



Subjective Well-Being of International Students: Interplay of Perceived Discrimination, Health Status, and Community Satisfaction

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ABSTRACT

Students' adjustment and well-being in a cross-cultural context have become important topics in international higher education studies. This study explored the psychological mechanism underlying the impact of perceived discrimination and perceived health status on the subjective well-being of international students. The responses of 358 international students were analyzed using the survey datasets. The results indicated that the perceived health status of international students had a significantly positive impact on their subjective well-being. Conversely, perceived discrimination had a negative impact on subjective well-being and community satisfaction. Notably, community satisfaction mediated the relationship between perceived discrimination and subjective well-being. Furthermore, the results revealed that the effect of community satisfaction on subjective well-being varied between the Asian and non-Asian students. These findings can assist higher education program providers in developing a community-oriented support system for students striving to adjust to cross-cultural environments.

Keywords: community satisfaction, perceived discrimination, perceived health status, subjective well-being

The well-being and adjustment of students in cross-cultural environments have emerged as an important topic in international higher education studies. International students not only bring educational and economic benefits to their educational institutions but also make a significant economic contribution to the cities where they reside. To facilitate the adjustment of international students in cross-cultural environments, it is crucial for higher education service providers and counselling organizations to comprehend the discrimination that students encounter throughout their adjustment process (Chatterton & Goddard, 2000). Implementing suitable assistance programs would create a more supportive and

accommodating environment for international students, thereby increasing their overall health (Russell et al., 2008) and well-being (Andrade, 2006; Khawaja & Stallman, 2011; Mesidor & Sly, 2016) of college students.

When moving to a foreign country, international students face challenges such as cultural differences, language barriers, and loneliness (Sawir et al., 2008). A person's well-being can be influenced by social factors, such as the perception of discrimination and community satisfaction, as well as personal factors, such as health status. Perception of discrimination arises when students feel that they are treated unfairly because of their nationality or ethnicity, which is a commonly observed difficulty (Lee et al., 2017). The health status of international students is another important factor that enhances their ability to adjust to a new environment. Thus, the ability to adjust to a new environment may significantly impact overall well-being.

However, previous studies have not fully explored the psychological mechanisms by which these factors influence international students' subjective well-being. Thus, this research is critical for several reasons as it provides a comprehensive theoretical framework for the mechanism. First, it is important to understand the mediating role of community satisfaction on the effects of perceived discrimination and perceived health status on subjective well-being. This finding offers both theoretical and practical insight. For instance, community-oriented programs can be designed to focus on social inclusion and the development of supporting networks for international students (Huebner et al., 2004), with joint efforts between higher education institutions and city officers. Building strong social connections and fostering a sense of belonging within the community can significantly enhance the well-being of international students, particularly those who have been significantly affected by the COVID-19 pandemic.

Second, exploring perceived discrimination can contribute to creating more inclusive environments for international students (Ng et al., 2021). Specifically, by understanding the impact of discrimination, educational institutions and society as a whole can strive to foster a more welcoming and supportive environment for international students.

Additionally, gaining insight into the health status of international students can help educators and policymakers develop more effective health support programs to improve the adjustment process (Hanassab & Tidwell, 2002; Mesidor & Sly, 2016). Understanding the specific health needs and challenges faced by international students can facilitate the development of targeted support services to promote their overall well-being.

Previous studies on the health and psychological well-being of international students have serious limitations because the data were collected from students at a particular university or college (Abukhalaf et al., 2023; Baghoori et al., 2022; Han et al., 2013; Rosenthal et al., 2008). The nature of the data restricts the generalizability of the findings, and the characteristics of the university and existing programmes play a critical role in determining the success of the adjustment process for international students.

To overcome the limitations of previous studies, this study analyzed a comprehensive dataset collected from a big city, Seoul. By examining a broader sample, the findings can provide a more representative understanding of international students' experiences and challenges in diverse urban settings. Furthermore, this study used data collected through face-to-face interviews using stratified cluster sampling to select respondents from international students. The data collection method allowed for a comprehensive exploration of the factors influencing the subjective well-being of international students, providing a richer understanding of their experiences and needs.

In summary, this study aims to address the gaps in previous studies by exploring the psychological mechanisms behind the influence of various factors on the subjective well-being of international students. By examining perceived discrimination, health status, and community satisfaction within a comprehensive theoretical framework, this study can contribute to creating more inclusive environments, developing effective support programs, and promoting social inclusion for international students. The study also compared the effects of these constructs on the subjective well-being of Asian and non-Asian (including those from America and Europe) international students for further insight into the cross-cultural context. The use of a comprehensive dataset enhanced the validity and depth of the analysis.

LITERATURE REVIEW

Subjective well-being

International students are individuals who leave their home countries to pursue higher education in a foreign environment. They face unique challenges when adjusting to a new culture, forming new social relationships, and coping with the demands of academic life, which can result in stress and mental health challenges (Lee & Rice, 2007; Russell et al., 2008). These factors can significantly impact overall subjective well-being in a new setting.

Subjective well-being is a complex concept that encompasses an individual's overall assessment of life, considering their feelings, thoughts, and judgments regarding their level of satisfaction and happiness (Diener et al., 2003). This evaluation is influenced by a variety of internal and external factors, including social relationships, health, economic status, and cultural factors (Diener et al., 2003).

Numerous studies have demonstrated that factors such as acculturation stress, social support, and host community attitudes play crucial roles in influencing the subjective well-being of international students (Lee et al., 2004; Muthuswamy, 2023; Ng et al., 2017). It is often observed that international students experience lower levels of subjective well-being than domestic students (Kivelä et al., 2022; Poyrazli, 2001). Factors such as difficulties in cultural adjustment, language barriers, and homesickness may contribute to this disparity (Bailey & Phillips,

2016). Moreover, international students may be more susceptible to experiencing discrimination, which can negatively impact their overall subjective well-being (Liu, 2019).

Nevertheless, there are factors that can help mitigate the adverse effects of these challenges and promote international students' subjective well-being (Cipolletta et al., 2022). These factors include fostering a sense of belonging, promoting community satisfaction (Liu, 2019), and recognizing perceived health status (Keyes, 2002; Russell et al., 2008). It is important to understand that international students' subjective well-being is a multifaceted construct influenced by individual, social, and cultural factors (Kivelä et al., 2022).

Community satisfaction

In this study, community satisfaction serves as a crucial construct representing the level of satisfaction individuals have with the local community (Kanwal et al., 2020). This construct is influenced by various factors, including the social and physical environment, quality of community services and facilities, and overall level of social cohesion and connectivity (Mouratidis & Poortinga, 2020). High levels of community satisfaction can increase overall well-being and stimulate the socioeconomic development of a community (Fakfare & Wattanacharoensil, 2021). Conversely, low levels of community satisfaction can result in social isolation, decreased welfare, and limited community development (Farrell et al., 2004).

When international students adapt to living and studying in new environments, they encounter a range of challenges. Previous studies have indicated that international students' satisfaction with their communities significantly influences their subjective well-being (Lee & Yoo, 2015; Wei et al., 2011; Yoon et al., 2008). A positive sense of belonging and fulfilment within their local community can elevate self-esteem and overall well-being (Herridge et al., 2023; Prezza & Costantini, 1998).

This study suggests that community satisfaction can act as a buffer against the negative impact of discrimination on subjective well-being (Liu, 2019; Schmitt et al., 2014). In other words, community satisfaction may mediate the effects of perceived discrimination on subjective well-being (Cipolletta et al., 2022; Liu, 2019). Based on these findings, this study proposes the following hypotheses, highlighting the role of community satisfaction as a key mediator:

- H₁: Higher levels of community satisfaction in a city lead to increased subjective well-being.
- H₂: Community satisfaction mediates the effect of perceived discrimination on subjective well-being.
- H₃: Community satisfaction mediates the effect of perceived health status on subjective well-being.

Perceived discrimination

Perceived discrimination refers to the belief that one is treated unfairly based on group membership (Carr & Friedman, 2005; Ye et al., 2012). Discrimination can have a negative impact on individual self-esteem as it is closely linked to social group affiliation and can evoke negative emotions (Major et al., 2007). Numerous studies have demonstrated that perceived discrimination adversely affects mental health (Russell et al., 2008; Williams & Mohammed, 2009), life satisfaction, and educational experiences (Herridge et al., 2023; Karuppan & Barari, 2010).

Perceived discrimination can result in feelings of alienation, anxiety, low self-esteem, and a diminished sense of belonging (Poyrazli & Lopez, 2007), ultimately reducing community satisfaction (McMillan & Chavis, 1986). It also undermines international students' satisfaction with their communities (Poyrazli & Lopez, 2007) and overall subjective well-being (Liu, 2019; Xiong et al., 2022). The stress from discrimination can exacerbate feelings of loneliness and isolation, further reducing international students' well-being (Maleku et al., 2022). Specifically, international students might be stereotyped based on their national origin rather than racial characteristics, affecting their community satisfaction and well-being.

Neo-Racism, a concept that extends beyond traditional notions of racism based on biological factors, emphasized cultural and national differences as bases for discrimination (Balibar, 2007). This extended form of discrimination is particularly relevant for understanding the difficulties faced by international students, as it encompasses prejudices based on nationality, cultural practices, language, and religious beliefs. The constant exposure to various discriminatory practices can lead to what is known as minority stress, which not only diminishes their day-to-day happiness but also their overall life satisfaction, a key aspect of subjective well-being (Diener et al., 1985).

Previous research has highlighted the detrimental effects of perceived discrimination on the subjective well-being and community satisfaction of international students. Based on these findings, the following hypotheses are proposed:

- H4: Higher levels of perceived discrimination lead to decreased levels of community satisfaction.
- H5: Higher levels of perceived discrimination lead to decreased levels of subjective well-being.

Perceived health status

Perceived health status refers to an individual's evaluation of their health based on their own perceptions and interpretations of their physical, mental, and social health conditions (Bailis et al., 2003). It is subjective in nature and reflects personal opinions or judgments about one's health, rather than an objective measure of health status. Perceived health status can be influenced by various

factors, including personal experiences, social comparisons, and cultural beliefs, and may not necessarily align with an individual's actual health condition (Pinquart, 2001).

Research has demonstrated that perceiving oneself as in better health, both physically and mentally, is associated with higher levels of subjective well-being among international students (Russell et al., 2010; Zhang et al., 2021). Good health enables individuals to cope more effectively with stress and challenges, leading to increased happiness and overall satisfaction with life. Furthermore, good health enhances social and academic functioning, further improving subjective wellbeing.

Previous studies have shown a positive relationship between perceived health status, community satisfaction, and subjective well-being. Based on these findings, the following hypotheses are proposed:

- H₆: Higher levels of perceived health status lead to increased levels of community satisfaction.
- H₇: Higher levels of perceived health status lead to increased levels of subjective well-being.

METHOD

Measures

For this study, various constructs were collected from public datasets provided by the Seoul Metropolitan Government to ensure a highly representative sample. The participants completed questionnaires that assessed their subjective well-being, perceptions of city life, and demographic information. This study aimed to evaluate foreign students' perceptions of life in Seoul, focusing on their difficulties in adaptation, experiences of discrimination, health status, and satisfaction with the local community.

Subjective well-being (SW) was measured using five items: physical condition, economic stability, relationships with peers and friends, family life, and school life. Participants rated their subjective well-being on a 10-point Likert scale ranging from 1 (very unhappy) to 10 (very happy).

Perceived discrimination (PD) measures the experience of participants being discriminated against in specific situations because of their foreign status in Seoul. The survey included five items assessing discrimination in various contexts, such as on the street or in a neighborhood, in stores, restaurants, or banks, in public institutions (e.g., social security offices or police stations), while searching for housing, and at work. Respondents indicated their level of discrimination on a 4-point Likert scale, ranging from 'not at all discriminated against' (1) to 'experiencing severe discrimination' (4).

Community satisfaction (CS) encompasses a series of questions evaluating participants' satisfaction with the four aspects of life in Seoul. The questionnaire asked participants to rate their satisfaction with the economic, welfare, social, and

educational environments using a 5-point scale, with 1 indicating ‘very dissatisfied’ and 5 indicating ‘very satisfied.’

Perceived health status (PH) was assessed with a single item using a Likert 5-point scale (1 = ‘very bad’ to 5 = ‘very good’) to measure participants’ overall health status while living in Seoul. Participants were asked, ‘How do you feel about your overall health status while living in Seoul?’

Furthermore, the Seoul Survey (SMG, 2022) collected additional demographic information from participants, including age, gender, nationality, length of residence in Seoul, health status, and level of stress.

Table 1: Sample Characteristics (N = 358)

	Gender				Total	
	Male (%)		Female (%)			
Asians						
China	41	(27.5)	67	(32.0)	108	(30.1)
Japan	15	(10.1)	13	(6.2)	28	(7.8)
Vietnam	28	(18.8)	43	(20.5)	71	(25.2)
Others	31	(20.8)	44	(21.1)	75	(26.6)
Sub-total	115	77.2	167	79.8	282	78.7
Non-Asians						
USA	6	(4.0)	9	(4.3)	15	(4.2)
European	13	(8.7)	17	(8.1)	30	(8.4)
Others	15	(10.1)	16	(7.7)	31	(8.7)
Sub-total	34	22.8	42	20.1	76	21.3
Total	149	(41.6)	209	(58.4)	358	(100)
Duration of Residence						
3 months~less than 1 years	23	(15.4)	31	(14.8)	54	(15.1)
1 year~less than 2 years	43	(28.9)	65	(31.1)	108	(30.2)
2 years~less than 3 years	37	(24.8)	55	(26.3)	92	(25.7)
More than 3 years	46	(30.8)	58	(37.8)	104	(29.0)
Total	149	(41.6)	209	(58.4)	358	(100)

Data

This study utilized secondary data from the Seoul Survey (SMG, 2022) conducted by the Seoul Metropolitan Government on foreign residents and extracted data related to international students. The survey collected information on various aspects of daily life experiences, subjective well-being, health, social interaction, and housing among international students living in Seoul. Relevant items were selected from this dataset to measure the constructs of interest.

The analysis in this study was based on the responses of 358 international students who participated in the Seoul Survey (SMG, 2022), which involved 2,500 foreigners residing in Seoul. Participants were selected using stratified cluster sampling and underwent face-to-face interviews conducted by trained interviewers between September 6 and November 8, 2021.

Among the 358 international students, 41.6% were male and 58.4% were female. In terms of nationality, the largest group was Chinese students at 30.1%, followed by Vietnamese students at 25.2%. Regarding the length of their stay in Seoul, the majority of students had lived in the city for 1-2 years accounting for 30.2%), followed by those who had lived for 2-3 years (25.7%) (see Table 1 for details).

Data analysis

To evaluate our research model (Figure 1), this study employed the Partial Least Squares Structural Equation Modeling (PLS-SEM) method (Sarstedt et al., 2021).

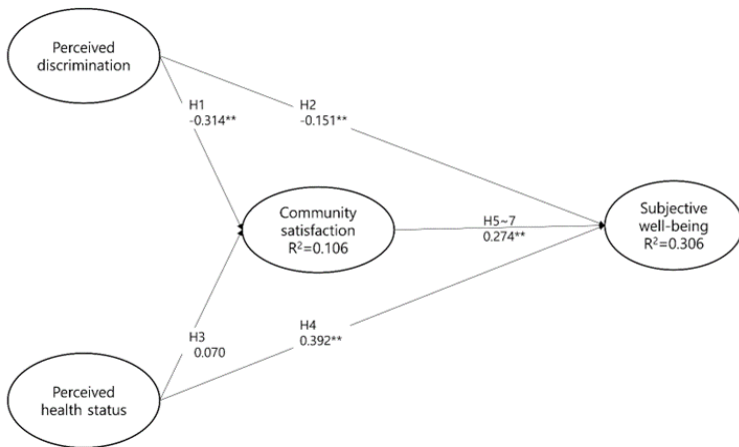


Figure 1: Research Model and Results

The PLS-SEM method is well suited for studies utilizing secondary data and for those aiming to explain and predict target constructs (Hair et al., 2019). It is also appropriate for analyzing mediating effects (Carrión et al., 2017). Numerous previous studies on subjective well-being have utilized the PLS-SEM approach (Cho et al., 2021; Kang & Shao, 2023; Ko & Kuo, 2009), making it suitable for our study. This study conducted model estimation using the statistical software SmartPLS 3.3.6 and performed a multigroup analysis and importance-performance model analysis. For significance testing, it employed a bootstrapping procedure with 5,000 samples, and applied a two-tailed test.

RESULTS

Assessment of the measurement models

To assess the reflective measurement models, this study conducted various analyses, including indicator reliability, internal consistency (composite reliability and ρ_A), convergent validity (average variance extracted; AVE), and discriminant validity (heterotrait-monotrait ratio of correlations; HTMT) (Hair et al., 2019).

Indicator loadings were examined to evaluate the indicator reliability. In our measurement model, all indicator loadings exceeded the threshold value of 0.70 (Table 3), indicating satisfactory indicator reliability (Sarstedt et al., 2021).

Cronbach's alpha (CA) was employed to measure the internal consistency or reliability of multi-item scales or questionnaires. All coefficients were above 0.7, indicating the good reliability of the respective tests. Composite reliability (CR) and rho (ρ_A) were used to assess the internal consistency reliability of the reflective constructs.

The internal consistency reliability was found to be satisfactory. The values for adaptation difficulties, perceived discrimination, community satisfaction, and subjective well-being ranged from 0.70 and 0.95. Average Variance Extracted (AVE) can be used to evaluate the convergent validity of reflective constructs. The AVE values of all the reflective constructs in our model exceeded the critical value of 0.5 (Table 2).

Finally, to confirm the discriminant validity, the distinctness of the construct was measured using the HTMT correlation ratio. Since all HTMT values are well below the conservative cutoff value of 0.85, discriminant validity is accepted (Table 3).

Table 2: Measurement model evaluation

Construct / Items	<i>Loading</i>	<i>CA</i>	<i>rho</i>	<i>CR</i>	<i>AVE</i>
Community satisfaction		0.789	0.791	0.864	0.613
Q3A2	0.786				
Q3A3	0.800				
Q3A4	0.795				
Q3A5	0.749				
Perceived discrimination		0.883	0.886	0.915	0.682
Q19A1	0.791				
Q19A2	0.827				
Q19A3	0.821				
Q19A4	0.797				
Q19A5	0.889				
Perceived health status		1.000	1.000	1.000	1.000
Q11	1.000				
Subjective well-being		0.855	0.862	0.895	0.631
Q7A1	0.814				
Q7A2	0.795				
Q7A3	0.778				
Q7A4	0.812				
Q7A5	0.773				

Table 3: Discriminant validity using the HTMT

	<i>CS</i>	<i>PD</i>	<i>PH</i>	<i>SW</i>
Community satisfaction (CS)				
Perceived discrimination (PD)	0.381			
Perceived health status (PH)	0.100	0.086		
Subjective well-being (SW)	0.428	0.305	0.454	

Assessment of the structural model

After confirming the validity and reliability of the measurement model, this study assessed the proposed structural model using a bootstrap procedure. To evaluate the structural model, various analyses were conducted, including checking collinearity with variance inflation factors (VIFs), examining the importance and relevance of path coefficients, performing a multigroup analysis, and conducting an importance-performance model analysis.

Collinearity was assessed by examining the variance inflation factors (VIFs); the largest inner VIF was 1.119 (Table 4). This indicates that collinearity was not a critical issue. A VIF value greater than 3.3 is typically considered an indication of pathological collinearity, suggests the presence of common method bias (CMB) (Kock, 2015). However, the results in Table 4, which provide a summary of the overall collinearity assessment, show no cause for concern in this regard (Ghasemy et al., 2020).

Next, the size and significance of path coefficients β were examined. Except for one path coefficient in the structural model, all others were statistically significant ($p < 0.01$) (Table 4). First, the effect of each construct on community satisfaction was analyzed. Perceived discrimination ($\beta = -0.314$, $p < .01$) negatively affected community satisfaction, indicating that it acted as a hindrance to community satisfaction. In contrast, the impact of perceived health status on community satisfaction was not statistically significant.

Table 4: Effects on endogenous constructs

Outcome & Paths (Constructs)	Beta	CI		P values	VIF	Supported
		2.50%	97.50%			
EC: Community satisfaction ($R^2=0.106$)						
PD → CS	-0.314	-0.410	-0.224	0.000	1.004	Yes
PH → CS	0.070	-0.035	0.176	0.198	1.004	No
EC: Subjective well-being ($R^2=0.306$)						
CS → SW	0.274	0.164	0.382	0.000	1.119	Yes
PD → SW	-0.151	-0.247	-0.052	0.002	1.115	Yes
PH → SW	0.392	0.306	0.483	0.000	1.010	Yes
(Specific indirect effects)						
PD → CS → SW	-0.086	-0.133	-0.049	0.000		Yes
PH → CS → SW	0.019	-0.010	0.054	0.233		No

The effects of each construct on the target construct and the subjective well-being of international students were examined. Community satisfaction ($\beta = 0.274$, $p < .01$) and perceived health status ($\beta = 0.392$, $p < .01$) positively impacted students' subjective well-being, whereas perceived discrimination ($\beta = -0.151$, $p < .01$) had a detrimental effect ($R^2 = 0.306$).

The mediation model revealed that perceived discrimination ($\beta = -0.086$, $p < .01$) significantly influenced subjective well-being through its impact on community satisfaction (Table 4). The total effect of perceived discrimination on subjective well-being, including both the direct and indirect effects, was significantly negative ($\beta = -0.238$, $p < .01$). Conversely, the total effect of perceived health status on subjective well-being was significantly positive ($\beta = 0.411$, $p < .01$).

The Importance-Performance Model Analysis (IPMA) method was applied to assess the impact of different factors on subjective well-being and performance. The results showed that perceived health status had the greatest effect (0.707) on subjective well-being, and performed the best (70.531), followed by community satisfaction with an influence of 0.565 and performance of 68.672. On the other hand, perceived discrimination had a negative effect on subjective well-being (-0.472), resulting in lower performance (33.689). These findings suggest the importance of improving health and living conditions to attract international students and to facilitate their adjustment to the local community (de Moissac et al., 2020).

In the Seoul Survey (SMG, 2022), participants were asked to indicate their nationality and the data were analyzed by categorizing respondents as non-Asian or Asian students. Using the PLS-MGA method, an analysis was conducted to compare differences in subjective well-being between the two groups. The results revealed significant differences between non-Asian and Asian international students in terms of the effects of community satisfaction on subjective well-being ($\beta_{\text{diff}} = 0.376$, $p < .01$) and the effect of perceived health status on community satisfaction ($\beta_{\text{diff}} = 0.229$, $p < .05$) and the indirect effect of perceived health status on subjective well-being via community satisfaction ($\beta_{\text{diff}} = 0.163$, $p < .01$). However, no significant differences were found between non-Asian and Asian students in terms of the other paths.

Specifically, community satisfaction was significantly more influential on the subjective well-being of non-Asian students ($\beta_{\text{diff}} = 0.376$, $p < .01$) compared to their Asian students. Moreover, perceived health status had a more pronounced effect on community satisfaction among non-Asian students ($\beta_{\text{diff}} = 0.229$, $p < .05$) and subsequently on their subjective well-being via community satisfaction ($\beta_{\text{diff}} = 0.163$, $p < .01$). These disparities suggest that the subjective well-being of Asian students is less affected by their integration into the community and their health perceptions, potentially indicating a form of discrimination rooted in cultural and national differences, as posited by neo-racism.

Table 5: Comparison between Non-Asian and Asian

<i>MGA</i>	<i>Path Coefficients</i>			<i>p-value</i>
	<i>Non-Asian</i>	<i>Asian</i>	<i>Differences</i>	<i>PLS-MGA</i>
CS → SW	0.529	0.153	0.376	0.003
PD → CS	-0.257	-0.351	0.094	0.430
PD → SW	-0.131	-0.186	0.055	0.605
PH → CS	0.312	0.013	0.299	0.018
PH → CS	0.295	0.407	-0.112	0.321
PD → CS → SW	-0.136	-0.054	-0.082	0.218
PH → CS → SW	0.165	0.002	0.163	0.006

In addition, the data suggests that males experience significantly greater adaptation difficulties than females, with a mean difference that is statistically significant ($M_{\text{male}} = 2.85$ vs. $M_{\text{female}} = 2.65$; $t = 2.50$, $p < 0.05$), indicating potential gender-specific challenges in adaptation processes. The statistical results indicate no significant gender differences in perceived discrimination, community satisfaction, or subjective well-being ($p > 0.05$ for all).

Additional analysis

The Seoul Survey (SMG, 2022) delved into various aspects related to international students, including the causes of discrimination, sources of stress, and healthcare issues. The survey results revealed that nationality was the most frequently cited cause of discrimination, mentioned in 35% of responses. Language skills were ranked as the second most common reason (32.5% of responses), followed by appearance, including skin color (17.1% of responses). Interestingly, nationality emerged as the primary discriminatory factor for Asian students, whereas appearance, such as skin color, was cited as the main factor for non-Asian students.

The stress levels of international students were also investigated in the survey (SMG, 2022). Financial concerns stood out as the most significant source of stress, accounting for 28.3% of responses. Excessive academic demand was ranked as the second most reported source of stress (25.9%), followed by interpersonal relationships in school life (13.9%).

Regarding healthcare-related experiences, the Seoul Survey (SMG, 2022) examined international students' coping strategies when sick, the challenges they faced in accessing medical services, the types of health insurance they purchased,

and their preferred contact points for seeking help with psychological or physical problems (Maeshima & Parent, 2022). The results revealed that international students typically visit hospitals (39.7%) when they feel ill, purchase medication from pharmacies without a doctor's prescription (21.8%), or choose to endure their symptoms (20.9%) (Jang, 2021). Some of the challenges faced by international students when accessing medical institutions include difficulties in communicating with healthcare providers (25.4%), high costs (22.1%), and complex administrative procedures (10.9%). The most common type of medical insurance among international students was personal medical insurance (40.2%), while 28.3% of international students reported that they had no insurance.

When international students encounter psychological or physical health problems, their first point of contact for seeking help is usually with their "friends or relatives from their home country." The second most common response is that they "resolved the issue on their own without seeking help from anyone." Other options include turning to "Korean friends or relatives" or "support groups for foreigners".

DISCUSSION

Theoretical implications

Community satisfaction has been a subject of interest for scholars across various disciplines, who have explored diverse approaches to enhancing it by improving local community services and facilities and promoting social cohesion (Mouratidis & Poortinga, 2020).

The results revealed that community satisfaction not only directly influenced the subjective well-being of international students but also mediated the effect of perceived discrimination on subjective well-being. These results highlight the importance of both perceived health status and community satisfaction as positive factors that determine international students' well-being. Conversely, the results showed that perceived discrimination had detrimental effects on international students' subjective well-being.

Overall, the results showed that students who were satisfied with their local communities tended to have higher levels of subjective well-being, indicating that community satisfaction played a key mediating role. These findings underscore the importance of fostering a welcoming and inclusive local community atmosphere to enhance the subjective well-being of international students and collaborative efforts between higher education institutions and city officers.

These findings are consistent with those of previous studies in various fields, emphasizing the significance of community satisfaction (Lee & Yoo, 2015; Liu, 2019; Prezza & Costantini, 1998), perceived discrimination (Karuppan & Barari, 2010; Poyrazli & Lopez, 2007; Xiong et al., 2022) and perceived health status (Russell et al., 2010; Zhang et al., 2021).

Furthermore, employing the PLS-MGA method, this study identified notable disparities between Asian and non-Asian students in three areas: the effect of community satisfaction on subjective well-being, the effect of perceived health

status on community satisfaction, and the indirect effect of perceived discrimination on subjective well-being through community satisfaction.

Practical implications

Based on the research findings, it is recommended that both local governments and higher education institutions prioritize efforts to enhance international students' satisfaction with their local communities. The study also revealed that the effect of community satisfaction on subjective well-being differs between non-Asian and Asian international students, suggesting a need for tailored approaches by local governments and higher education institutions to meet the unique needs of different student groups.

By working together, they can develop comprehensive initiatives that promote an inclusive environment, both on campus and within the local community. Higher education institutions can collaborate with city officers to organize cultural integration events, language exchange programs, and community service opportunities to facilitate meaningful interactions between international students and local residents. They can also collaborate on initiatives to improve transportation, housing, and safety measures, ensuring that international students feel secure and supported in their new environments.

Moreover, joint efforts can be made to enhance access to healthcare services, provide information on local resources, and address any legal or administrative challenges that international students may encounter. By fostering this collaborative community-oriented support system, higher education institutions and city officers can create a supportive ecosystem that facilitates the successful adjustment and overall well-being of international students.

This study highlighted the positive effect of perceived health status on subjective well-being and identified differences in the effect of perceived health status on community satisfaction between non-Asian and Asian international students. Consequently, higher education institutions should focus on promoting the physical and mental health of international students by offering resources and support to enhance their overall well-being (Russell et al., 2008). In addition, as international students may encounter communication difficulties, high expenses, and complicated procedures when seeking medical treatment in host countries, higher education institutions and local governments should provide guidance and assistance to help them navigate unfamiliar healthcare systems. To address the issues of expensive healthcare and inadequate insurance coverage, it is desirable for higher education institutions to consider collaborating with local insurance providers to offer coverage at favorable rates. Additionally, higher education institutions should provide resources such as brochures and videos that offer a clear and user-friendly explanation of the procedure for accessing medical services, helping international students to understand and navigate the process.

Given that financial challenges and excessive academic demands are the top sources of stress among international students, higher education institutions should consider assisting students in managing their finances and coping with

academic pressures. Higher education institutions encourage international students to build social networks as academic and mental support groups (Carr et al., 2003). This will help international students feel connected and supported, which can positively impact their well-being.

In summary, it is essential for higher education institutions and local governments in global cities to understand the factors that influence the subjective well-being and physical health of international students in order to develop effective strategies for managing and marketing higher education. When international students have a positive experience in a new city, this can lead to positive word-of-mouth and benefit both higher education institutions and host cities in terms of growth and reputation.

CONCLUSION

This study aims to gain a deeper understanding of the experiences and perspectives of international students by testing a comprehensive theoretical framework. This study is significant, as it uncovers the complex relationship between international students' perceptions of life and their subjective well-being. By identifying the psychological mechanisms that influence subjective well-being, valuable insights are gained into how to improve the adaptation and integration of international students in a new environment. The results can guide the formulation of educational policies and initiatives aimed at enhancing the health and subjective well-being of international students while also expanding existing knowledge about their experiences.

It is important to acknowledge the limitations of this study. This study mainly represents the perspectives of international students from developed countries, which may introduce bias in the outcomes. Additionally, the level of community satisfaction and perception of discrimination may vary based on income levels. In future research, it would be valuable to compare the experiences and perceptions of international students in different countries. For instance, it would be intriguing to conduct comparative studies on the health and subjective well-being of Asian international students in English-speaking countries and American or European international students residing in non-English-speaking countries, such as Korea and China. Furthermore, future research could explore how other factors, such as educational, economic, and institutional variables, impact the physical health and subjective well-being of international students. In addition, future research can explore the roles of various types of friendships—co-national, host national, and multi-national—in enhancing the well-being of international students. This approach will address how these friendships contribute to or hinder the adaptation and integration of international students into their new academic and cultural environments. Understanding the dynamics between these friendship types will help researchers identify specific mechanisms that facilitate better social support systems, reduce feelings of alienation, and improve overall well-being.

In conclusion, this research emphasizes the significance of higher education institutions taking proactive steps to support international students' health and

well-being. The findings can be utilized in the development of community-oriented support systems not only at the college level, but also at the city level. By implementing such systems, both higher education institutions and local communities can contribute to creating a supportive and inclusive learning environment for international students.

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