteristics</b>  |                        |                                  |           |                                      |           |                                       |           |                                    |           |
| Parents' Education:                    |                        |                                  |           |                                      |           |                                       |           |                                    |           |
| Less than Bachelor's                   | 39%                    | 30%                              | 4.45***   | 35%                                  | 1.95      | 11%                                   | 4.99***   | 19%                                | 4.34***   |
| Bachelor's                             | 34%                    | 40%                              | -3.02**   | 42%                                  | -3.28**   | 45%                                   | -1.83     | 32%                                | 0.60      |
| More than Bachelor's                   | 26%                    | 29%                              | -1.57     | 23%                                  | 1.43      | 45%                                   | -3.50***  | 50%                                | -5.39***  |
| Expected Highest Education Level (1–4) | 2.94 (0.82)            | 2.86 (0.74)                      | 2.24*     | 2.78 (0.70)                          | 4.28***   | 3.13 (0.75)                           | -1.89     | 3.13 (0.79)                        | -2.34*    |
| Childhood Family Income:               |                        |                                  |           |                                      |           |                                       |           |                                    |           |
| Below average                          | 23%                    | 5%                               | 11.89***  | 5%                                   | 10.55***  | 4%                                    | 3.85***   | 6%                                 | 4.37***   |
| Average                                | 56%                    | 41%                              | 7.00***   | 46%                                  | 4.13***   | 25%                                   | 5.19***   | 25%                                | 6.32***   |
| Above average                          | 21%                    | 54%                              | -18.62*** | 49%                                  | -14.47*** | 71%                                   | -10.27*** | 69%                                | -12.11*** |
| Current Financial Concerns (1–4)       | 2.72 (1.08)            | 2.53 (1.05)                      | 4.19***   | 2.54 (1.05)                          | 3.64***   | 2.45 (1.10)                           | 2.01*     | 2.54 (1.08)                        | 1.65      |
| <b>Academic Background</b>             |                        |                                  |           |                                      |           |                                       |           |                                    |           |
| Academic Preparation (1–4)             | 2.13 (0.83)            | 2.28 (0.75)                      | -4.54***  | 2.24 (0.71)                          | -3.10**   | 2.28 (0.88)                           | -1.56     | 2.47 (0.87)                        | -4.31***  |
| English Language Proficiency           | 93%                    | 75%                              | 14.34***  | 71%                                  | 15.82***  | 92%                                   | 0.25      | 84%                                | 3.32***   |
| University was First Choice            | 53%                    | 50%                              | 1.18      | 52%                                  | 0.28      | 53%                                   | -0.08     | 40%                                | 2.70**    |
| <b>Barriers to Campus Involvement</b>  |                        |                                  |           |                                      |           |                                       |           |                                    |           |
| Work ≥ 20 hours per week               | 10%                    | 4%                               | 5.43***   | 4%                                   | 5.06***   | 3%                                    | 2.07*     | 6%                                 | 1.32      |
| Live on Campus                         | 8%                     | 34%                              | -19.74*** | 32%                                  | -17.04*** | 47%                                   | -12.01*** | 37%                                | -11.10*** |
| Commute ≤ 30 minutes                   | 37%                    | 50%                              | -6.34***  | 53%                                  | -7.35***  | 43%                                   | -0.99     | 36%                                | 0.31      |
| Commute > 30 minutes                   | 55%                    | 16%                              | 20.55***  | 15%                                  | 19.06***  | 11%                                   | 7.71***   | 27%                                | 5.98***   |

|                                      | Domestic         | International: All |           | International: Chinese |           | International: S. Asian |          | International: Other |          |
|--------------------------------------|------------------|--------------------|-----------|------------------------|-----------|-------------------------|----------|----------------------|----------|
|                                      | % / M (SD)       | % / M (SD)         | t-value   | % / M (SD)             | t-value   | % / M (SD)              | t-value  | % / M (SD)           | t-value  |
| <b>Campus Involvement</b>            |                  |                    |           |                        |           |                         |          |                      |          |
| Extracurricular Participation (2–6)  | 3.98 (1.30)      | 4.25 (1.29)        | -5.28***  | 4.26 (1.30)            | -4.77***  | 4.35 (1.29)             | -2.43*   | 4.19 (1.25)          | -1.73    |
| Cross-Racial Socialization (1–5)     | 3.24 (1.37)      | 2.51 (1.27)        | 13.42***  | 2.24 (1.10)            | 16.92***  | 3.45 (1.38)             | -1.33    | 3.39 (1.32)          | -1.16    |
| Academic Support in English          | 7%               | 33%                | -19.46*** | 36%                    | -20.16*** | 20%                     | -4.09*** | 24%                  | -6.63*** |
| <b>Bias and Discrimination</b>       |                  |                    |           |                        |           |                         |          |                      |          |
| Discrimination: Race/Ethnicity (1–5) | 1.29 (0.73)      | 1.55 (0.96)        | -7.98***  | 1.51 (0.92)            | -6.46***  | 1.70 (1.17)             | -4.65*** | 1.63 (1.04)          | -4.76*** |
| Discrimination: English Accent (1–5) | 1.13 (0.49)      | 1.68 (0.97)        | -21.05*** | 1.70 (0.94)            | -20.74*** | 1.70 (1.16)             | -9.24*** | 1.58 (1.02)          | -8.97*** |
| Ignored: Race/Ethnicity (1–5)        | 1.48 (0.92)      | 1.70 (1.00)        | -5.96***  | 1.67 (0.94)            | -4.74***  | 1.69 (1.13)             | -1.99*   | 1.87 (1.19)          | -4.40*** |
| Exclusion from Opportunities (1–5)   | 1.19 (0.60)      | 1.38 (0.76)        | -7.45***  | 1.38 (0.74)            | -6.90***  | 1.36 (0.75)             | -2.44*   | 1.38 (0.86)          | -3.34*** |
| Lower Grades: Race/Ethnicity (1–5)   | 1.20 (0.63)      | 1.45 (0.83)        | -8.99***  | 1.51 (0.85)            | -9.99***  | 1.23 (0.65)             | -0.31    | 1.29 (0.77)          | -1.38    |
| <b>Dependent Variable</b>            |                  |                    |           |                        |           |                         |          |                      |          |
| Level of Distress (1–20)             | 13.63 (3.95)     | 11.90 (3.75)       | 10.93***  | 11.39 (3.47)           | 12.85***  | 13.33 (4.12)            | 0.64     | 13.64 (4.21)         | -0.04    |
|                                      | <i>n</i> = 2,444 | <i>n</i> = 816     |           | <i>n</i> = 626         |           | <i>n</i> = 75           |          | <i>n</i> = 115       |          |

*Note.* Percentages are reported for binary categorical variables. Means and standard deviations are reported for ordinal variables (range in parentheses by variable name). Reported ns reflect the maximum sample size per group; some variables have marginally fewer valid cases due to item-level missing data.

\*  $p \leq .05$  \*\*  $p \leq .01$  \*\*\*  $p \leq .001$ ; t-values indicate the significance of the difference between each international student group and domestic students.

**Table 2**  
*Hierarchical Multiple Regression Results: Distress*

|                                | Model 1     |                | Model 2     |                | Model 3     |                | Model 4     |                |
|--------------------------------|-------------|----------------|-------------|----------------|-------------|----------------|-------------|----------------|
|                                | <i>Beta</i> | <i>t-value</i> | <i>Beta</i> | <i>t-value</i> | <i>Beta</i> | <i>t-value</i> | <i>Beta</i> | <i>t-value</i> |
| Constant                       | 12.648***   | 75.75          | 13.530***   | 28.18          | 13.355***   | 23.96          | 11.943***   | 20.72          |
| Student Population             |             |                |             |                |             |                |             |                |
| International: Chinese         | -2.261***   | -13.04         | -2.148***   | -10.75         | -1.523***   | -6.73          | -1.928***   | -8.23          |
| International: South Asian     | -0.236      | -.53           | .250        | .52            | .524        | 1.08           | .160        | .33            |
| International: Other           | -.110       | -0.30          | .310        | .79            | .539        | 1.36           | .197        | .50            |
| Socio-Economic Characteristics |             |                |             |                |             |                |             |                |
| Parents' Education: BA         |             |                | -.291       | -1.67          | -.266       | -1.54          | -.279       | -1.62          |
| Parents' Education: Above BA   |             |                | -.129       | -.67           | -.131       | -.68           | -.118       | -.62           |
| Educational Expectations       |             |                | -.084       | -.90           | -.077       | -.82           | -.073       | -.78           |
| Family Income: Average         |             |                | -.248       | -1.23          | -.257       | -1.27          | -.098       | -.49           |
| Family Income: Above average   |             |                | -.094       | -.39           | -.075       | -.31           | .022        | .09            |
| Current Financial Concerns     |             |                | .618***     | 8.89           | .630***     | 9.10           | .572***     | 8.27           |
| Academic Background            |             |                |             |                |             |                |             |                |
| Academic Preparation           |             |                | -.891***    | -9.75          | -.881***    | -9.68          | -.894***    | -9.87          |
| English Language Proficiency   |             |                | .179        | .76            | .090        | .39            | .156        | .67            |
| University was First Choice    |             |                | -.209       | -1.44          | -.188       | -1.31          | -.164       | -1.14          |
| Opportunities                  |             |                |             |                |             |                |             |                |
| Work ≥ 20 hours per week       |             |                |             |                | .205        | .77            | .139        | 0.53           |
| Commute ≤ 30 minutes           |             |                |             |                | .414        | 1.81           | .369        | 1.62           |
| Commute > 30 minutes           |             |                |             |                | .563*       | 2.37           | .487*       | 2.05           |

|                                | Model 1     |                | Model 2     |                | Model 3     |                | Model 4     |                |
|--------------------------------|-------------|----------------|-------------|----------------|-------------|----------------|-------------|----------------|
|                                | <i>Beta</i> | <i>t-value</i> | <i>Beta</i> | <i>t-value</i> | <i>Beta</i> | <i>t-value</i> | <i>Beta</i> | <i>t-value</i> |
| Campus Involvement             |             |                |             |                |             |                |             |                |
| Extracurricular Participation  |             |                |             |                | -.252***    | -4.39          | -.254***    | -4.46          |
| Cross-Racial Socialization     |             |                |             |                | .295***     | 5.26           | .228***     | 4.06           |
| Academic Support in English    |             |                |             |                | -.460*      | -2.09          | -.648**     | -2.92          |
| On-Campus Discrimination       |             |                |             |                |             |                |             |                |
| Discrimination: Race/Ethnicity |             |                |             |                |             |                | .314**      | 2.82           |
| Discrimination: English Accent |             |                |             |                |             |                | .219        | 1.66           |
| Ignored: Race/Ethnicity        |             |                |             |                |             |                | .191*       | 2.30           |
| Exclusion from Opportunities   |             |                |             |                |             |                | .360**      | 2.83           |
| Lower Grades: Race/Ethnicity   |             |                |             |                |             |                | .267*       | 2.20           |
| $R^2$                          | .080        |                | .160        |                | .179        |                | .209        |                |
| Adjusted $R^2$                 | .078        |                | .156        |                | .173        |                | .201        |                |
| $\Delta R^2$                   |             |                | .080        |                | .019        |                | .030        |                |
| $\Delta$ Adjusted $R^2$        |             |                | .078        |                | .017        |                | .028        |                |
| <i>df</i>                      | 5           |                | 14          |                | 20          |                | 25          |                |
| F                              | 55.42       |                | 34.58       |                | 27.42       |                | 25.90       |                |

Note. Model 1, N = 3,210; Model 2, N = 2,548; Model 3, N = 2,532; Model 4, N = 2,484. All models control for gender and year of study; coefficients not shown. Reported df reflect their inclusion.

\*  $p \leq .05$  \*\*  $p \leq .01$  \*\*\*  $p \leq .001$



Model 2 introduces socio-economic and academic background variables. Current financial concerns strongly predict distress: students with more worries about financing their education report significantly higher levels. Neither childhood income nor parental education reaches statistical significance.<sup>1</sup> Academic readiness is negatively associated with distress and has the largest coefficient among the social and academic variables, underscoring the importance of strong academic preparation for thriving in a new university setting. In this model, the coefficient for Chinese international students decreases slightly, suggesting that their lower distress is partially explained by their advantaged social and educational backgrounds. Surprisingly, English language proficiency is not significant, suggesting that language fluency does not impact distress.

Model 3 adds measures of campus opportunities and involvement. Longer commute times are associated with significantly higher distress, while work hours and shorter commutes are not. Participation in extracurricular activities is related to reduced levels of distress. However, more frequent cross-racial interaction is associated with somewhat higher distress. This counterintuitive pattern may suggest that more frequent cross-racial contact increases the likelihood of negative or hostile encounters, thereby increasing stress.

Receiving academic support in English is linked with lower distress, suggesting that such institutional resources may be protective for students facing language challenges. Meanwhile, in this model the coefficient for current financial concerns increases modestly, possibly because financial strain is intertwined with campus opportunity structures, such as the ability to live on campus. The coefficient for Chinese international students also declines substantially (from -2.148 to -1.523), suggesting that living

on or near campus, working fewer hours, and participating in extracurricular activities may contribute to their lower distress levels.

Model 4 incorporates the measures of bias and discrimination. Four of the five variables—perceived unfair treatment, feeling ignored, exclusion from opportunities, and perceived unfair grading—are significantly associated with higher distress, underscoring the impact of discriminatory experiences on student well-being. Notably, the coefficient for Chinese international students becomes substantially more negative in this model, suggesting that their distress levels would be even lower in the absence of discrimination.

Financial concern remains a strong predictor of distress, though its coefficient decreases modestly in Model 4, suggesting that some of its effect may be mediated by discriminatory experiences. Academic preparedness remains a robust predictor, consistently associated with lower distress. The coefficients for extracurricular participation remain largely stable. Frequent cross-racial interaction still slightly increases distress, though the coefficient weakens with the controls for bias and discrimination.

## DISCUSSION

Prior research on international students and mental health has produced mixed findings, due in part to the tendency to either treat international students as a homogeneous category, focus on a single subgroup, or omit comparisons with domestic students. Our findings help clarify this picture by revealing substantial cross-sectional variation in distress across student groups.<sup>2</sup>

Although international students overall report lower distress than domestic students, this pattern is driven largely by Chinese international students; students from South Asia and from other regions do not differ significantly from their domestic peers. This supports prior work that

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1 In models excluding current financial concerns, both childhood income and parent education were significantly associated with lower levels of student distress, suggesting that the effects of childhood socio-economic status may operate through current financial concerns.

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2 We use the term variation to refer to between-group differences observed in cross-sectional data. No longitudinal or temporal effects are examined in this study.

treats international students not as a monolithic population, but as culturally distinct groups with differentiated experiences (Avenido, 2023; Chen & Zhou, 2019; Yan & Berliner, 2013; Zhou & Zhang, 2014). More broadly, our findings demonstrate that even limited disaggregation can reveal meaningful differences within the international student population.

Our analysis also extends prior research by examining the academic, financial, social, and institutional factors associated with distress. Academic preparation and current financial concerns emerge as the strongest and most consistent predictors. Students who feel better-prepared for university report lower distress, while worries about financing one's education are strongly associated with higher distress. Notably, more proximate financial conditions matter more than background advantage: parental education and childhood family income do not significantly predict distress once current academic and financial circumstances are taken into account. This suggests that academic readiness and current economic strain are more consequential for students' well-being than socio-economic origins.

Some findings were less expected. English language proficiency was not a significant predictor of distress. One possible explanation is that strong academic preparation offsets some of the disadvantages associated with weaker English proficiency. It is also possible that in a university where a large share of students speak English as a second language, those with lower proficiency experience less of the social and academic discomfort documented in prior research (Finn et al., 2022; Martirosyan et al., 2019).

Campus involvement and campus climate also play important roles. Extracurricular participation is associated with lower distress, suggesting that involvement in campus life may provide an important source of connection and support. By contrast, frequent cross-racial interaction is associated with slightly higher distress, even after controlling for experiences of bias and discrimination. This suggests that for at least some students, cross-racial contact may involve stressful or negative encounters

that elevate distress even in the absence of overt discrimination.

More broadly, the strong association between discriminatory experiences and distress underscores the importance of campus climate. Bias and discrimination are not peripheral experiences; they are closely tied to students' psychological well-being and disproportionately affect international students. The strong predictive power of campus opportunity structures and climate variables reinforces existing research on how institutional context shapes student well-being (Alharbi & Smith, 2018; De Moissac et al., 2020; Guo & Guo, 2017; Lee & Rice, 2007; Shadowen et al., 2019). The significant role of discrimination adds to growing evidence on the importance of campus racial climate, especially in diverse educational settings (Alharbi & Smith, 2018; Cao et al., 2016; Shadowen et al., 2019).

Taken together, these findings challenge the assumption that international students are uniformly more vulnerable while offering guidance for academic leaders seeking to support student well-being. For purposes of support, programming, or policy, institutions should avoid treating international students as a homogeneous category and instead account for how students differentially experience the university environment. As our study shows, distress varies meaningfully across subgroups, and interventions are likely to be more effective when tailored to students' specific circumstances and barriers. Campuses should provide culturally specific supports and targeted outreach, particularly for groups reporting elevated levels of distress or facing distinct barriers to well-being.

The results also point to two especially important areas for intervention: academic preparation and financial strain. Because academic preparation has a consistently protective association with well-being, institutions should invest in supports that help students prepare for university expectations and succeed once enrolled, including pre-arrival orientation, summer bridge programming, and proactive academic support for students experiencing academic difficulty. Because current financial concern is one of the strongest predictors of distress, financial

aid, emergency grants, and affordable housing can provide tangible relief for students facing economic strain.

Finally, the findings call attention to the importance of campus climate. Extracurricular participation offers an important protection against distress; campuses should invest in these kinds of programs and make them as accessible as possible. More importantly, because racist and discriminatory experiences compromise student well-being, campus leaders should prioritize interventions that foster a positive, inclusive campus climate. Such efforts would benefit not only international students but the broader student population. Regular campus climate surveys assessing experiences of racism and discrimination could be especially useful in identifying the groups most at risk and in tracking whether institutional interventions are having their intended effects.

## Limitations and Directions for Future Research

This study has several limitations. First, our dependent variable captures distress in the form of emotional strain and academic overwhelm, but does not include broader mental health indicators such as anxiety, sleep disturbance, or clinical diagnoses. As such, our findings should be interpreted within the scope of psychological strain and distress, rather than mental health more broadly. Second, although disaggregating international students into three regional categories revealed meaningful subgroup differences, these categories cannot capture within-region heterogeneity or more granular cultural, racial, linguistic, or immigration-related distinctions. Third, the data are drawn from a single institution and are cross-sectional, which limits both causal inference and the ability to assess how patterns may vary across campus contexts.

These limitations point to several directions for future research. Studies should continue to disaggregate international student populations wherever sample size permits, while also examining a wider range of mental health outcomes, including anxiety, depression, and more comprehensive distress measures. Research

across multiple post-secondary institutions would be especially valuable, as it could help identify the institutional characteristics most predictive of student well-being. Such work would also make it possible to assess how campus climate, student supports, and local opportunity structures shape disparities in distress across student groups.

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