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## **Do Healthcare Challenges Influence Patient Satisfaction in Foreign Countries? Evidence from International Students in China**

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**ABSTRACT:** *This study investigated healthcare challenges faced by international students in China and their impact on satisfaction levels. A mixed-methods approach, including interviews, was used to identify barriers such as language difficulties, limited insurance, mental health issues, and healthcare utilization patterns. Guided by Andersen's behavioral model and Berry's acculturation theory, the findings reveal that inadequate health insurance significantly limits access and satisfaction, whereas language and mental health challenges worsen the situation. Statistical analyses, including multiple regression and structural equation modeling, confirmed that accessibility is positively correlated with patient satisfaction. This study highlights the need for early identification and intervention by universities and healthcare providers through expanded insurance, culturally appropriate mental healthcare, and improved communication. By addressing these barriers, this research enhances the understanding of international students' healthcare experiences and provides policy recommendations to promote a more supportive healthcare environment for this population in China.*

**Keywords:** healthcare access, international students, language barriers, mental health, patient satisfaction

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## INTRODUCTION

The internationalization of education has led to increased mobility among students traveling abroad for education, and China has been among the most popular destinations. According to the Ministry of Education's Statistical Report on International Students in China for 2018, the number of international students in China was 492,185 from 196 countries and regions, studying in higher education institutions. Most of them were Asian (59.95%), African (16.57%), and European (14.96%) students, as were American (7.26%) and Oceania (1.27%) students. This variety of students highlights the international attractiveness of Chinese educational opportunities and the diversity of international students (Hasan et al., 2017; Alkhatib et al., 2023).

The healthcare system in China is created predominantly to provide citizens with the help of the basic medical insurance scheme rather than to international students. As a result, international students must, in most cases, have personal healthcare coverage, which is typically provided as part of a school policy (Hasan et al., 2017; Jang & Yi, 2024). Although this insurance is essential, its coverage is usually limited. It may not cover more specialized care or psychological services, which exposes students to dangers when they might need them.

Language and cultural diversity present significant obstacles to international students seeking healthcare because most of the care is available in Mandarin, and the cultural orientation of medicine might not correspond to it in their native nation. Research has also indicated that students' satisfaction with and academic performance in foreign educational institutions are directly linked to access to healthcare (Zhou et al., 2021; Alasmari, 2023). The most frequently cited difficulties are also language-related, as non-Chinese speakers often experience communication issues with healthcare professionals (Wu et al., 2023; Zhou et al., 2021). International students face additional challenges with the healthcare process because they often struggle to comprehend medical terms or interpret the indirect language used by healthcare providers.

Furthermore, different cultural practices are also important for healthcare access. International medical students might not be acquainted with traditional medical practices in China (acupuncture and herbal therapies), which are widely practiced alongside Western medicine. This may promote the unwillingness to contact treatment, particularly in cases where students are uncomfortable with the practices provided by medical institutions (Yu et al., 2023). Moreover, mental health stigma in China leaves most students without the ability to seek mental health care since it is not sufficiently discussed in Chinese society, as it is in other nearby Western countries (Jiang et al., 2020).

Issues of gender and privacy can also discourage students from seeking care, especially where cultural norms regarding gender and modesty are not satisfied within the health care facility. Finally, the top-down regimes within the Chinese healthcare system may cause conflict with more patient-centered systems typical of many Western nations and leave students feeling powerless or uninvolved in their healthcare process. These barriers reflect the peculiarities of the issues

inherent in providing healthcare to international students in China, indicating the necessity of specific policy solutions to fill the existing gaps.

Despite these difficulties, little documentation has been published regarding the mutual overlap of these factors with respect to the healthcare satisfaction of international students. This research aims to fill this gap by investigating how language barriers, mental health needs, insurance coverage, and healthcare utilization affect the overall satisfaction of the healthcare system among international students in China. The study also seeks to provide policy-related suggestions to address these issues and improve the quality of healthcare for this increasing number of students by providing an in-depth account of these factors (Levesque et al., 2021).

## **Hypotheses**

The following hypotheses were proposed:

- H<sub>1</sub>: International students with comprehensive health insurance policies tend to have higher patient satisfaction ratings.
- H<sub>2</sub>: Students who are less exposed to language barriers are more likely to provide a higher patient satisfaction score.
- H<sub>3</sub>: International students with a greater number of mental health-related issues are likely to report relatively lower patient satisfaction.
- H<sub>4</sub>: Frequent healthcare utilization is correlated with increased patient satisfaction.

## **Research Questions**

This research aims to answer the following research questions:

- What is the impact of language barriers on healthcare satisfaction among international students in China?
- How do mental health needs and related services affect the satisfaction of international students with healthcare in China?
- How does health insurance coverage influence international students' access to and satisfaction with healthcare services in China?
- How does the utilization of healthcare services affect international students' overall satisfaction with healthcare in China?
- What changes in healthcare systems and policies in China are necessary to minimize the barriers faced by international students and improve their access to healthcare?

## **Related Research and Research Motivations**

Research investigations have identified the healthcare obstacles that international students experience, particularly in Chinese educational

institutions. According to Hasan et al. (2017), students avoid seeking prompt medical care due to limited health insurance coverage and insufficient knowledge about local healthcare services. A study by Alasmari (2023) confirmed that language communication issues lead international students to experience heightened stress and diminished satisfaction with healthcare delivery. Interdisciplinary research by Yu et al. (2023) and Wu et al. (2023) examined the mental health conditions of international students that develop due to cultural shock, loneliness, and inadequate mental health facilities.

Research has established a growing body of knowledge, yet gaps persist in comprehending how diverse healthcare challenges affect patient satisfaction. Previous research investigated individual healthcare challenges without considering the overall impact of these challenges on patient satisfaction. Research explaining how Chinese healthcare institutions should adapt their services to meet the diverse needs of international students is lacking. This research addresses the need for a comprehensive assessment of healthcare accessibility and international students' satisfaction in China. This study reveals essential obstacles and their effects in guiding policymakers, healthcare providers, and educational institutions in developing specialized interventions that boost healthcare experiences for international students.

## LITERATURE REVIEW

Healthcare and patient satisfaction are two important factors that play crucial roles in the lives of international students when they pursue studies abroad. Students who attend foreign schools face numerous challenges that limit their access to appropriate medical care. These factors include communication barriers, health insurance access, mental problems, and health system unfamiliarity, which affect how international students perceive healthcare facilities and their ability to receive proper medical attention at the right time. The literature review summarizes the existing academic literature and discusses the effects these issues cause for students during their integration and health prospects.

**Language barriers and healthcare access** Language barriers have already been established as significant barriers to accessing healthcare among international students (Hasan et al., 2017; Wu et al., 2023). Patients with low levels of Mandarin proficiency struggle to report their symptoms, interpret healthcare information, and even navigate health institutions. Although not all hospitals offer translation services, not all clinics can receive them, especially in distant places or small clinics (Levesque et al., 2021). This lack of language support leads to misdiagnosis, delayed treatment, and dissatisfaction with healthcare services (Zhou et al., 2021).

Nevertheless, study findings and other intelligence findings indicate that language barriers in isolation do not explain all the difficulties international students may encounter in healthcare facilities. A study by Alasmari (2023) showed that fewer international students majorly in English-speaking countries

than international students in non-English-speaking countries do, which means that the provision of care is also demographically defined.

**Mental health and cultural adaptation** The past few years have seen a heightened level of attention toward mental health issues among international students, compounded by the stress of acculturation and cultural adaptation. Yu et al. (2023) and Wu et al. (2021) prioritized the increased likelihood of anxiety, depression, and stress in international students in China, which intensified cultural shock, social isolation, and academic pressure. However, even as more international students realize these challenges, most do not seek mental care because of cultural taboos concerning mental health in China (Jiang et al., 2020).

When this cultural barrier is supported by a lower availability of culturally competent mental health services, there is a likelihood of unmet needs. For example, Chen et al. (2020) reported that international students with Western backgrounds might be more willing to receive mental health care. In contrast, a student with a collectivist background might be afraid to do so upon being stigmatized in society because of being mentally ill. Therefore, the role of the cultural perceptions of mental health that influence international students in seeking healthcare services is unexplored.

**Health Insurance Coverage and Healthcare Utilization.** The role of health insurance in healthcare access and utilization has been well documented. Jang and Yi (2024) and Hasan et al. (2017) reported that international students with comprehensive health insurance are more likely to seek medical care and report higher satisfaction with the services provided. However, Alkhatib et al. (2023) reported that many international students purchase only basic health insurance through their universities, which often provides limited coverage, particularly for specialized care and mental health services.

In addition, the complexity of China's healthcare system, coupled with insufficient insurance coverage, leads to low healthcare utilization, especially in the early stages of students' stay in the country (Zhou et al., 2021). Students with inadequate insurance coverage often delay seeking care or self-medicating, worsening their health conditions over time.

**Cultural and** systemic factors further complicate the healthcare experience for international students. Levesque et al. (2021) highlighted that Chinese healthcare providers, who may not be culturally competent or familiar with international students' specific needs, are less able to deliver effective care. Additionally, the hierarchical nature of the healthcare system in China, where doctors hold significant authority over patient decisions, contrasts with more patient-centered approaches in Western countries, potentially causing frustration among international students who are accustomed to a more collaborative model of care (Wu et al., 2023).

While studies have identified these various barriers to healthcare access, there is a lack of integrated models that combine the effects of language barriers,

mental health needs, insurance coverage, and cultural differences in shaping overall healthcare satisfaction. This gap presents an opportunity to develop a more holistic understanding of the factors that influence healthcare access and satisfaction among international students in China.

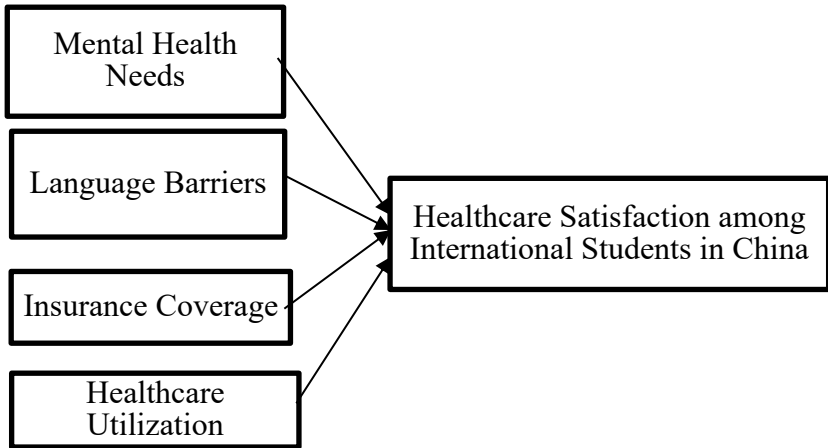
**Theoretical Framework for Understanding Barriers to Healthcare Access.**

This study aims to establish the factors affecting access to and satisfaction with healthcare services among international students in China, based on Andersen's behavioral model of healthcare access, Berry's theory of acculturation, and Levesque's model of access and knowledge. The Andersen model again categorizes the factors into predisposing factors (cultural attitudes), enabling factors (insurance status and ease of language), and need factors (mental health) in a very organizational structure that effectively elicits and dissects these factors and their impacts on health care access and satisfaction in a logical fashion (Andersen, 1995; Andersen & Davidson, 2007). Berry's theory of acculturation is a cultural framework that illustrates how stress originating in the acculturation process can influence a given person's use of healthcare services (Berry, 2005). Structural aspects, including language and insurance, play an important role in Levesque's model, consequently altering the acceptability of services (Levesque et al., 2013). Altogether, these are the theories on which hypotheses about the relationships between the study's variables and patient satisfaction are built.

**Identified gaps and implications for research.** The studies reviewed show that a significant amount of research has focused on individual barriers to healthcare access. However, few studies integrate these barriers into a comprehensive framework that accounts for their interrelations. The Andersen behavioral model of healthcare access, Berry's theory of acculturation, and Levesque's model of access each provide valuable insights into healthcare utilization. However, these models have typically been applied in isolation.

This study aims to synthesize these theoretical frameworks by integrating them into one comprehensive model. Doing so will better capture the multifaceted nature of healthcare access for international students and allow for a more nuanced understanding of how factors such as language, mental health, insurance, and culture interact to influence healthcare satisfaction.

**Hypothesis development.** The theoretical framework for this study is Andersen's behavioral model of healthcare access and utilization, which divides factors influencing healthcare access and its satisfaction into predisposing factors, enabling factors, and need factors. This model forms the basis for testing hypotheses concerning the associations between the independent variables (insurance, language, mental health, and health care utilization of international students) and the dependent variable (patient satisfaction) in the Chinese context.



**Figure 1: Conceptual Framework**

On the basis of the literature review and theoretical framework, the following hypotheses are developed:

**Health Insurance Coverage and Its Impact on Satisfaction.** Health insurance is helpful in increasing access to healthcare because it is an enabling factor in Andersen's behavioral model of healthcare access. Inadequate health insurance coverage may prevent students from seeking medical help when needed. Thus, adequate health insurance relieves this situation by reducing out-of-pocket expenses. However, research reveals that the insurance coverage that these international students have should be sufficient and restrictive in terms of access to routine services due to the high-cost implications of healthcare (Zhang & Liao, 2021; Levesque et al., 2013). A lack of appropriate insurance coverage exposes students to deferred or skipped services they cannot afford. These factors result in students encountering higher charges or minimal financial compensation for their health needs. Filling these insurance coverage gaps is crucial for enhancing accessibility and satisfaction with healthcare among international students.

**H1: Health Insurance coverage and patient satisfaction**

Hypothesis: International students with comprehensive health insurance policies tend to have higher patient satisfaction ratings.

**Justification:** H1 has a positive direction. The Andersen model explains that insurance provides people with access to health services, providing financial and time factors that ensure that participants receive appropriate access to healthcare. Other research has indicated that health insurance directly influences

patients' satisfaction levels since it helps reduce the costs of treatments. For example, Levesque et al. (2013), working with adequately insured patients, noted that people receiving sufficient health insurance benefits were more satisfied with their healthcare services because low-cost barriers delay access to health care. Zhang & Liao's (2021) study revealed that international students with adequate insurance coverage in China also receive healthcare and are happier.

### **Language barriers and healthcare utilization**

Language is one of the key indicators that explains healthcare utilization rates and quality. Patients with language difficulties struggle to communicate with caregivers; hence, they may be misdiagnosed or even skip treatment. Hasan et al. (2017) and Alasmari (2023) concluded that international students are likely to delay seeking treatment or fail to consult due to language barriers, which make them dissatisfied with the services obtained. In China, the language barrier has become a significant problem for international students because consultations are conducted in the local language. This state hinders international students from fully comprehending their illnesses and treatment regimens; hence, the quality of care and patient outcomes are affected. Levesque studies access healthcare, and by analyzing these barriers, it is clear that for international students, language is a barrier, which also decreases the approachability and acceptability of services, thus requiring improvements in language support systems.

### **H2: Language barriers and patient satisfaction**

Hypothesis: Students who are less exposed to language barriers are more likely to provide a higher patient satisfaction score.

**Justification:** This hypothesis has a negative effect. The Andersen model assumes that language proficiency serves as an enabler of healthcare services' accessibility and acceptability. Language barriers make it difficult for patients and providers to communicate, and patients often fail to understand what providers are saying, leading to misdiagnosis and dissatisfaction. Hasan et al. (2017) reported that international students experiencing substantial language difficulties reported less satisfaction with communication problems during medical consultations. Alasmari (2023) further reported that language barriers in health care centers also adversely affect patients' experience because students cannot express their symptoms correctly. These results corroborate the notion that with improved language accessibility, satisfaction can be improved by better communication and understanding.

### **Mental health needs and cultural adaptation**

The discussion of students' mental health has recently attracted increased interest while studying global students' challenges, especially as they adapt to the cultural shift. Acculturative stress, which may overlap with loneliness, cultural transition, and homesickness, is a significant factor among international

students and can cause mental health needs, including anxiety and depression (Yu et al., 2023; Wu et al., 2023). The situation in China is even worse because there is a cultural taboo surrounding mental health care, so students may not seek help. According to Berry's theory of acculturation, adaptation affects mental health, and the four acculturation strategies of integration, assimilation, separation, and marginalization come into play in terms of the students' experience. Frequent acculturative stress may limit their accommodation of mental health care services. They may have lower levels of satisfaction with health care in the country in which they are studying. These challenges call for culturally sensitive interventions to improve mental health assistance for international students.

### **H3: Mental health and patient satisfaction**

Hypothesis: International students with a greater number of mental health-related issues are likely to report relatively lower patient satisfaction.

**Justification:** H3 has a negative direction. The Andersen model views mental health as 'need-based' factors that affect healthcare-seeking behavior. Dissatisfaction with the healthcare experience can be a consequence of unmet mental health needs. According to findings by Wu et al. (2023), international students who experience mental health issues such as anxiety and depression are less satisfied with healthcare services because their particular needs are not well met. Chen et al. (2020) noted that culture has a stigma toward mental health and that the resulting poor satisfaction is worsened by the fact that students are not assisted in terms of their mental health. These studies show that improving patient satisfaction involves providing culturally competent care that addresses patients' mental health needs.

### **Patterns of healthcare utilization**

Healthcare utilization refers to the patterns and types of healthcare that people receive. International students' utilization of health services is determined by factors such as their understanding of the healthcare system, language, and insurance status (Hasan et al., 2017; Jang & Yi, 2024). Several studies have revealed that international students seldom seek medical attention. When they do so, they do so in limited ways because they need a proper understanding of the operations of the healthcare system, or they feel that receiving an appointment is a problem (Zhou et al., 2020). Such underutilization can lead to long-term untreated health complications, increased conditions, and reduced patient satisfaction. There are predisposing factors, such as cultural characteristics, enabling factors, insurance, and factors based on specific needs and mental health, all of which influence the likelihood of students seeking medical help. Knowing such factors can assist in enhancing healthcare service delivery to international students.

**H4: Health utilization and satisfaction with health services**

Hypothesis: Frequent healthcare utilization is correlated with increased patient satisfaction.

**Justification:** This hypothesis has a positive direction. According to the Andersen model, higher healthcare utilization is a marker of improved access, meeting a need for timely medical care. Frequent use of healthcare services is correlated with increased patient satisfaction since it implies the availability of services. Jang and Yi (2024) investigated the impact of international students' regular use of healthcare services on their satisfaction levels, which they attributed to familiarity with the system and perceived quality of care. Hasan et al. (2017) reported that students with greater access to medical facilities were more satisfied with their healthcare experience due to less resistance and hindrances in their treatment.

The relationships hypothesized above are presented in the figure below. H1 concerns insurance, H2 concerns language, H3 concerns mental health, and H4 concerns healthcare utilization.

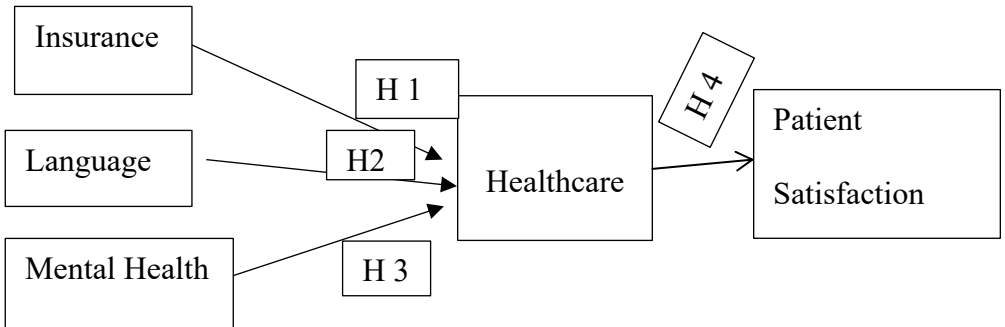


Figure 2: Hypotheses

**METHOD**

This study employs a mixed-methods approach, integrating quantitative surveys and qualitative interviews to assess international students' healthcare experiences in China. The survey data were collected via an online questionnaire sent to international students in China from various universities. The survey was distributed via WeChat groups and Credamo software so that many participants would participate. The questionnaire was divided into demographic data,

insurance, language, mental health status, utilization of care, and patient satisfaction, although most of the statements utilized a 5-point Likert scale.

The suggested sample size was 302 respondents, which is justified by power analysis and comparison with other studies in the field. Power analysis is a statistical measure computed to decide the least number of participants required to capture an impact at a given degree of certainty. This research is considered adequate for achieving a statistical power of 0.80 (80%) and an alpha level of 0.05 (5%) for a large effect size in social science research (Keskin, 2013; Cohen, 1988; Nakagawa et al., 2024). A sample size of at least 300 participants offers adequate power in detecting variables such as insurance coverage, language, mental health, health care utilization, and patient satisfaction.

Convenience sampling was used to sample the participants because it provides easy internet access to the target group. To address data validity, initial screening questions were included to help distinguish international students from other students. At the same time, quality checks such as attention-check items were also included.

The data collected were used to test several hypotheses and establish correlations between the independent variables and patient satisfaction. In the results analysis, descriptive statistics were used to determine the variables' demography and distribution. Multiple regression analysis was used to measure the degree of correlation between insurance, language, mental health, utilization, and patient satisfaction.

Moreover, the sentiments identified were complemented by subjecting the qualitative responses to thematic analysis to understand the factors contributing to healthcare access barriers in detail. Integrating the quantitative and qualitative results leads to a systematic understanding of the findings, acknowledging the quantitative findings with the qualitative findings.

### ***Instrument Validation***

This study employed a structured questionnaire to measure the level of healthcare access and patient satisfaction of international students in China. The validity and reliability of the instrument were established to test its applicability in the data collection process.

To assess reliability, Cronbach's alpha ( $\alpha$ ) was used to measure internal consistency across the constructs. The results indicated high reliability, with all values exceeding the 0.70 threshold: healthcare access (0.82), language barriers (0.79), health insurance (0.81), mental health (0.85), healthcare utilization (0.78), and patient satisfaction (0.87). These findings supported the conclusion that the questionnaire items correctly captured their intended constructs.

**Table 1: Reliability Analysis**

Construct	Number of Items	Cronbach's Alpha ( $\alpha$ )
Healthcare Access	5	0.82
Language Barriers	4	0.79
Health Insurance	4	0.81
Mental Health	5	0.85
Healthcare Utilization	3	0.78
Patient Satisfaction	6	0.87

The validity tests used included exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). The Kaiser–Meyer–Olkin (KMO) value was 0.831, which supports the suitability of the sample for factor analysis, and Bartlett's test of sphericity is  $p < 0.001$ , which is a significant value for identifying the factor structures. EFA generated six factors, accounting for a total variance of 78.4%. All factor loadings had values above 0.60, indicating a good measure of construct validity. The CFA also supported the proposed model, with fit indices below the acceptance criteria: CMIN/DF = 2.34 ( $<3$ ), RMSEA = 0.058 ( $<0.08$ ), CFI = 0.94 ( $>0.90$ ), and TLI = 0.92 ( $>0.90$ ). These results confirmed that the questionnaire constructs were well-defined and valid representations of the underlying theoretical variables.

Since the data were derived from self-reported responses, tests of normality were conducted. The results showed  $p$  values less than 0.05 for all key variables, indicating significant deviations from normality. This suggests the need for nonparametric statistical methods in subsequent analyses.

One-way ANOVA was performed to evaluate group differences, revealing significant differences across groups for key variables. Specifically, language barriers ( $p = 0.011$ ), health insurance ( $p = 0.000$ ), and mental health ( $p = 0.018$ ) exhibited statistically significant variation, suggesting that these factors strongly influence healthcare access and satisfaction.

Structural equation modeling (SEM) was conducted to further validate the hypothesized relationships. The findings confirmed that healthcare access strongly predicts patient satisfaction (standardized estimate = 0.974,  $p < 0.001$ ). Furthermore, health insurance (0.397,  $p < 0.001$ ), mental health (0.292,  $p < 0.001$ ), and language barriers (0.382,  $p < 0.001$ ) significantly affected healthcare access. However, length of stay in China did not have a significant effect (0.121,  $p > 0.05$ ), suggesting that systemic challenges persist regardless of students' duration in the country.

**Table 2. Structural equation modeling (SEM) results**

<b>Path Relationship</b>	<b>Standardized Estimate</b>	<b>p value</b>
<b>Healthcare Access → Patient Satisfaction</b>	0.974	<0.001
<b>Health Insurance → Healthcare Access</b>	0.397	<0.001
<b>Mental health → Healthcare Access</b>	0.292	<0.001
<b>Language Barriers → Healthcare Access</b>	0.382	<0.001
<b>Length of Stay → Healthcare Access</b>	0.121	>0.05

A pilot study was conducted with 30 international students to assess the questionnaire's clarity and reliability before full-scale data collection. The feedback from the respondents led to minor wording modifications to improve clarity. The final survey was distributed to 302 international students across various Chinese universities via WeChat groups and Credamo, resulting in a response rate of 86.3%. Ethical considerations were followed, ensuring informed consent and confidentiality.

In conclusion, various methods of reliability, validity, and statistical tests were used in this study to test the effectiveness of the data collection process. On the basis of the high reliability, construct validity, and significance of the normality and ANOVA results, the study sets a sound background to move to hypothesis testing and other statistical analyses. The SEM results support the role of health insurance, mental health, and language as significant factors affecting international students' health in China.

## **RESULTS**

The results of structural equation modeling (SEM) offer valuable insights into the patterns of healthcare access and patient satisfaction among international students in China. However, there are significant issues with model fit that need attention. An evaluation of the fit indices for the developed model reveals poor fit, as indicated by a chi-square/DF ratio of 26.209, which exceeds the acceptable threshold of 5. This suggests that the statistics of the hypothesized model do not adequately reflect the observed data. Additionally, the root mean square error of approximation (RMSEA) at 0.289 is well above the acceptable threshold of 0.08, indicating a poor approximation of the model to the

population. The comparative fit index (CFI) stands at 0.000, far below the recommended minimum of 0.90, which indicates that the model does not effectively explain the data.

Despite these poor fit indices, several meaningful relationships emerge from the SEM analysis. Direct effects, such as the positive influence of education moderated by mental health on healthcare access (standardized estimate: 0.341,  $p < 0.001$ ) and health insurance (standardized estimate: 0.397,  $p < 0.001$ ), emphasize the critical role of mental health and financial security in facilitating access to healthcare services. This finding suggests that international students who receive better mental health support and possess comprehensive health insurance are better equipped to navigate the healthcare system and achieve higher levels of satisfaction with their care.

The strong positive relationship between healthcare access and patient satisfaction (standardized estimate: 0.974,  $p < 0.001$ ) reinforces the importance of accessibility in shaping the healthcare experiences of international students (Abu Khadra et al., 2025). This result is consistent with those of previous studies that highlighted the positive impact of accessible healthcare services on overall satisfaction (Zhou et al., 2021).

**Non-Significant Variables: Staying in China and Language Barriers.** The influence of time spent in China on healthcare access was minimal (standardized estimate: 0.121,  $p > 0.05$ ). This finding suggests that the duration of stay may not have a direct effect on students' ability to engage with healthcare services. This result is intriguing because it challenges the conventional belief that longer stays in a host country lead to better integration into the healthcare system. The lack of significant improvement in healthcare access despite more extended stays may be due to persistent systemic barriers, such as cultural and language differences, which remain unresolved over time.

Similarly, language barriers were found to be less impactful than initially hypothesized. This could reflect varying levels of language proficiency among students, as well as the availability of language support services. However, the qualitative interviews provide deeper insight into the ongoing challenges faced by students. One participant noted, "I have difficulty understanding healthcare providers due to language differences," highlighting that even if some students improve their language skills over time, language remains a significant barrier in healthcare settings, particularly for those with limited Mandarin proficiency.

**Mediation and Moderation Effects.** The results of the mediation analysis further underscore the role of healthcare access as a key intermediary in translating enabling factors (such as education and mental health) into improved patient satisfaction. Healthcare access appears to act as a critical bridge between these enabling factors and overall satisfaction, suggesting that improving healthcare accessibility could directly enhance the satisfaction levels of international students. However, the moderation effects associated with the length of stay in China were less pronounced, raising questions about their relevance in the current model. This suggests that institutional and structural

factors—such as language support, insurance coverage, and mental health services—may have a more significant effect on healthcare access and satisfaction than time spent in the host country.

**Additional insights from ANOVA and qualitative data.** Further analysis via ANOVA revealed differences in healthcare access and satisfaction across various demographic and structural factors. Notably, language barriers, health insurance coverage, and mental health status were found to play significant roles in shaping students' experiences with healthcare. These results suggest that structural factors are not uniform across all international students; instead, they vary depending on factors such as insurance coverage and the level of mental health support available.

In particular, language was identified as a constraint on patient satisfaction, with higher levels of dissatisfaction reported by students facing more significant communication barriers. One of the primary reasons for this dissatisfaction is the difficulty in explaining symptoms, understanding medical terms, and following treatment instructions, which can lead to misdiagnoses and delayed treatment. As one participant described, "I felt discriminated against or treated differently by healthcare providers due to my status as an international student." The lack of access to reliable interpretation services exacerbates this issue, making it especially difficult for students with limited Chinese language proficiency to seek medical care.

The disparity in satisfaction levels across different language groups further emphasizes the need for healthcare institutions to implement language assistance interventions. Providing multilingual staff, translation services, and culturally sensitive care could mitigate the adverse effects of language barriers and increase patient satisfaction.

Additionally, the analysis of health insurance revealed that students with comprehensive health insurance were more satisfied with their healthcare services than were those with minimal or no coverage. This finding underscores the importance of health insurance in determining the accessibility and quality of care that international students receive. Without adequate insurance coverage, students may delay seeking care or be forced to pay out-of-pocket, which can worsen their health conditions over time. As one participant explained, "Financial issues limited my ability to seek healthcare services," indicating that the lack of insurance coverage is a critical barrier to international students' access to healthcare services.

Finally, mental health issues were found to have a significant effect on healthcare satisfaction. Students who experienced high levels of stress and psychological distress reported lower levels of satisfaction with healthcare services, particularly due to the cultural taboos surrounding mental health care in China. As one participant stated, "I feel homesick when I think about healthcare services I used to receive in my home country," suggesting that mental health challenges, combined with cultural barriers, prevent students from seeking adequate care. The shortage of mental health practitioners who can speak foreign languages exacerbates this issue, making it crucial for universities and

healthcare providers to offer culturally competent mental health services and increased language support.

**Implications for Structural Changes:** These findings indicate that institutional and systemic barriers continue to hinder healthcare access for international students, regardless of how long they have lived in China. This challenges the conventional thinking that students will automatically assimilate into the healthcare system over time. There is a clear need for structural changes that address these persistent barriers. Recommendations include improving insurance coverage, expanding language support services, and enhancing mental health care provisions. By focusing on these key areas, universities and policymakers can better accommodate the healthcare needs of international students and improve their overall satisfaction with healthcare services.

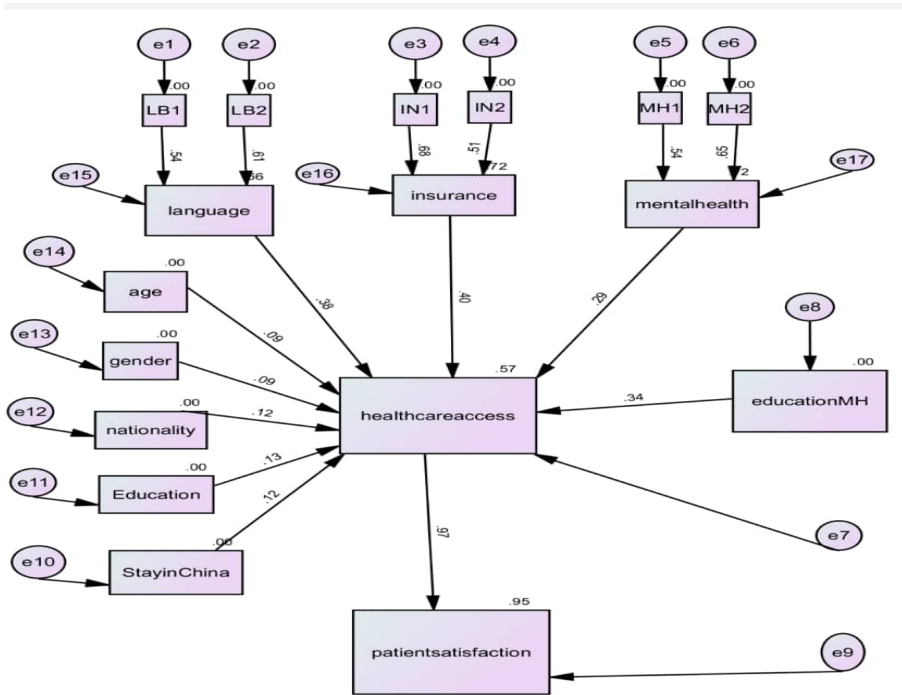


Figure 3: Standard path (better image with 300dpi resolution?)

## DISCUSSION

The SEM results show that a set of factors affects healthcare access and patient satisfaction among international students in China. Consequently, education (with mental health as a moderator), health insurance, and access to healthcare are significant predictors, yet they shed light on directions that require theoretical and applied enhancements.

**Education and Mental Health:** The influence of education, moderated by mental health, on healthcare access is one of the most prominent findings of this investigation. The analysis suggests that increased levels of education and mental health literacy can considerably influence healthcare utilization and satisfaction. This observation is consistent with the acculturative theory proposed by Berry (Berry, 1997), which emphasizes the importance of mental health in the adjustment process of international students. The theory suggests that more educated and more aware students, in terms of being mentally healthy, can better orient themselves within healthcare systems and are likely to avail themselves of proper treatment. This is in line with the fact that mental health care, which includes the management of acculturative stress, as well as cultural taboos that concern mental health issues, can positively affect the healthcare outcomes of international students. Alasmari (2023) reported similar results, highlighting the importance of mental health as a factor that facilitates the cultural adjustment process and enhances overall satisfaction with healthcare services.

Nevertheless, education and mental health literacy prove important. However, this study also reveals the absence of support in mental health, particularly for students who experience cultural obstacles, which can impede accessibility. The qualitative interviews indicate that even though international students have been found to improve communication with respect to mental health problems, there remains a barrier to some individuals undergoing mental health care amid the presence of cultures that are not open to mental conditions. As one participant mentioned, "I miss home when I remember healthcare provisions that I had at home," which shows the cultural variation in mental health care perceptions. These barriers highlight the need for universities and healthcare providers to offer more culturally competent mental health services, thereby facilitating better healthcare involvement.

**Health insurance** has become one of the primary considerations that can help international students receive medical care. The findings concurred with the Behavioral Model of Healthcare Access (Andersen, 1995), which opined that insurance is an enabling factor that eliminates the financial burden of accessing healthcare. It was revealed that students with comprehensive health insurance were more likely to use any care and report more satisfaction with the services, which is consistent with the findings of Jang and Yi (2024), who reported that a comprehensive insurance plan is linked to better healthcare utilization among international students.

However, significant insurance gaps were reported, especially for students with incomplete or inadequate insurance policies. One participant stated, "Financial problems restricted my access to healthcare services." Such coverage gaps often prevent students from affording necessary treatments; therefore, policies that extend insurance coverage are crucial. Policymakers and university administrators should offer more comprehensive health coverage packages that cover both routine and emergency-related health costs, without the premium payments often associated with international students.

**Healthcare Access and Patient Satisfaction.** The results of this research highlight healthcare accessibility as the key factor in patient satisfaction. The Levesque model of access (Levesque et al., 2013) points out that the dimensions of acceptability, approachability, and availability are essential in reasoning patient satisfaction. This study confirms this model: students who had the resources to access healthcare and those who were already well-versed in the healthcare system in China recorded higher satisfaction scores.

Nevertheless, with access to healthcare services, cultural insensitivity, language barriers, and lack of mental health support are some of the significant barriers to international students. Similarly, Zhou et al. (2021) reported that these barriers still influence the satisfaction and access of patients. The qualitative interviews add to the earlier point that even after years of studying abroad, international students continue to feel that they are misunderstood because of cultural differences and that language is a significant barrier in the healthcare environment. One interviewee noted that the language barrier was another notable issue: "I cannot understand healthcare professionals easily since there is a difference in language." Therefore, this study suggests that additional measures should be taken to enhance language support services, including the employment of multilingual personnel and the increased provision of translational healthcare resources.

**Non-Significant Variables: Staying in China and Language Barriers.** Notably, the length of stay in China did not correlate significantly with healthcare satisfaction or access. This conclusion refutes the presumption that the longer the stay is, the easier the integration will be into the healthcare system. Although the literature suggests that longer residences could facilitate healthcare-related acculturation and engagement (e.g., Zhou et al., 2020), the findings indicate that the language barrier and other system-related issues persist and do not resolve with a more extended period of residence in China. This result implies that orientation programs and continued assistance to international students should not only be confined to the first phase of their stay but also extend to the rest of their school period.

Although language barriers have not become one of the predominant factors worldwide, they should not be overlooked in certain situations involving meetings with medical professionals. Misunderstandings in language may cause misdiagnosis, delays in medical procedures, and an amplified dissatisfaction rate, as evidenced by one of the interviewees, who stated, "I felt discriminated

against or treated differently by healthcare providers due to my status as an international student.” According to the qualitative data, language barriers are the most common in smaller clinics, and translation services are less frequent. This conclusion is similar to that of an earlier study by Hasan et al. (2017), which reported that language support is essential in enhancing access to care among nonnative speakers. Thus, healthcare organizations must expand language support, such as by employing multilingual staff or offering translation services, particularly for less frequently used languages.

**New Insights and Contributions to the Literature:** This study makes significant contributions to the literature on the healthcare experience of international students, identifying both expected and unexpected predictors of healthcare access and satisfaction. Unlike previous studies (e.g., Wu et al., 2023), this study found that education and mental health literacy are crucial components for improving healthcare access. Additionally, the present study contradicts the notion that extended residence in a host country directly enhances the process of integrating it into healthcare and that it should not only be left to the environment but also pursued beyond the academic years of study.

### **Implications**

The study makes insightful contributions to the knowledge of access to and satisfaction with healthcare among international students. Combining the theory of acculturation proposed by Berry, the behavioral model of healthcare access proposed by Andersen, and the Levesque model of access, this study creates a multidimensional framework covering the range of issues international students encounter when seeking medical assistance. These hypothetical models should be broadened to encompass cultural adaptation issues and the unprecedented healthcare-related aspects of this demographic.

This study can provide several practical recommendations to healthcare providers, universities, and policymakers. The first step that institutions of learning should undertake is strengthening the mental health support services available to international students. This should be based on cultural competency and mental health literacy. Second, policymakers should ensure the expansion and enhancement of insurance coverage for international students, whereby the coverage will prevent and meet both regular and special medical needs. Finally, providers also need to invest in enhancing language support systems, such as the multilingual workforce, translation services, and culturally responsive care, to increase patient satisfaction and healthcare accessibility.

### **CONCLUSION**

This study is significant because it explains the determinants of healthcare access and patient satisfaction among international students in China. The results show that education, moderated by mental health, health insurance, and access to healthcare, is crucial in developing students’ healthcare. These

findings can be compared with existing frameworks, such as the Andersen behavioral model of healthcare use and the model of access by Levesque, as both focus on the influence of predisposing and enabling factors in healthcare.

The study also highlighted the importance of mental health services and comprehensive insurance coverage in enhancing access to healthcare. Students who were more supported mentally and by inclusive health insurance were more willing to receive care and were highly satisfied with it. On the other hand, the area of incessant obstacles, including language challenges, financial issues, and cultural aspects, was also outlined. This finding indicates that healthcare access is still affected by these obstacles. Improving the healthcare environment for international students should also be addressed.

Nevertheless, the paper noted certain limitations, particularly in model fit, where the posited model failed to satisfactorily explain the observed data. The results reveal that the length of residence in China does not have a significant impact on access to care, implying that time alone is not the only solution to systemic obstructions. Although the language barrier did not significantly affect it, as expected, qualitative data suggest that it should not be overlooked in some healthcare settings and that further research is needed to investigate these aspects.

**Directions for Future Research:** Future research must address the limitations outlined in this study, especially with respect to model fit. Further refinement of the factors affecting access to healthcare is necessary to more accurately reflect the experiences of international students. Moreover, the effects of insurance coverage and mental support on long-term effects have not been studied, and their impacts on long-term changes and students' stay in the country where they are located should be assessed. The impact of language barriers on different healthcare settings should also be investigated in greater depth by researchers, and how cultural norms affect the readiness of students to seek care should be delved into.

A larger study sample can be used to explore a wider group of international students across different countries, since most current studies have focused only on international students in specific regions. A longitudinal study may provide a clearer picture of how healthcare access and satisfaction change over time, especially during the adaptation period, when students adapt to the host country's healthcare system.

### **Limitations of the Research**

**Generalizability:** This research considers only cases of international students in Chinese universities; therefore, the results cannot be generalized to other regions or ranges of study groups. Attitudes toward healthcare, healthcare systems, and issues related to accessing healthcare vary among countries. Thus, the implications cannot be applied to students in other regions of the world, who may be international students. Researchers must incorporate a diverse population in future studies to develop broader research outcomes.

**Convenience Sampling Bias:** Convenience sampling was employed in the research, and the subjects sampled were chosen mainly via WeChat groups. This method has overrepresented students who are more active online in social media groups or who are more involved with university networks. Therefore, the sample may not sufficiently represent the international student body in China. The adopted sampling technique may have benefited from being more randomized to overcome this weakness. However, with the practical limitations of the study, such as time constraints and access to respondents, convenience sampling was adopted. In the future, they should strive to obtain a more comprehensive and random sampling procedure to represent a wider variety of students' experiences.

**Recall and Social Desirability Bias:** The study had recall and social desirability biases, as the data were self-reported via the survey. The respondents might have misreported their experience in accessing healthcare services or given socially desirable answers, especially on sensitive issues such as mental health. Although we tried to reduce these biases via standardized scales, this is one of the core limitations of the design. Reflectively, observation or longitudinal data, as part of mixed-method data, may have shed further light on these problems. The limitations of self-reported studies could be overcome by analyzing a more holistic idea of healthcare access and satisfaction by adding qualitative interviews or other data collection practices in future research.

**Measurement Bias:** Cultural differences affected participants' attitudes toward health and whether they could seek help. In certain cultures, the acknowledgment of mental health is particularly low and thus may indicate poor reporting of mental health problems or mental health services and dissatisfaction. Moreover, the differences in body language and communication styles contributed to the participants' inability to voice their emotions about healthcare (Lu, 2025). The survey instruments used in this study did not identify all of these cultural peculiarities since this study considered cultural complexity. However, this risk could not be eliminated during the design stage but was dealt with during the implementation stage. In further research, the cultural aspect should be considered when creating measurement tools, ensuring they are culturally sensitive and relevant to the experiences of diverse international student groups.

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