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Cross-cultural challenges and health outcomes: An analysis of international students in higher education in China

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Abstract

This study used mixed methods to explore how cross-cultural challenges relate to health outcomes for international students at Chinese universities. This investigation leaned on Berry's Acculturation Model and utilized quantitative (N=150) and qualitative (semi structured interviews with N=20 students) methods with students in five universities in east China. The multiple regression analyses were used to determine what made the students' health worse; the findings only revealed language barriers (β=.311, p<.001), social integration difficulties (β=.288, p=.001) as the strongest predictors. Both of these together explained 42.7% of the factors (R^2=.427, F(5,144)=27.15, p<.001). Academic pressure (β=.195, p=.022) and cultural distance (β=.216, p=.016) also predicted health issues, while the length of stay in China (β=-.173, p=.013) had a protective effect. The correlation analyses produced significant correlations between language barriers and cultural distance (r=.48, p<.001), as well as between social integration difficulties and health outcomes (r=.47, p<.001). There were four themes from the qualitative: language barriers as the primary stressor, adjustment to academics, social isolation, and self-efficacy as a mediator of mental health outcomes. The findings reinforce the need for targeted institutional interventions with mandatory language support, peer mentorship programs, and mental health services that are culturally responsive to support international students' health and academic success in China. *(Afr J Reprod Health 2026; 30 [22]: 97-110).*

Keyword: Education, Health, cross-culture, Challenges, Health Outcomes China

Résumé

Cette étude a eu recours à des méthodes mixtes pour examiner le lien entre les défis interculturels et les indicateurs de santé chez les étudiants internationaux dans des universités chinoises. S'appuyant sur le modèle d'acculturation de Berry, la recherche a mobilisé des approches quantitative (N=150) et qualitative (entretiens semi-structurés auprès de 20 étudiants) au sein de cinq universités situées dans l'est de la Chine. Des analyses de régression multiple ont été effectuées pour identifier les facteurs contribuant à une dégradation de la santé des étudiants ; les résultats ont mis en évidence que les barrières linguistiques (β=0,311 ; p<0,001) et les difficultés d'intégration sociale (β=0,288 ; p=0,001) constituent les prédicteurs les plus significatifs. Ensemble, ces deux facteurs expliquent 42,7 % de la variance (R^2=0,427 ; F(5,144)=27,15 ; p<0,001). La pression académique (β=0,195 ; p=0,022) et la distance culturelle (β=0,216 ; p=0,016) apparaissent également comme des prédicteurs de problèmes de santé, tandis que la durée du séjour en Chine (β=-0,173 ; p=0,013) exerce un effet protecteur. Les analyses de corrélation ont révélé des liens significatifs entre les barrières linguistiques et la distance culturelle (r=0,48 ; p<0,001), ainsi qu'entre les difficultés d'intégration sociale et les indicateurs de santé (r=0,47 ; p<0,001). L'analyse qualitative a permis de dégager quatre thèmes principaux : les barrières linguistiques en tant que facteur de stress majeur, l'adaptation au contexte académique, l'isolement social, et le sentiment d'auto-efficacité en tant que médiateur des résultats en matière de santé mentale. Ces résultats soulignent la nécessité d'interventions institutionnelles ciblées — incluant un soutien linguistique obligatoire, des programmes de mentorat par les pairs et des services de santé mentale adaptés aux spécificités culturelles — afin de favoriser la santé et la réussite académique des étudiants internationaux en Chine. *(Afr J Reprod Health 2026; 30 [22]: 97-110).*

Mots-clés : Éducation, santé, interculturel, défis, résultats en matière de santé, Chine

Introduction

As higher education has gone global, more and more students from other countries are coming to China to study, and they are from diverse backgrounds and speak multiple languages.[1,2] While this demonstrates how China's academic reputation is improving, foreign students in China face cross-cultural hurdles that can seriously impact their mental and physical health and wellbeing: social isolation and intense academic pressure can cause anxiety, and being from a different culture prevents one from communicating effectively with locals; this lack of communication is worsened by language difficulties.[3,4] Research has shown that students from abroad are often faced with acculturative stress or the stress associated with adjusting to the host educational system, social norms and interpersonal relationships; for instance, language barriers and teaching style differences have caused anxiety symptoms and reduced academic achievement among Pakistani students and many other Asian international students studying in China; other factors like financial issues, educational institutions' competitive pressures and relative lack of social support often heighten stress levels resulting in many adverse psychological effects including sleep problems, symptoms of depression and low self-esteem.[5,6] Massive global systemic changes have taken place within the last few decades on the higher education landscape such as unprecedented international student mobility.[6] The globalization of education, coupled with the rapid development of a knowledge economy, has led to millions of individuals around the world seeking postsecondary/university level education abroad[7] Following closely behind the United States and the UK, China has emerged as one of the top foreign destinations for students.[7,8,9] This has positioned China among a fresh crop of educational hot spots that are altering the landscape for more traditional Western destinations. China's higher education institutions (HEIs) have increased efforts to foster a more welcoming climate for foreign students. These efforts are bolstered through initiatives like Belt and Road and the availability of substantial government funding. Within this context, almost 500,000 international students were enrolled in China as of 2018.[10,11] This intertwined nature of these cross-cultural challenges leads to the compounded effect that goes beyond issues surrounding social inclusion and academic performance; rather, it manifests as negative health outcomes such as heightened stress, anxiety and other forms of mental ill-being. In the existing literature, both stress levels of students and their academic performance in terms of putative identifiers such as language barriers and cultural adaptation are inversely related.[12,13] However, a comprehensive exploration of the multidimensional relationships between these cross-cultural challenges and the direct impacts on international students' health statuses remains a considerable gap with an abundance of academic literature recently emerged regarding international students in China. Knowledge of these relationships is key to designing strategies and interventions that are targeted at the promotion of academic success and the overall wellbeing of a student body that is becoming more and more diverse.[14,15,16]

The significance of this research pertains to its comprehensive examination of the nexus between health outcomes and cross-cultural issues experienced by international students during their studies in China.[17,18] Essentially, this paper aims to bring to the fore some of the key impediments that exist in their experience, their repercussions on health and how educational institutions and policy makers could arrive at workable solutions utilizing critical evaluation of recent mixed methods qualitative/quantitative research literature. Women in these issues are not only pivotal in advancing the attainment of more competent students but more critically, they are also instrumental in creating friendly learning environments conducive to total wellness.[19,20] This study contributes to the broader discourse on international education by emphasizing the necessity for more culturally responsive interventions and the establishment of a network that promotes proactive policies to mitigate the adverse effects of cultural change. Our analysis aims to inform a novel, more equitable and health conscious educational paradigm within China's academic domain. This study aims to fill this important gap by providing a comprehensive exploration of the cross-cultural challenges experienced by international students studying at Chinese institutions of higher education and their subsequent implications for health outcomes. This study will provide insight into the specific stressors caused by language and cultural barriers, academic adjustment, and social integration. The outcomes of the research are believed to procedure valuable proposals for relevant Chinese education providers, government

departments and psychiatrists so that they can establish more designed and culturally fitting assistance systems for international students and assist them to experience their life as a complete body positively through the overall course of action or improve their academic productivity.

Theoretical framework

Berry's acculturation model

The most appropriate and comprehensive theoretical framework to systematize the relationship between acculturative stress, self-efficacy, cultural distance and health outcomes for international students in China is Berry's Acculturation Model (Theory).[21,22] Berry's model describes acculturation as a multidimensional phenomenon reflecting the extent to which individuals retain their heritage culture while also engaging with the host society, resulting in four main strategies: integration, assimilation, separation, and marginalization. This framework neatly maps to the paper's findings that barriers related to language (capture challenges related to maintaining culture), social integration difficulties (represents participation in host society) and cultural distance (reflects perceived dissimilarity between cultures) together predicted poor health outcomes.[23] The model elucidates why students who experience difficulty balancing these dimensions especially those undergoing marginalization or separation report higher levels of stress, anxiety, and depression, for they would not meet the most integrated acculturation strategy that is correlated with psychological wellbeing. The way self-efficacy is integrated into Berry's model can be viewed through the framework of acculturative competence, in which students' confidence in their ability to navigate the cross-cultural demands moderates the relationship between acculturation difficulties and health (see Figure 1). The regression results from the paper show that the longer students stay in the host country, the better their health outcomes are ($\beta = -.173$, $p = .013$), which lends support to,[22] Berry's hypothesis that successful acculturation is a developmental process requiring time and resources for adaptation. Students with higher self-efficacy are more likely to employ the integration strategies advocated by Berry, where students actively seek social support from members of the host culture and 'become part of' the host society instead of retreating into separation or experiencing marginalization and disorientation,[22,24,25] This provides an explanation for the observed relatively strong and consistent positive correlations between language barriers, social integration difficulties, and poor health outcomes ($r = .51$ and $r = .47$, respectively). These variables can be seen as representing failures to achieve the goal of successful acculturation according to the definition provided by Berry. As such, it is appropriate to include a more integration focused approach to integrating this model from Berry; Universities in China adopt greater integrated strategies rather than assimilation or separation for students.[24] The institutional strategies pinpointed in the model such as culturally relevant counseling, peer mentoring programs and intensive language training may push students toward integration by attenuating perceived cultural distance and building self-efficacy for meaningful interaction with people from different backgrounds.[25,26] The theoretical foundation provided by the empirical results of this paper comes together to offer an testable framework in which health outcomes are enhanced when institutional support helps students retain valued aspects of their heritage culture while also enabling them to gain competence and connections within Chinese academic life, thus mediating acculturative stress through successful navigation along Berry's dimensions of acculturation. figure1

Scope of the study

This study welcomes students from undergraduate and graduate programs of different nationalities who are studying in China. It relates to their emotional resilience and belief in their capability of adapting to a different social and academic environment. Out of the information extracted from our survey, we go into more detail about one of them: how cross-cultural difficulties impair the academic performance and general wellbeing of international students in Chinese educational institutions. It explores how the social isolation, cultural distance, language barriers and obstacles to academic integration affect students' mental and physical health outcomes. Using grounded theory, as shown by autohrs, made an elaborate, detailed description of students' lived experiences, describing the process of academic adaptation through qualitative content analysis coupled with quantitative survey data.[27,28]

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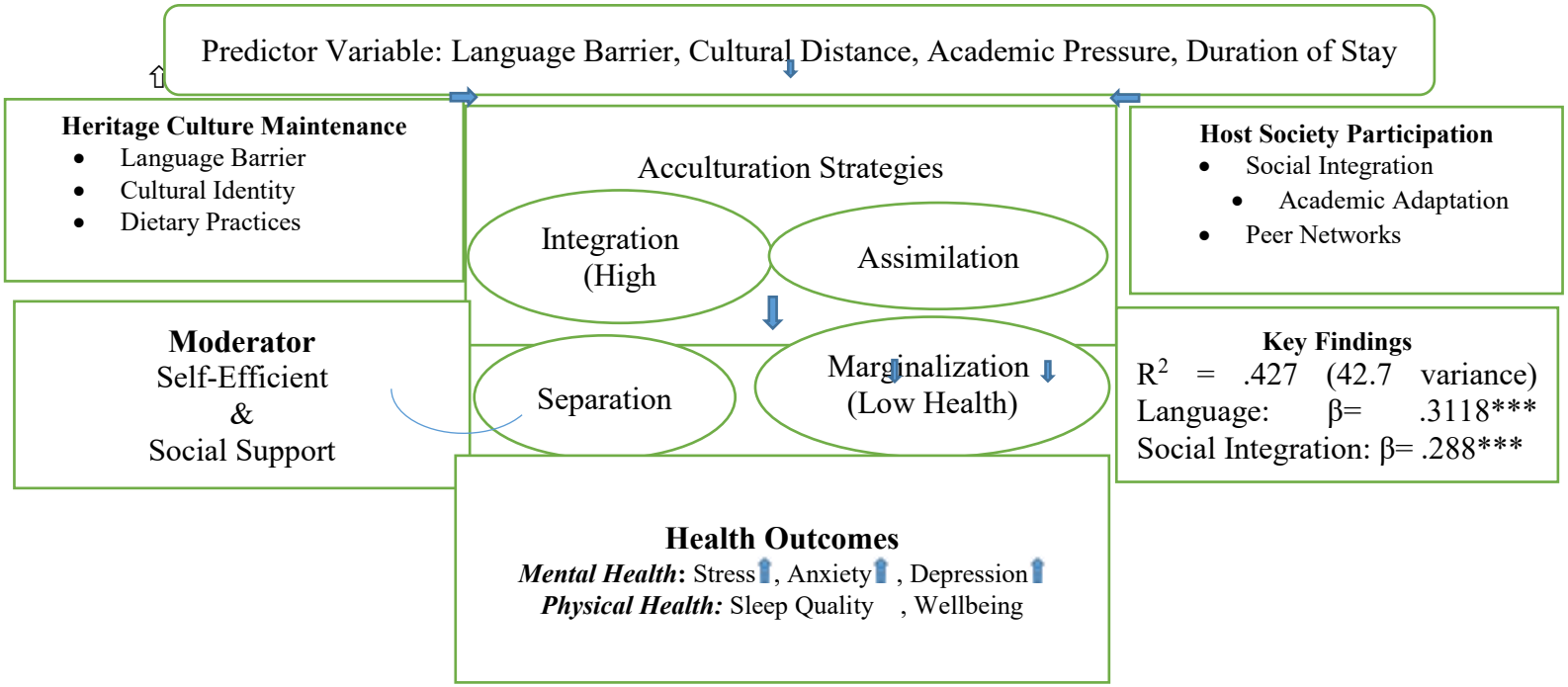

Figure 1: Berry's Acculturation Model

Significance of the study

In the context of the fast changing environment of higher education in China, this research provides new knowledge to the extant literature on the wellbeing of overseas students by being timely and relevant. While some have documented the impressive accomplishment China has achieved in educating international students and their integration into academia,[29] Altbach P.G,[30] Ma J, and Zhao K, these only constitute a small part of what is already known about the psychological / emotional and cultural challenges these students face outside of the classroom. By widening the scope of future research to include additional neglected concepts about the lives of international students at Chinese universities, this study fills an important knowledge gap about the overall international students have lived experience in China. It also enhances the research conducted by,[31] Gao H, and De Wit H which indicates that poor academic performance is in fact more often caused by unresolved language problems, cultural dissonance and inadequate social integration, than by lack of intellectual ability. It further demonstrates how important students' views of their competence and self-esteem are in impacting their academic performance and mental health. The findings from this research are highly relevant to university administrators, educators, and policy makers wishing to understand the stressors that international students experience and develop practical strategies for creating environments of support, inclusion, and mental health that contribute to retention, academic achievement and institutional reputation.

Objective of the study

Objective of the study was to look at the effects of being a foreign student in China, this study also examined a range of cross-cultural issues such as language barriers, challenges in the process of adjusting to educational environments and social integration that all affected their mental and physical health.

Methods

Research design and sampling strategy

The current study is a convergent mixed methods design, using qualitative semi structured interviews with quantitative questionnaire data. By employing this approach, the interactive schema patterns or tendencies and so called 'scholarly experiences' of international students from cultures external to China were revealed during this study into their cross cultural adjustment in Chinese academia. We used a convergent mixed methods design with quantitative questionnaires and qualitative semi structured interviews.

This method enabled the discover of correlational patterns as well as the lived realities of international students facing cross-cultural issues inside Chinese higher education institutions. Using purposive sampling with quotas to ensure demographic diversity across region of origin, gender and degree level (approximately 45.3% were from Africa, 28.7% from Asia,11.3% from Europe, and 14.7% from other regions), participants at both graduate and undergraduate levels maintained balance while securing a minimum of over 40 percent female representation(in the case that other degeneracies efforts should be made also focused on four different groups) from five universities in eastern China. Using G*Power software, a power analysis indicated that we required 138 participants to detect a medium effect size ($f^2 = 0.15$) with 80% power at $\alpha = 0.05$ for a multiple regression model containing five predictors and so we recruited N=150 to allow for missing data.

The qualitative sample of 20 participants was guided by established guidelines positing that 15–25 participants will generally be sufficient to achieve thematic saturation in phenomenological research of this depth, with recruitment continuing until theoretical saturation was reached defined as the point where three successive interviews resulted in no new themes or sub themes.

Quantitative measures

The current study employed various quantitative instruments, including the Acculturative Stress Scale for International Students (ASSIS), a 36-item tool evaluating perceived discrimination, homesickness, animosity, fear, and stress related to cultural transition. The participants answered the questions on a 5-point Likert scale where, a higher score indicated more stress (Cronbach's $\alpha = 0.87–0.94$). The participants' psychological distress was assessed through self-report using the Depression Anxiety Stress Scales-21 (DASS-21).

Health outcome composite

The composite outcome variable used to assess the health impact of psychosocial factors was called Health Outcome Score, and was created as a composite index from z-scores based on total DASS-21 score (quantifying depressive and anxiety symptoms), self-rated physical health (single item, 1–5 scale) and sleep quality (Pittsburgh Sleep Quality Index global score, reverse-coded). Items were z-standardized and equally weighted according to theoretical importance for overall wellbeing, resulting in a reliability coefficient of $\alpha = 0.84$ for the composite. English was the understandable language for international education setting and both ASSIS and DASS-21 were administered in English, so no translation was needed because all participants had sufficient proficiency in English to study at an academic level.

Qualitative rationale and approach

The qualitative component of the study was critical because cross-cultural adaptation is a multifaceted, context sensitive process that standardized measures would not be able to encompass and that allows probing into how students make sense of their experiences and express unmet needs. Semi structured video call interviews were carried out using an interview guide, which was developed through pilot testing and adapted for cultural sensitivity. Participants were initially identified and snowball sampling, with quotas generated from these early outputs driving recruitment in line with emergent analytic requirements. Theoretical saturation was assessed iteratively by memo writing and group discussions that spanned both a priori domains and emergent subdomains (given the ideal of flexibility in qualitative inquiry), with recruitment concluding when no new categories were noted to emerge between three consecutive interviews.

Data processing and analysis

We audio recorded and transcribed interviews verbatim with two trained research assistants using professional transcription software, validated by the first author; transcripts were de-identified via study identification numbers. Thematic analysis was undertaken using Braun and Clarke's six phase approach, in NVivo 12 All transcripts were analyzed independently by two coders, with discrepancies resolved via consensus discussion and third arbitration where required; inter coder reliability was high at Cohen's $\kappa = 0.82$. The coding team consisted of the first author and a doctoral student in cross-cultural psychology, who were both native speakers of English with ample exposure to international education contexts. Member checking with five of six participants was employed to confirm interpretation of themes, and an audit trail documenting analytic decisions was maintained throughout the analysis.

Ethical approval

The study purpose was shared with the participants and they consented to take part in the study voluntarily. Their participation was free and voluntary and their anonymity and confidentiality were protected at all times. Nonetheless, self-report bias in the questionnaires and interviews could have resulted to some extent in bias in the findings. Additionally, our findings may only hold for international students in China because participants were only recruited from select universities.

Results

The table 1, above shows information about the demographics of international students who are studying in China. The majority of participants were male, constituting 55.3% of the sample. The biggest group of people was students between the ages of 23 and 27, who made up 40.7% of the sample. Most of the students (45.3%) were from Africa, followed by Asia (28.7%), Europe (11.3%), the Middle East (5.3%), and Latin America (4.7%). A large number of these students (32%) had only been in China for less than a year, while 40.7% had been there for more than two years. Most students paid for their studies with university scholarships (36.7%) or their own money (32%). The students in the sample had different levels of Chinese language skills. Only 19.3% said their skills were good, while 44.7% said they were bad. In general, the profile of these students shows that they are a diverse group that is still getting used to living and learning in China, and many of them are still having trouble with money.

Regression analysis and correlation tables

The regression analysis below analyzes the influence of cultural difficulties on a Health Outcome Score by cross-culture international students studying in China.

Table 1: Demographic information

Variable	Category	Frequency (n)	Percentage (%)
Sex	Male	83	56.3%
	Female	67	43.7%
Age	18–22 years	35	23.3%
	23–27 years	61	40.7%
	28–32 years	41	27.3%
	Above 32 years	13	8.7%
Region of Origin	Asia	43	28.7%
	Africa	68	45.3%
	Europe	17	11.3%
	Middle East	8	5.3%
	Latin America	7	4.7%
	Other	7	4.7%
Length of Stay in China	Less than 1 year	48	32.0%
	1–2 years	41	27.3%
	More than 2 years	61	40.7%
Source of Funding	Scholarship	26	17.3%
	University Scholarship	55	36.7%
	Partial Scholarship (Living free)	21	14.0%
	Self-Finance	48	32.0%
Chinese Language Proficiency	Poor	67	44.7%
	Moderate	54	36.0%
	Good	29	19.3%

Table 2: Multivariate Linear Regression Analysis (N = 150)

Predictor Variable	B (Unstandardized Coeff.)	SE (Standard Error)	β (Standardized Coeff.)	95% CI (Lower, Upper)	t-value	p-value
Constant	45.323	3.213	–	–	14.11	< .001
Language Barrier	2.133	0.543	.311	[1.063, 3.203]	3.89	< .001
Social Integration Difficulty	1.768	0.489	.288	[0.796, 2.740]	3.61	.001
Academic Pressure	0.989	0.424	.195	[0.146, 1.832]	2.35	.022
Cultural Distance	1.206	0.495	.216	[0.229, 2.183]	2.47	.016
Duration of Stay in China	-0.856	0.334	-.173	[-1.512, -0.200]	-2.57	.013

R	R^2	Adjusted R^2	F (df = 5,144)	p-value
.655	.427	.413	27.15	< .001

B = Unstandardized coefficient, SE = Standard Error, β = Standardized coefficient (Beta), CI = Confidence Interval (95%). F = F-statistic, df = Degrees of freedom, p-value = Statistical significance.

Table 3: Correlation Matrix

Variables	Health Outcomes	Language Barrier	Social Integration	Academic Pressure	Cultural Distance	Duration of Stay
Health Outcomes	1.00					
Language Barrier	.51**	1.00				

Social Integration	.47**	.43**	1.00			
Academic Pressure	.38**	.27**	.34**	1.00		
Cultural Distance	.42**	.48**	.45**	.26**	1.00	
Duration of Stay	-.34**	-.31**	-.33**	-.18*	-.27**	1.00

N = 150 for all variables.
Two-tailed Pearson's r; p-values adjusted for multiple comparisons using the Bonferroni correction.
*Significant correlations: r values with "**" are significant at p < .001; "*" indicates significance at p < .05*

The dependent variable Health Outcome Score is a composite measure of physical health, stress, anxiety and depression, while independent variables are Language Barrier, Social Integration Difficulty, Cultural Distance General and Academic Pressure.

Here in Table 2, the regression model accounts for 42.7% of the variance in Health Outcome Score (R^2 = .427, Adjusted R^2 = .413), demonstrating a statistically significant overall model (F = 27.15, p < .001). The most important predictors are Language Barrier (B = 2.133, β = .311, p < .001) and Social Integration Difficulty (B = 1.768, β = .288, p = .001).

Both of these show that having more trouble in these areas is linked to worse health outcomes. Language Barrier has the most impact, which means that problems with communication are a big part of the health problems that students have. Social Integration Difficulty significantly affects health, suggesting that the failure to form social connections intensifies stress and anxiety.

Academic pressure

(B = 0.989, β = .195, p = .022) and Cultural Distance (B = 1.206, β = .216, p = .016) significantly impact health, as both factors lead to heightened stress and diminished wellbeing. Duration of Stay in China (B = -0.856, β = -.173, p = .013) is negatively correlated with health outcomes. This suggests that students who have resided in China for an extended period tend to exhibit improved health outcomes, likely attributable to enhanced cultural adaptation.

Model diagnostics indicated that multicollinearity was not an issue, as all Variance Inflation Factors (VIFs) were below the threshold of 10. Residual analysis showed that there were no problems with the assumptions of regression. The residuals were normal, and there were no influential points found.

Standardized betas and confidence intervals

The standardized coefficients (β) show how strong each predictor's effect is on health outcomes compared to the others. The 95% confidence intervals for each coefficient were computed, affirming the reliability of the results, as there are no overlapping intervals indicating weak effects.

The correlation matrix Table 3, provides additional insights into the relationships between the predictors and health outcomes. Language Barrier (r = .51), Social Integration Difficulty (r = .47), Academic Pressure (r = .38), and Cultural Distance (r = .42) all have positive correlations with health outcomes, indicating that as students experience more difficulties in these areas, their health worsens. Duration of Stay (r = -0.34) shows a negative correlation with health outcomes, suggesting that longer stays in China are associated with better health, likely due to increased adaptation and fewer cultural challenges.

The correlation between the predictors themselves shows that Language Barrier is strongly related to Cultural Distance (r = .48) and Social Integration Difficulty (r = .43), reinforcing the idea that students who struggle with language also face difficulties in social integration and experience a greater sense of cultural remoteness.

Furthermore according to the results of regression, the study determined that Language Barriers and Social Integration Difficulties were the most prevalent domains that impacted on the health of international students in China. That is, as the study indicates, students with more significant challenges in language and social contact were reported to have poorer physical and mental health. The Duration of Stay in China had a negative association with health outcomes, indicating that the longer students stay in China, the more they adapt, and thus, they tend to have fewer health problems.

Overall, the results call for the provision of targeted interventions to enable international students to deal with cultural differences and, potentially, improve their wellbeing.

Qualitative analysis

This research used thematic analysis and grounded theory to find four major factors that influence international students' health and cross-cultural adjustment in China. They cover academic adaptation, social integration, self-efficacy and mental health and language barriers.

Language barriers as a primary stressor

A prominent topic in all the sources were language barriers. And foreign students in China often find themselves with an uphill battle to climbing for understanding what they're learning in class, writing academically or simply having a discussion during class since their Mandarin isn't proficient enough. Said one student (P7), "I can't follow the class discussions properly. I don't get some of the important points during lectures, even if I work quite hard." This is in line with,[32] Li X (2015) that found foreign students struggle to understand lectures and feel anxious when presenting material in a second language. Moreover[33] Ding X (2016) also noticed that language barriers have a negative effect on course learning and the general learning experience, also stated that classroom communication problems are another issue. One participant (P14) explained, "Writing Chinese is so difficulty, even the base academic words I can't find the right term. Some students also described challenges during presentations, as one (P20) stated "I can't even express my ideas clearly at any presentation. My nerves get the best of me.' Interestingly, several students reported less anxiety around language barriers. For example, P3 said: "My Chinese is far from being perfect, but I am fine asking questions and using some online tools. It works for me." But such positive cases were rare and typically involved a familiarity with the Chinese language or study abroad experience.[34,35]

Academic adjustment and institutional challenges

Since pedagogies, curricular configurations, and assessment methods are generally quite different in China from other countries where most of these students were originally educated, students raised issues with adjustment. As one participant (P11) said "It is too fast paced. There's a lot to do, and I am supposed to manage it all on my own." In China, higher education moves quickly, is highly structured, and has a very limited cultural orientation, all of which add to academic stress and poor performance,[36] Studies also revealed students responding by feeling 'lost,' confused which reiterates what[37]Su X (2017) action research is warned about, which is the academic mismatch, when students from an international background enter an environment with little experience of autonomous or research based learning. The way exams are arranged here is quite different back home, a student (P16) recollected. I didn't know how to prepare; I failed my first test. Students also commented on vague expectations, as one (P9) reported "I don't even understand what the professors expect from us. It is confusing and frustrating." Some students were still inspired by this obstacle, however, P6 said: "I love the challenge. It feels like it's making me grow." While these were some bright spots, they were just anecdotes, in fact most students reported feeling inundated and unsure of their academic futures[38]

Social integration and isolation

The two recurring problems identified were social disconnection and a lack of cross-cultural engagement. In classroom and dormitory contexts, collectivist culture students indicated they had been overlooked or did not make themselves understood. "I sit alone during lunch," shared one participant (P12). No one seems to talk to me. I just spend most of my time in my room." Cultural remoteness, dietary differences and a lack of involvement in extracurricular activities compounded social isolation and dislocation. These findings support 39Sumra K B (2012) who stated that cultural dissonance and not being accepted in the community affects international students' self-esteem and academic achievement. Many kids stayed behind due to institutional neglect or cultural differences, social connection and extracurricular involvement are vital parts of effective self-regulation.[41,42] A student (P8) said, "I don't feel I belong here. I joined a club, but nobody talks to me." Another (P17) said, "It's hard to make friends. They don't know my food, they don't know my culture etc, I feel like an

Table 4: Themes and their descriptions

THEME	DESCRIPTION
Barriers to Language	Increases psychological stress and affects educational engagement
Adaptation in the Classroom	Incongruence in expectations learned leads to confusion and performance discrepancies.
Integration in Society	Cultural isolation and distance create weak social support and sense of belonging.
Health and Self-Efficaciousness	Low self-esteem raises anxiety and emotional stress, making us less resilient.

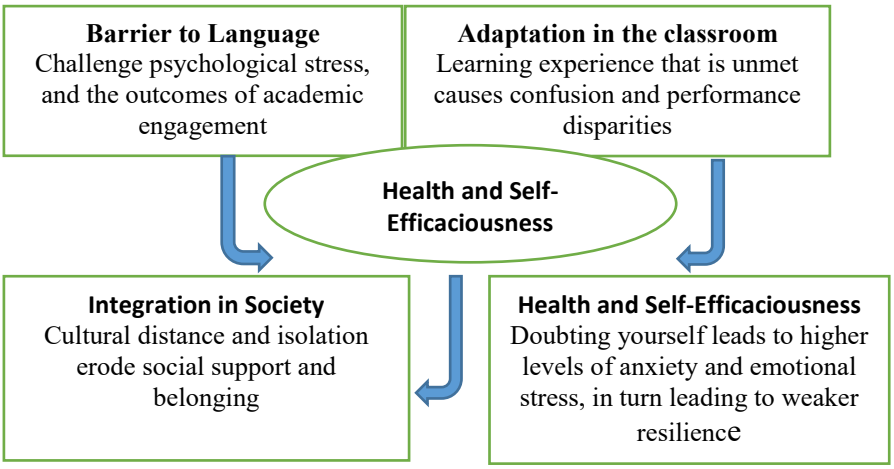

Figure 2: Health and self-efficaciousness

outsider." But a few students had more positive social experiences. For example, one student, P4 shared that "Joining the basketball team helped me find some friends. Now I feel less isolated." However, these rare positive experiences reported were in the minority among interviews with students who continued to feel alienated from both their local and international communities.

Self-efficacy and mental health

Qualitative interviews also underscored the importance of self-efficacy in coping with cross-cultural stress. One student (P13) stated, "I am always stressed. "I can't keep up with my studies and feel like no one cares about how I'm doing." Students who had lived abroad before, and those demonstrating confidence in their ability to adapt with stronger coping mechanisms reported less anxiety. As one participant (P5) put it, "I have worked in overseas before, so I'm more used to face new environments. But it's still tough, more so without proper support." In contrast, poor physical health and depressive symptoms were strongly related to low self-esteem that was amplified by academic failure or language dissatisfaction. An echo of [43]Qian J and Yu J (2023) on the connection with academic achievement, emotional resiliency and self-efficacy. "Incredibly defeated," said another participant (P15). My academic performance is suffering, and it's hurting my mental health.' Psychological stress was compounded by a lack of culturally competent mental health resources at universities particularly for first year students experiencing simultaneous academic and cultural transitions. This was echoed by many students, one of whom (P13) observed, "I don't know where to turn for help. The counseling services don't seem to know what I'm going through." While there were some positive coping strategies identified, the overall trend indicated significant psychological distress among students whose mental health needs far exceed current institutional support[44,45] Figure 2 and Table 4.

Discussion

Cross-cultural challenges and their effects on the health of international students in Chinese higher education settings are examined, revealing a complex and multifaceted context.

China is definitely a rising star and is quickly becoming one of the best places for international students to study. By 2018, there were almost half a million international students in China.[5,11,46] However, it is clear that these students often face major problems when they move to another country for school, work, or life. Many of these problems go beyond schoolwork and have negative effects on their mental and physical health. The main issues that people often bring up are big gaps in culture and education, a lot of trouble with language, and low levels of social integration.[47] All of these things help explain why international students feel more stressed, anxious, and mentally uncomfortable than other students. Because of this discomfort, academic success is negatively correlated with it, meaning that how well someone does in a foreign setting is closely linked to how well they feel.[48]

In addition to academic and language problems, overseas students face even more problems because of social, cultural, and institutional factors. Some first year students may (β = −. 173, p =. 013) supports[21] Berry JW (2005) growth model of acculturation as a temporal adjustment decreasing health risks through cumulative cultural learning. Importantly, there was a negative relationship between the language barrier and culture distance,[52] (r =. 48, p <. Paterson GA (2018, p. 001) confirmed previous qualitative findings by,[53] Ding X (2016) that linguistic and cultural isolation is discussed to be compounding. The effect size for academic pressure was moderate,[54](β =. 195, p =. Sheng L (2022), similar trends among international students in China's higher education institutions.[41,42]

[22,]Berry's (2005) acculturation characterization indicates that cross-cultural challenges affect health mediated by self-efficacy. Language barriers are regarded as the greatest source of stress, limiting students from fulfilling academic requirements and social interactions and undermining their confidence in cross-cultural tasks.[55] This drop in self-efficacy is associated with a decrease in active coping, which makes students feel lost and be put on academic probation because they have more freedom from adult supervision and find it hard to make healthy daily routines.[49] The tendency to separate international students from domestic students on campus, along with the fact that Mandarin speakers may gather with their local counterparts, can create feelings of loneliness and a sense of not belonging, which makes it harder to practice English. Money is another big source of stress, especially for people who are trying to pay for both living and school.[17,21,50]

The regression analysis yielded strong empirical support for the postulated relationships between cross-cultural stress and health outcomes. One of the strongest predictors for adverse health outcome was language barriers (β =. 311, p <. 001) and social integration difficulties (β =. 288, p =. 0001), accounting for a combined explanation of 42.7% in the variance of health outcomes (R^2 =. 427, F(5,144) = 27.15, p <. 001). The results are consistent with,[36] Hussain M and Shen H (2019), who considered Mandarin proficiency to be one of the significant predictors for psychological distress among international students in China, however, our standardized coefficient is higher than effect sizes reported previously among international student populations living in Asia.[51] The negative association of duration of stay with health outcomes more susceptible to stress and, subsequently more likely to experience negative impacts on psychological well-being as shown by DASS-21 scores, sleep quality and self-rated health.[56,57] Qualitative data indicate that lower Chinese proficiency (P7, P14, P20) leads to less academic self-confidence and more anxiety, while those with international experience (P5) report greater efficacy and health outcomes[35,55] This is further intensifying social integration difficulties resulting in victims being deprived of peer support, fostering isolation and limiting engagement consistent with,[58] Raja R, Zhou W and Li XY (2021) from the perspective of integration strategies for wellbeing in China.

Conclusion

The current study reveals that such cross-culturally linked challenges deteriorate the health outcomes of international students in Chinese higher institutions, as evidenced by language barriers (β =. 311, p <. 001) and difficulties with social integration (β =. 288, p =. 001) were the primary predictors of psychological

distress and poor physical health. Key findings also have direct relevance for evidence based advice to institutions, namely: universities should institute mandatory use policies for language centers, ensuring first year students receive systematic support in Mandarin; they should implement guided peer mentorship matching systems pair these students with culturally attuned mentors to ease the development of social networks; and deploy early screening (chiefly ASSIS and DASS-21) at orientation and mid semester points to identify those at risk. Finally, stepped care pathways linking screening findings to parallel levels of care from self-help resources for low level symptoms to professional counselling services for high levels of distress would mitigate the self-efficacy degradation mechanism predicted by our analysis. Embedding these structural supports within a culturally responsive framework allows Chinese higher education institutions to transform internationalization from an effort for enrollment expansion into authentic engagement toward the flourishing of students, and enhances both academic performance and holistic wellbeing.

Contribution of authors

AZ: Conceptualization; investigation; methodology; validation; visualization; writing original draft; **HY:** writing review and editing; formal analysis; **LG:** Conceptualization; investigation; validation; data curation; **SF:** Investigation, methodology; validation; writing review, editing, and formal analysis.

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Data availability statement

The authors declare that the data supporting the findings of this study are available from the corresponding author upon reasonable request. The data are not publicly available due to ethical and confidentiality considerations.

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