

Psychological distress and associated stressors with proposed stress reduction model for Chinese international postgraduate students in Malaysia: A cross-sectional study

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ABSTRACT

Introduction: In recent years, there has been an exponential rise in students inbound to Malaysia to pursue their postgraduate studies. In particular, Chinese international postgraduate students (CIPS) represent a rapidly growing student population in this country, which is postulated to lead to substantial psychological distress resulting from academic, cultural, and financial adjustments that are required of the students immersing themselves in a new environment. Nevertheless, quantitative evidence regarding depression, anxiety, and stress among CIPS in Malaysian public universities remains limited.

Materials and Methods: A cross-sectional study was conducted among 347 Chinese international postgraduate students at Universiti Putra Malaysia (UPM) using mixed-mode convenience sampling. Data were collected using a structured questionnaire that included sociodemographic variables, stressors, stress-relieving activities, and the Depression Anxiety Stress Scales-21 (DASS-21). For the statistical analysis, we performed descriptive statistics, group comparisons, Pearson correlations, and hierarchical regression analyses.

Results: The prevalence of mild-to-extremely severe symptoms was 61.1% for depression, 67.1% for anxiety, and 56.2% for stress. Psychological distress was significantly associated with perceived discrimination, financial concerns, poorer self-rated health, and depression history. In the final hierarchical regression model, perceived discrimination emerged as the strongest predictor of distress ($\beta = .270, p < .001$). Furthermore, financial concerns, poorer self-rated health, and participation in artistic activities such as calligraphy classes were also positively associated with increasing DASS-21 scores, whereas positive future outlook scores showed a negative association. The final model explained 53.1% of the variance in psychological distress.

Conclusion: Psychological distress among CIPS at UPM was substantial and appeared to be strongly related to

acculturative stress and resource-related pressures. A proposed model to overcome this should include university-driven, culturally responsive mental health services, anti-discrimination support, and financial and academic assistance to ensure the successful onboarding and orientation of international postgraduate students.

KEYWORDS:

Psychological distress; chinese international students; acculturative stress; DASS-21; Malaysia; postgraduate students

INTRODUCTION

Global cross-border higher education has expanded steadily over the past two decades, and Malaysia has emerged as a major destination for Chinese students.^{1,2} Malaysia attracts many international postgraduate students because of its globally recognised qualifications, budget-friendly tuition and living expenses, including numerous world-class branch campuses. Our country offers an ideal environment for advanced studies, combining a safe, multicultural society with widespread proficient English-speaking locals. Interestingly, Chinese nationals have made up more than 40% of all international students in Malaysia during 2024, with total enrolments hitting 56,198. Specifically, in Universiti Putra Malaysia (UPM), our institutional data from the UPM School of Graduate Studies showed that as of 26th May 2023, there were 2,837 Chinese postgraduate students at UPM, including 1,105 master's students and 1,732 PhD students. Chinese postgraduate students accounted for approximately 27.6% of the listed postgraduate student population at UPM.

Although the two countries are culturally close, Chinese international postgraduate students (CIPS) still face challenges related to language, academic demands, financial pressure, daily adjustment, and social support.³ Evidence from multiple countries points to growing concern about students' mental health. Nearly one in five students experiences a mental disorder, most commonly anxiety or depression.⁴ In Malaysia, about 30% of local university

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students were reported to be at risk of anxiety.⁵ Research also indicates that international students often report higher distress than local students but are less likely to use mental health services.⁶⁻⁷ CIPS in Malaysia are part of South-South mobility and may face additional adaptation pressures related to language, social integration, and identity.⁸⁻¹⁰

Existing studies in Malaysian universities have mainly focused on local students,^{5,11} while studies on CIPS have often examined emotional expression or psychological well-being using other instruments, including mixed international student samples without separate analysis of Chinese postgraduates, or used qualitative methods without standardised measures.¹²⁻¹⁵ To date, no study in a Malaysian public research university has used the Depression, Anxiety, and Stress Scale (DASS-21) to assess depression, anxiety, and stress among CIPS while also examining major stressors and stress-relieving activities.¹²⁻¹⁵ This study was conceptually informed by the acculturative stress framework and conservation of resources theory, which suggest that psychological distress among international students may arise from perceived discrimination, cultural adjustment difficulties, financial strain, and reduced social or psychological resources.

Despite the growing number of CIPS in Malaysia, quantitative evidence on their mental health remains limited. Despite the growing number of these international students in Malaysia, few quantitative studies have examined depression, anxiety, and stress simultaneously using a validated instrument while also investigating culturally relevant stressors and stress-relieving behaviours within a South-South educational mobility context. Based on this gap, this study focused on CIPS at UPM with the aim of identifying a model that can propose corrective measures to mitigate this problem. This study aimed to determine the prevalence and severity of depression, anxiety, and stress among CIPS at UPM; examine demographic and psychosocial correlates of psychological distress; and finally, to identify significant predictors of DASS-21 scores using hierarchical regression analysis.

MATERIALS AND METHODS

Study design and sampling criteria

We conducted a cross-sectional survey among CIPS at UPM in March 2025. Participants were recruited using a mixed-mode non-probability sampling strategy that combined offline campus-based recruitment and online dissemination via Chinese student WeChat groups. All eligible participants completed the survey via WeChat by scanning a QR code or opening the survey link.¹⁶ WeChat was used as the main access channel because it is widely used among Chinese students. As the online link could be further shared through WeChat groups, the total number of students reached was unknown; therefore, an overall response rate could not be calculated. Inclusion criteria were enrolment in a master's or doctoral programme at UPM, Chinese nationality, age ≥ 18 years, and the ability to read Chinese or English. Sample size was estimated using a single-proportion formula for cross-sectional studies. Based on an expected prevalence of 50%,¹⁷⁻¹⁸ $\alpha=0.05$, and a margin of error of 0.06, the minimum required

sample size was 267. After adding 20% for possible non-response, the target sample was approximately 330. In total, 347 usable responses were obtained. This study was approved by the UPM Research Ethics Committee (JKEUPM-2023-1423) and was conducted in accordance with the Declaration of Helsinki. Participation was voluntary, responses were anonymous and confidential, and online informed consent was obtained from all participants.

Instrument of measurement

The survey was conducted using a 55-item structured questionnaire administered through Questionnaire Star (Wenjuanxing), an online survey platform.¹⁶ The stressor and stress-relieving activity items listed were analysed as individual indicators rather than latent psychometric scales. The questionnaire included:

1. **Demographic variables:** gender, age, student type, semester, sibling status, marital status, employment status, depression history, main financial source, and income range.
2. **Key factors, stressors, and stress-relieving activities:** Single-item measures were used for relationship with supervisor, English fluency, self-evaluation of current health, awareness of the counselling unit, and likelihood of seeking help; self-evaluation of current health referred to participants' overall current health status, with higher scores indicating poorer health. The questionnaire also included stressor and stress-relieving activity items, all rated on a five-point Likert scale (1=strongly disagree/never to 5=strongly agree/very often). Internal consistency was acceptable for the stressor and stress-relieving activity items (Cronbach's $\alpha=0.854$ and 0.703). These items were adapted from previous literature and expert-reviewed.
3. **Additional questionnaire using DASS-21:** Psychological distress over the past week was assessed using the DASS-21, which includes three subscales—depression, anxiety, and stress—with seven items each.¹⁹ Items were rated on a four-point Likert scale (0=did not apply at all, 3=applied most of the time). For each subscale, the seven item scores were summed and then multiplied by two, yielding subscale scores ranging from 0 to 42. The total DASS-21 score ranged from 0 to 126, with higher scores indicating greater psychological distress. Internal consistency was excellent for the total scale and all subscales (Cronbach's $\alpha=0.973$; depression=0.934, anxiety=0.923, stress=0.920). Scores were classified into normal, mild, moderate, severe, and extremely severe according to the standard DASS severity cut-off scores. The DASS-21 is a screening instrument.

Statistical analysis

Data were analysed using SPSS Statistics 26.0. Descriptive statistics were used to summarise the sample. Internal consistency was assessed using Cronbach's α , and common method bias was examined using Harman's single-factor test. Group differences were tested using independent-samples *t*-tests and one-way ANOVA, associations using Pearson correlation coefficients, and factors associated with DASS-21 total score using hierarchical regression. Variables were entered in three conceptual blocks: sociodemographic variables, stressor variables, and stress-relieving activity

variables. Statistical significance was set at $\alpha=0.05$. Prior to regression analysis, assumptions of normality, linearity, homoscedasticity, and multicollinearity were examined. Variance inflation factor values were below conventional thresholds, indicating no evidence of problematic multicollinearity.

RESULTS

Sample characteristics and reliability

This study included 347 valid responses. Table I presents the sociodemographic characteristics. Overall, the sample was predominantly female, mainly aged 26–30 years, and consisted mostly of master's students. Most participants were in the early to middle stages of study, and over half reported no history of depression. In terms of financial background, nearly half were self-funded, and most reported a monthly income of RM 1,000-5,000. English communication ability was generally limited, with nearly half rating their fluency as poor or fair. Awareness and use of mental health services were also limited: most students had either not heard of or had only heard of the UPM counselling unit, and actual service use was low. Help-seeking intention was also generally low. Harman's single-factor test showed that the first unrotated factor explained 37.6% of the total variance, below the 40% threshold, suggesting that common method bias was not a major concern.

Descriptive statistics and prevalence of DASS-21

The mean scores were 14.89 (SD=11.84) for depression, 15.48 (SD=11.40) for anxiety, and 17.29 (SD=11.37) for stress. The mean total DASS-21 score was 47.65 (SD=33.44). Among the 347 participants, the prevalence of mild-to-extremely severe symptoms was 61.1% for depression, 67.1% for anxiety, and 56.2% for stress. Anxiety showed the highest prevalence, followed by depression and stress. In terms of severity distribution, 33.7% of participants were in the severe-to-extremely severe range for depression, 50.7% for anxiety, and 29.1% for stress (Table II).

Group differences

Demographic differences in DASS-21 total scores

We compared overall psychological distress (DASS-21 total score) across sociodemographic groups. Significant differences were found for gender, age, marital status, depression history, and income range. Males scored higher than females ($t=3.82$, $p<0.001$). Distress also varied significantly across age groups ($F=5.26$, $p<0.01$), with the 26–30 group showing the highest scores and the 31–39 and ≥ 40 groups showing lower scores. Marital status was significant ($F=3.89$, $p<0.01$), with divorced participants reporting the highest distress. Depression history showed the strongest group difference ($F=35.29$, $p<0.001$): participants with no history had the lowest scores, whereas those with undiagnosed, diagnosed, or uncertain history reported higher distress. Income range also differed significantly ($F=4.94$, $p=0.01$), with the middle-income group scoring higher in the DASS-21 scores than the high-income group. No significant differences were found for student type, semester, sibling status, employment status, or main financial source ($p>0.05$).

Group differences in stressors across demographics

This study compared nine stressors across sociodemographic groups, including homesickness, perceived discrimination, living conditions, academic pressure, financial concerns, social support, adaptation to a new culture, future outlook, and health. No significant differences were found for sibling status or main financial source across any stressor indicators ($p>0.05$). For gender, males scored significantly higher on perceived discrimination ($t=3.17$, $p<0.01$), whereas females scored higher on academic pressure ($t=-3.13$, $p<0.001$).

Group differences in stress-relieving activities across demographics

This study found significant differences across several stress-relieving activities among sociodemographic groups (Table III). No significant differences were found for sibling status or depression history across any stress-relieving activities ($p>0.05$). In addition, social entertainment and cooking/cleaning rooms showed no significant differences across demographic groups.

For gender, males reported higher participation in online gaming ($t=4.75$, $p<0.001$) and mindfulness meditation ($t=3.92$, $p<0.001$) than females. Age differences were also significant, with younger students reporting more frequent online gaming ($F=17.17$, $p<0.001$) and those aged 26-30 years reporting the highest mindfulness meditation scores ($F=3.69$, $p=0.01$). Master's students reported higher online gaming than PhD students ($t=3.78$, $p<0.01$). Semester differences were found for online gaming ($F=8.81$, $p<0.001$), which was highest in semesters 5-6, and mindfulness meditation ($F=4.94$, $p<0.001$), which was highest in semesters 1-2. Marital status showed a significant difference in online gaming, with divorced students reporting the highest scores ($F=5.52$, $p<0.001$). The main financial source was associated with online social networks ($F=3.29$, $p=0.04$), online gaming ($F=14.48$, $p<0.001$), and doing arts ($F=4.99$, $p=0.01$), with scholarship students reporting higher engagement than the other groups. Income range also showed significant differences: low- and middle-income students reported more frequent use of online social networks ($F=3.59$, $p=0.03$), while the middle-income group reported higher engagement in doing arts ($F=3.27$, $p=0.04$) and mindfulness meditation ($F=3.60$, $p=0.03$).

Correlation analysis

Table IV shows the correlations between DASS-21 total score and the main stressors, stress-relieving activities, and sociodemographic variables. Overall, psychological distress was positively correlated with most stressors. Perceived discrimination showed the strongest correlation with DASS-21 total score ($r=0.57$, $p<0.001$), followed by poorer health ($r=0.45$, $p<0.001$), financial concerns ($r=0.43$, $p<0.001$), living condition ($r=0.43$, $p<0.001$), new culture adaptation ($r=0.40$, $p<0.001$), homesickness ($r=0.39$, $p<0.001$), and lower social support ($r=0.37$, $p<0.001$). Academic pressure and future outlook also showed weaker but significant correlations. For stress-relieving activities, higher psychological distress was significantly associated with more frequent online gaming ($r=0.26$, $p<0.001$), doing arts ($r=0.29$, $p<0.001$), and mindfulness meditation ($r=0.22$, $p<0.001$), whereas other stress-relieving activities were not significantly correlated. Among sociodemographic variables, gender ($r=-0.20$,

Table I: Demographic Characteristics of Participants (N = 347)

Variables	Category	n (%)
Gender	Male	145 (41.79)
	Female	202 (58.2)
Age	21-25	105 (30.26)
	26-30	142 (40.92)
	31-39	92 (26.51)
	≥40	8 (2.31)
Student type	Master's	199 (57.35)
	Doctoral	148 (42.65)
Semester	1-2	97 (27.95)
	3-4	139 (40.06)
	5-6	62 (17.87)
	≥7	49 (14.12)
Marital status	Single	208(59.9)
	Married	106(30.5)
	Divorced	14(4)
	Other	19(5.4)
Depression history	No	194 (55.91)
	Not sure	101 (29.11)
	Yes, undiagnosed	33 (9.51)
	Yes, diagnosed	19 (5.48)
Main financial source	Scholarship	46(13.2)
	Self-support	166(47.8)
	Family or friends' aid	135(38.9)
Income range	<1000RM/Month	85(24.5)
	1000-5000RM/Month	205(59.1)
	>5000RM/ Month	57(16.4)
Communication of English fluency	Poor	16(4.6)
	Fair	144 (41.50)
	Good	136 (39.19)
	Very good	43 (12.39)
	Excellent	8 (2.30)
Awareness of counselling unit	No	138(39.7)
	Heard of it	161(46.3)
	Used it	48(13.8)
Likelihood of seeking help from counselling service	Definitely not	16(4.61)
	Not likely	113(32.5)
	Somewhat likely	146(42.0)
	Very likely	56(16.1)
	Definitely	16 (4.61)

Note: The "Other" marital status category referred to participants who did not identify as single, married, or divorced, or who preferred not to specify their marital status.

Table II: Severity distribution of depression, anxiety, and stress among CIPS at UPM

Severity	Depression n (%)	Anxiety n (%)	Stress n (%)
Normal	135 (38.9)	114 (32.9)	152 (43.8)
Mild	31 (8.9)	16 (4.6)	34 (9.8)
Moderate	64 (18.4)	41 (11.8)	60 (17.3)
Severe	49 (14.1)	37 (10.7)	68 (19.6)
Extremely severe	68 (19.6)	139 (40.1)	33 (9.5)
Mild-to-extremely severe	212 (61.1)	233 (67.1)	195 (56.2)

Table III: Significant group differences across stress-relieving activities

Activity	Gender	Age	Marital Status	Student Type	Semester	Sibling	Depression History	Financial Source	Income
Online social networks	—	—	—	—	—	—	—	Scholarship ↑	Low & Middle ↑
Online gaming	Male ↑	21-25 ↑	Divorced ↑	Master ↑	5-6 ↑	—	—	Scholarship ↑	—
Physical exercise	—	—	—	—	—	—	—	—	—
Do arts	—	—	—	—	—	—	—	Scholarship ↑	Middle ↑
Mindfulness meditation	Male ↑	26-30 ↑	—	—	1-2 ↑	—	—	—	Middle ↑

Social entertainmentNo significant differences
Cooking/cleaning roomsNo significant differences
Note: ↑ indicates a higher frequency.

Table IV: Correlations between DASS-21 and stressors, common ways of relieving stress, and sociodemographic variables

Category	Variables	M	SD	r	p
Stressors	Perceived Discrimination	2.69	1.10	0.57***	<0.001
	Health (poorer health)	3.28	1.00	0.45***	<0.001
	Financial Concerns	3.41	0.97	0.43***	<0.001
	Living Condition	3.36	1.03	0.43***	<0.001
	New Culture Adaptation	3.31	0.98	0.40***	<0.001
	Homesickness	3.43	1.04	0.39***	<0.001
	Social Support (higher scores = lower support)	3.35	0.96	0.37***	<0.001
	Academic Pressure	3.78	0.90	0.24***	<0.001
ways of relieving stress	Future Outlook	3.73	0.92	0.15**	0.01
	Online gaming	3.18	1.20	0.26***	<0.001
	Do arts (drawing, calligraphy, music)	3.11	1.16	0.29***	<0.001
	Mindfulness meditation	3.02	1.14	0.22***	<0.001
	Online social networks	3.92	0.85	0.09	0.11
	Physical exercise	3.41	0.96	0.06	0.25
	Participating in social entertainment	3.69	0.79	0.10	0.08
	Cooking or cleaning rooms	3.71	0.95	0.09	0.11
Sociodemographic	Gender	1.58	0.49	-0.20***	<0.001
	Age	2.01	0.81	-0.16**	0.01
	Marital status	1.55	0.81	0.12*	0.03
	Depression History	1.65	0.87	0.42***	<0.001

Note: All stressor variables and stress-relieving activities are shown. Sociodemographic variables are shown only when significantly correlated with DASS-21 total score. Higher scores on social support indicate lower perceived support; higher scores on health indicate poorer self-rated health.

***p<0.001, **p<0.01, *p<0.05.

Table V: Hierarchical regression analysis predicting DASS-21 from demographic factors, stressors, and ways of relieving stress (N = 347)

Model	Variable	Block I β	Block II β	Block III β
Block I	Gender	-0.192***	-0.129**	-0.116**
	Age	-0.166**	-0.084*	-0.067
	Marital status	0.091	0.069	0.069
	Depression History	0.417***	0.264***	0.257***
	Income range	-0.078	-0.065	-0.066
Block II	Homesickness		0.069	0.061
	Perceived Discrimination		0.288***	0.270***
	Living Condition		0.072	0.065
	Academic Pressure		0.030	0.056
	Financial Concerns		0.113*	0.109*
	Social Support		0.105*	0.084
	New Culture Adaptation		-0.049	-0.055
	Future Outlook		-0.096*	-0.097*
	Health		0.161**	0.167**
	Online social networks			0.012
Block III	Online gaming			0.027
	Physical exercise			-0.015
	Do arts			0.123**
	Mindfulness meditation			0.011
	Participating in social entertainment			-0.036
	Cooking or cleaning rooms			-0.022
R ²	0.258	0.518	0.531	
ΔR^2	-	0.260	0.013	
F	23.69***	25.45***	17.53***	
df	341	332	325	

Note: ***p<0.001, **p<0.01, *p<0.05

p<0.001), age (r=-0.16, p=0.01), marital status (r=0.12, p=0.03), and depression history (r=0.42, p<0.001) were significantly associated with DASS-21 total score.

Hierarchical regression

Hierarchical regression was used to examine factors associated with DASS-21 total score among CIPS (Table V). Variables were entered in three blocks. Block I included sociodemographic variables and explained 25.8% of the

variance in psychological distress ($R^2=0.258$, $F(5,341) = 23.69$, $p<0.001$). Gender ($\beta=-0.192$, $p<0.001$), age ($\beta=-0.166$, $p<0.01$), and depression history ($\beta=0.417$, $p<0.001$) were significant predictors. Block II added stressor variables and increased the explained variance to 51.8% ($R^2=0.518$, $\Delta R^2=0.260$, $p<0.001$). Perceived discrimination ($\beta=0.288$, $p<0.001$), financial concerns ($\beta=0.113$, $p<0.05$), and poorer health ($\beta=0.161$, $p<0.01$) were significant positive predictors, whereas future outlook was a significant negative predictor

($\beta = -0.096$, $p < 0.05$). Block III added stress-relieving activities and produced a small but significant increase in explained variance ($R^2 = 0.531$, $\Delta R^2 = 0.013$, $p < 0.05$). In the final model, perceived discrimination ($\beta = 0.270$, $p < 0.001$), financial concerns ($\beta = 0.109$, $p < 0.05$), poorer health ($\beta = 0.167$, $p < 0.01$), and doing arts ($\beta = 0.123$, $p < 0.01$) were significant positive predictors, whereas future outlook remained a significant negative predictor ($\beta = -0.097$, $p < 0.05$). Overall, the final model explained 53.1% of the variance in psychological distress ($R^2 = 0.531$, $p < 0.001$).

DISCUSSION

This study found high levels of psychological distress among CIPS at UPM, with mild-to-extremely severe symptom rates of 61.1% for depression, 67.1% for anxiety, and 56.2% for stress. These findings should be interpreted cautiously in relation to previous studies because directly comparable evidence on Chinese international postgraduate students in Malaysia remains limited. Studies using DASS-21 among Malaysian university students have also reported substantial levels of depression, anxiety, and stress, suggesting that psychological distress is a broader concern in Malaysian higher education settings.^{11,20} The findings suggest that psychological distress among CIPS deserves continued attention in the Malaysian higher education context. Available evidence from other host countries also suggests that the mental health burden of Chinese international students may vary across contexts.²¹⁻²² In the United States, a study of Chinese international students reported prevalence rates of 24.5% for depression and 20.7% for anxiety.²² In Singapore, a study of international students reported depressive and anxiety symptoms in 19.57% and 20.28% of participants, respectively, although the sample was not limited to Chinese students.²³ These figures should be treated as contextual reference points rather than direct cross-country prevalence comparisons. Cross-study differences may reflect methodological and contextual variation rather than actual prevalence differences. CIPS at UPM may face multiple challenges, including academic demands, cross-cultural adjustment, language difficulties, financial strain, and low willingness to seek help.^{3,8,10} In our sample, many students were self-funded or from middle-income families, nearly half reported limited English fluency, and awareness and use of counselling services were low. The high prevalence in this group may reflect not only cross-cultural adjustment difficulties, but also limited access to support.^{7,10} These findings suggest a need to improve mental health literacy and culturally sensitive help-seeking support.^{7,24-25}

Several sociodemographic factors were associated with psychological distress. Male students reported higher distress than females, although previous findings remain mixed.²⁶ Younger students also showed higher distress, consistent with earlier research on anxiety and adaptation difficulties in early adulthood.²⁷⁻²⁸ Divorced students reported the highest distress scores, which may reflect greater social and economic vulnerability.²⁹ Depression history was one of the strongest predictors, consistent with evidence that symptoms may re-emerge under stress.³⁰ Students from middle-income families also reported higher distress, possibly reflecting greater financial pressure.³¹ Language ability, self-rated health,

supervisor relationship, and awareness of counselling services also differed across groups. Older students reported stronger supervisor relationships, whereas younger students were more aware of counselling services.^{24,32} Students with a history of depression reported poorer health and weaker supervisor relationships.^{30,32} Scholarship students showed higher awareness of counselling services and stronger help-seeking intention, while high-income students reported better English communication.³³

Stressors also varied across demographic groups. Younger students reported greater perceived discrimination and more difficulty with new culture adaptation, whereas older students reported higher academic pressure, financial concerns, lower social support, and poorer health.^{6,34-35} Stress among CIPS may change over time, with adaptation difficulties appearing more prominent earlier and practical or resource-related pressures becoming more salient later.³⁴ PhD students showed higher academic pressure, and students with a history of depression, especially those with undiagnosed symptoms, reported higher levels of most stressors.³⁶ Middle-income students also showed higher stressor scores compared to students from a more affluent background.³⁷ These findings show that distress among CIPS is shaped not only by academic adjustment but also by broader social, financial, and health-related pressures.

Group differences in stress-relieving activities were mainly observed in online gaming, mindfulness meditation, doing arts, and online social networks.³⁸ Male and younger students reported more online gaming, whereas those aged 26–30 years reported higher mindfulness meditation.³⁸ Scholarship and middle-income students showed higher engagement in several stress-relieving activities, while physical exercise, cooking, or cleaning rooms, and social entertainment did not show significant group differences.³⁸ Several stressors were positively associated with psychological distress, and perceived discrimination remained the strongest predictor, suggesting that social evaluation and exclusion may be particularly important in cross-cultural settings.^{6,35} Financial concerns and poorer self-rated health also showed predictive effects, while future outlook showed a negative predictive effect.³⁷ Among stress-relieving activities, only artistic activities remained significant in the final model, suggesting that students with higher distress may have engaged more frequently in creative practices. We postulate that art-related activities may reflect reactive coping attempts among psychologically distressed students rather than protective behaviours. These findings suggest that distressed students may preferentially engage in creative activities for emotional self-regulation, although causal direction cannot be determined. These findings are broadly consistent with the acculturative stress framework and conservation of resources theory, suggesting that emotional distress among CIPS is shaped by discrimination, financial concerns, health-related pressures, and limited resources as observed in other similar international studies.³⁹⁻⁴⁰ Universities should improve the visibility and accessibility of counselling services and provide culturally responsive support for CIPS. Male students, particularly those with a history of depression, middle-income students, and PhD candidates, may require special attention.

This study adds quantitative evidence on psychological distress among CIPS in a South-South mobility context. Despite this, the cross-sectional design does not allow causal inference, and self-reported data may introduce recall bias and subjective judgment. Additional limitations of this study caused by a mixed-mode convenience sampling strategy may have introduced selection bias; students with wider peer networks or greater interest in mental health topics may have been more likely to participate, whereas socially isolated students may have been underrepresented. Therefore, the prevalence estimates and group comparisons should be interpreted cautiously. Finally, because this study was conducted at a single university using a non-probability sample, the generalisability of the findings may be limited. Future studies should include multiple universities and use longitudinal or mixed-method designs to clarify changes in psychological distress and stress-relieving activities over time.

CONCLUSION

This study identified substantial levels of depression, anxiety, and stress among Chinese international postgraduate students at Universiti Putra Malaysia, highlighting psychological distress as an important concern within the South-South international student mobility context. Perceived discrimination, financial concerns, poorer self-rated health, and previous depression history were significantly associated with higher psychological distress, suggesting that both acculturative and resource-related stressors play important roles in students' mental well-being. Although participation in artistic activities was positively associated with distress, the cross-sectional design does not allow conclusions regarding causality, and these activities may reflect reactive coping behaviours among distressed students rather than protective effects. The findings underscore the need for universities to strengthen culturally responsive mental health support, improve awareness and accessibility of counselling services, and develop interventions that address discrimination, financial strain, and cross-cultural adjustment difficulties among international postgraduate students.

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REFERENCES

1. UNESCO. Record number of higher education students highlights global need for recognition of qualifications. 2025 [cited Dec 2025]. Available from: <https://www.unesco.org/en/articles/record-number-higher-education-students-highlights-global-need-recognition-qualifications>
2. Fleck A. Chinese students are pivoting to Asian countries. Statista Daily Data. 2025 [cited Dec 2025]. Available from: <https://www.statista.com/chart/35133/number-of-inbound-international-students-from-china>
3. Xue W, Singh MKM. Unveiling the academic, sociocultural, and psychological adaptation challenges of Chinese international students in Malaysia: a systematic review. *J Int Stud* 2025; 15(2): 69-86.
4. Auerbach RP, Alonso J, Axinn WG, Cuijpers P, Ebert DD, Green JG, et al. Mental disorders among college students in the World Health Organization world mental health surveys. *Psychol Med* 2016; 46(14): 2955-70.
5. Mohamad NE, Mohd Sidik SM, Akhtari-Zavare M, Gani NA. The prevalence risk of anxiety and its associated factors among university students in Malaysia: a national cross-sectional study. *BMC Public Health* 2021; 21: 438.
6. Xie L, Xu Y. A systematic review on the factors affecting Chinese international students' mental health. *Int J Adv Couns* 2024; 46(2): 343-68.
7. Shek CHM, Chan SWC, Stubbs MA, Tong Lee RL. Promoting international students' mental health unmet needs: an integrative review. *Int J Ment Health Promot* 2024; 26(11): 905-24.
8. Zhai X, Razali AB. Uncovering challenges mainland Chinese international students face in English language communication in Malaysian higher education institutions. *Asian J Univ Educ* 2022; 18(4): 1130-41.
9. Zhao W. Exploring the influence of social media use motivations on acculturation orientations and psychological adaptation among Chinese students in Malaysia. *PLoS One* 2025; 20(5): e0323407.
10. Xu X, Tran LT, Xie X. Between decolonization and recolonization: investigating Chinese doctoral students in Malaysia as a case of global South-South student mobility. *High Educ* 2024; 87(5): 1193-209.
11. Wong SS, Wong CC, Ng KW, Bostanudin MF, Tan SF. Depression, anxiety, and stress among university students in Selangor, Malaysia during COVID-19 pandemics and their associated factors. *PLoS One* 2023; 18(1): e0280680.
12. Xu M, Jaffri HB, Yang X, Chor SL, Ma X. Psychological well-being in students: cultural adaptation and revision of the Ryff model. *Interacción y perspectiva: Revista de Trabajo Social* 2025; 15(3): 879-900.
13. Ahmed A, Mohamed M. Factors affecting the mental health of international students in Malaysia during COVID-19 pandemic: evidences from Universiti Utara Malaysia. *Int J Public Health Clin Sci* 2021; 8: 135-56.
14. Yusliza YM, Othman AK. An early study on perceived social support and psychological adjustment among international students: the case of a higher learning institution in Malaysia. *Int J Bus Soc* 2011; 12(2): 1-15.
15. Yakin HSM, Totu A. Managing acculturative stress and building an effective intercultural relation: a case study among international students at Universiti Malaysia Sabah. *J Adv Humanit Soc Sci* 2018; 4(6): 244-57.
16. Guo Y, Cheng C, Zeng Y, Li Y, Zhu M, Yang W, et al. Mental health disorders and associated risk factors in quarantined adults during the COVID-19 outbreak in China: cross-sectional study. *J Med Internet Res* 2020; 22(8): e20328.
17. Wang S, Matsuda E. The effects of stressful life events and negative emotions in relation to the quality of sleep: a comparison between Chinese and Japanese undergraduate students and Chinese international students. *Jpn Psychol Res* 2023; 65(2): 99-111.
18. Ying Z, Kondo A, Piao M. Mental health challenges among Chinese international students during COVID-19: a systematic review and meta-analysis of depression and anxiety. *J Int Stud* 2025; 15(8): 209-30.
19. Henry JD, Crawford JR. The short-form version of the Depression Anxiety Stress Scales (DASS-21): construct validity and normative data in a large non-clinical sample. *Br J Clin Psychol* 2005; 44(Pt 2): 227-39.
20. Ismail A, Kahwa KM. Prevalence, associated factors, and help seeking behavior related to psychological distress among international students at Universiti Kebangsaan Malaysia. *Malays J Public Health Med* 2020; 20(2): 215-23.

21. Magnusdottir E, Thornicroft G. Mental health of Chinese international students: narrative review of experiences in the UK. *NIHR Open Res* 2022; 2: 52.
22. Lin C, Tong Y, Bai Y, Zhao Z, Quan W, Liu Z, et al. Prevalence and correlates of depression and anxiety among Chinese international students in US colleges during the COVID-19 pandemic: a cross-sectional study. *PLoS One* 2022; 17(4): e0267081.
23. Zeng F, John WCM, Qiao D, Sun X. Association between psychological distress and mental help-seeking intentions in international students of National University of Singapore: a mediation analysis of mental health literacy. *BMC Public Health* 2023; 23: 2358.
24. Cao H, Lin W, Chen P. Counselling services and mental health for international Chinese college students in post-pandemic Thailand. *Educ Sci* 2022; 12(12): 866.
25. Koutra K, Pantelaiou V, Mavroeides G. Breaking barriers: unraveling the connection between mental health literacy, attitudes towards mental illness, and self-stigma of psychological help-seeking in university students. *Psychol Int* 2024; 6(2): 590-602.
26. Atherton K, Cornwall J. Psychological distress and help-seeking behaviour: Chinese international students in New Zealand. *JANZSSA* 2022; 30: 48-62.
27. Remes O, Brayne C, Lafortune L. The prevalence of anxiety disorders across the life course: a systematic review of reviews. *Lancet* 2014; 384: S66.
28. Arnett JJ. Emerging adulthood: a theory of development from the late teens through the twenties. *Am Psychol* 2000; 55(5): 469-80.
29. Grundström J, Konttinen H, Berg N, Kiviruusu O. Associations between relationship status and mental well-being in different life phases from young to middle adulthood. *SSM Popul Health* 2021; 14: 100774.
30. Adams KL, Saunders KE, Keown-Stoneman CDG, Duffy AC. Mental health trajectories in undergraduate students over the first year of university: a longitudinal cohort study. *BMJ Open* 2021; 11(12): e047393.
31. Li C, Ning G, Wang L, Chen F. More income, less depression? Revisiting the nonlinear and heterogeneous relationship between income and mental health. *Front Psychol* 2022; 13: 1016286.
32. Ma L, Yao H, Hou J. Exploring the relationship between supervisor support and anxiety of graduate students in China: the mediating role of scientific research efficacy. *Asia Pac Educ Res* 2024; 33(2): 321-9.
33. Sarwari AQ, Wahab MNA. Relationship between English language proficiency and intercultural communication competence among international students in a Malaysian public university. *Int J Lang Educ Appl Linguist [Internet]*. 2016 [cited Nov 2025]. Available from: <http://journal.ump.edu.my/ijleal/article/view/494>
34. Ahrari S, Krauss SE, Suandi T, Haslinda H, Sahimi NAHA, Olutokunbo AS, et al. A stranger in a strange land: experiences of adjustment among international postgraduate students in Malaysia. *Issues Educ Res* 2019; 29(3): 611-32.
35. Bi K, Yeoh D, Jiang Q, Wienk MNA, Chen S. Psychological distress and everyday discrimination among Chinese international students one year into COVID-19: a preregistered comparative study. *Anxiety Stress Coping* 2023; 36(6): 727-42.
36. Yang CY, Bai L. Psychological adjustment of Chinese PhD students: a narrative study. *Int J Dr Stud* 2020; 15: 595-614.
37. Wilson S, Hastings C, Morris A, Ramia G, Mitchell E. International students on the edge: the precarious impacts of financial stress. *J Sociol* 2023; 59(4): 952-74.
38. Rasheed A, Ahsan S, Zaheer S. Impact of Internet gaming disorder on self-appraisal among university students: moderating role of gender. *Pak J Psychol Res* 2021; 36(3): 451-71.
39. Berry JW. Immigration, acculturation, and adaptation. *Appl Psychol* 1997; 46(1): 5-34.
40. Hobfoll SE. Conservation of resources: a new attempt at conceptualizing stress. *Am Psychol* 1989; 44(3): 513-24.