

## EVALUATION OF DEPRESSION AMONG CHINESE AND NON-CHINESE STUDENTS IN HOKKAIDO UNIVERSITY, JAPAN

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**Abstract:** A total of 813 are foreign students from 77 different countries are studying in Hokkaido University (Hokudai), among them 306 are Chinese. The existing health education, health promotion and disease prevention programs of Hokudai Students Health Center (HSHC) may not meet the needs of international students like Chinese students. The objective of this study is to determine the prevalence of depression, examine potential risk factors for depression among international students of this campus and at last, recommend potential interventional measures to alleviate the stressful life event. This cross-sectional study was carried out among Chinese students in 2007. A Self-administered questionnaire was sent to them by mail. Levels of depression were measured with the Center for Epidemiologic Studies Depression Scale (CES-D). More Chinese students were psychologically distressed (51.5%) in comparison to non-Chinese students (36.8%).

**Keywords:** Chinese students, non-Chinese students, depression, Hokudai Students Health Center, Hokkaido University

### Introduction

Foreign students face difficulties in adapting new environment than the native students making them more susceptible to stress. Stress is any uncomfortable "emotional experience accompanied by predictable biochemical, physiological and behavioral changes"<sup>1</sup>. Untreated chronic stress can result in serious health problems. Particularly stress during education can lead to mental distress and have a negative impact on cognitive functioning and learning<sup>2</sup>.

Origin of stress could be related with income level, study and other life issues. For the students it could be related with examination and can be exaggerated by staying foreign. International students can encounter many problems upon arrival to a foreign country as they adjust to new surroundings. Most commonly reported difficulties they experience include language barriers, academic demands, homesickness, loss of social support and status, decreased self-esteem, lack of study skills and lack of assertiveness<sup>3,4</sup>. Research findings suggest that if international students fail to adjust to new, challenging, and

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diverse demands, they undergo high levels of loneliness, depression, and increased physical and mental health issues<sup>5</sup>. Once they adapt to the new demands and roles of the new culture, international students are likely to have better academic performance and better psychological stability.

Sandhu<sup>6</sup> argued that the psychosocial distress can include two major types of factors. One is associated with intrapersonal issues rooted in within self and the other type involves more external factors such as environment and cultural milieu. In general, both types interact and combine with each other. Intrapersonal distress includes profound sense of loss, sense of inferiority and sense of uncertainty, perceived discrimination, threat to cultural identity, mistrust, perceived hatred. Interpersonal stressors are associated with communication barriers, culture shock, loss of social support system, academic overload and different educational expectation<sup>7,8</sup>.

Sandhu's factor analysis of intrapersonal stressors revealed that international students perceived discrimination and alienation as the most stressful. Obvious discriminations can be rarely seen on campuses. It is assumed that "more international students suffer from difficulty of strangeness and sensitive students may interpret social distance as racial discrimination"<sup>9</sup>. Perceived discrimination was also reported to be more serious among international students than immigrant students<sup>10</sup>. Research findings report that perceived discrimination causes increased stress, more identity conflict, less academic satisfaction, and greater psychosocial and socio-cultural adjustment issues<sup>11</sup>.

Due to increased number of Chinese students, they might be in better emotional status than that of other international students. This study is to determine comparatively the prevalence of depression among Chinese and non-Chinese students of the campus and to find out factors associated with it.

## **Materials and Methods**

This cross-sectional study was carried out among foreign students who attended Hokkaido University on 2007. All participants within Sapporo campus of Hokkaido University were sent a self-administered questionnaire by mail. A set of questionnaire that contains 74 questions was developed in both English and Japanese languages and this self-administered questionnaire was sent to the foreign students by mail. Prior to the actual survey, the questionnaire was pre-tested with 34 students. Demographic data that were collected include age, gender, source/s of income, marital and family status, country of origin, duration of stay in Japan and Hokkaido University, race/ethnicity, educational level, and Japanese language ability. The questionnaire included eight categories and covered the following areas: general information, educational background, health needs, health practices, use of HSHC, knowledge of the health system and insurance systems of Japan, mental health, and housing conditions.

The demographic data of the study participants were classified as follows: Living status (living alone, or living with family or friend/s); educational level (Doctorate, Masters, or Bachelor's degrees); source of income (Monbukagakusho [MEXT] or non-MEXT); faculty distribution (Science [includes Agriculture, Dental Medicine, Engineering, Environmental Earth, Fishery, Medicine, Pharmacy, Science, and Veterinary Medicine] or Arts [Economics, Education, Information, Law, and Others]). The CES-D is a 20-item, 4-point (0=disagree, 1=partly disagree, 2=partly agree, 3=agree), Likert type instrument that serves as a preliminary screening for depression. The total score for the CES-D is the sum of the numerical values for each of the items endorsed. The range of scores is 0 to 60, with higher scores indicating more frequently reported depressive symptoms. Scores of 16 or higher on the CES-D are considered as a case of depression. A 4-point Likert scale was used. Each item has four scored responses, from "rarely" or "none of the time" (0) to "most" or "all of the time" (3). We used reliable both the English and Japanese versions of the CES-D<sup>12, 13</sup>.

This study is a joint activity of the Graduate School of Medicine and the International Student Center of Hokudai. Approval of the Ethics Committee of the University was secured before the survey was conducted. The opening letter of the questionnaire included a clear explanation of the study objectives and reassured the participants regarding confidentiality of information. Contact address and phone numbers were included in cases where participants needed further information with regard to the study. Study participants were asked to return the anonymous questionnaire for data encoding and analysis. To minimize human error, the data encoders worked in pair so they can check on each other's work. Encoders took turns in encoding the data. The subjects' demographic data were cross-tabulated with their scores on the CES-D. The Chi-square test was used to evaluate the statistical significance between the participants' demographic data against depressed or non-depressed states. A p value <0.05 was considered statistically significant. To adjust for the confounding effects of other variables on the responses of the subjects, logistic regression analysis was applied. Data were tabulated and analyzed using SPSS.

## Results

Among the 480 participants (response rate=66.1%), 166 (34.6%) were Chinese. As shown in Table 1, among both of Chinese and non-Chinese students, number of students with age <29 were higher (75.9%, and 50.4%, respectively), majority were single (71.7% and 56.5%, correspondingly), living alone (63.9% and 54.8%) and duration of stay were < 5 years (70.1%, and 82.4%, respectively). Interestingly, compared to male students (43.4%), numbers of female students (56.6%) were higher among the Chinese although numbers of male students were two times higher (male 68.2%, female 31.8%) among the non-Chinese students.

Most of Chinese students were privately-funded (77.6%) and belonged to the Arts faculties (54.2%). On the other hand, the majority of non-Chinese was MEXT scholars (62.1%), belonging to Science faculties (76.5%) (Table 1).

**Table 1: General characteristics of Chinese and non-Chinese students, Hokudai**

<b>Characteristics</b>	<b>Total f (%)</b>	<b>Chinese f (%)</b>	<b>Non- Chinese f (%)</b>	<b>OR (95% CI)</b>	<b>p value</b>
<b>Gender</b>					
Male	250(58.5)	72(43.4)	178(68.2)	0.357***	0.001
Female	177(41.5)	94(56.6)	83(31.8)	(0.239-0.534)	
<b>Age</b>					
<29	257(60.3)	126(75.9)	131(50.4)	3.102***	0.001
≥29	169(39.7)	40(24.1)	129(49.6)	(2.016-4.772)	
<b>Civil status</b>					
Single	266(62.4)	119(71.7)	147(56.5)	1.946**	0.002
Others <sup>1)</sup>	160(37.6)	47(28.3)	113(43.5)	(1.282-2.954)	
<b>Living Status</b>					
Alone	249(58.3)	106(63.9)	143(54.8)	1.458	0.064
Others <sup>2)</sup>	178(41.7)	60(36.1)	118(45.2)	(0.978-2.174)	
<b>Duration of Stay in Japan</b>					
<5 years	332(77.6)	117(70.1)	215(82.4)	0.501**	0.003
≥5 years	96(22.4)	50(29.9)	46(17.6)	(0.316-0.793)	
<b>Main source of income</b>					
MEXT <sup>3)</sup>	194(46.4)	37(22.4)	157(62.1)	0.177***	0.001
Non-MEXT <sup>4)</sup>	224(53.6)	128(77.6)	96(37.9)	(1.113-2.76)	
<b>Faculty</b>					
Arts	151(35.4)	90(54.2)	61(23.5)	3.863***	0.001
Sciences	275(64.6)	76(45.8)	199(76.5)	(2.541-5.873)	

<sup>1)</sup> "Married etc.

<sup>2)</sup> "Withfamily" "Withfriend" etc.

<sup>3)</sup> Scholarship from Ministry of Education, Culture, Science and Technology.

<sup>4)</sup> Scholarship from Private institutions in Japan or other countries, part time job, family support.

**Table-2: Health-related conditions and practices, and housing facilities of Chinese and non-Chinese students, Hokudai**

<b>Characteristics</b>	<b>Total f (%)</b>	<b>Chinese f (%)</b>	<b>Non- Chinese f (%)</b>	<b>OR (95% CI)</b>	<b>p value</b>
<b>Psychologically distress</b>					
Yes	182(42.5)	86(51.5)	96(36.8)	1.825**	0.003
No	246(57.5)	81(48.5)	165(63.2)	(1.230-2.707)	
<b>Smoking</b>					
Yes	47(11.1)	12(7.2)	35(13.5)	0.499*	0.044
No	378(88.9)	154(92.8)	224(86.5)	(0.251-0.991)	
<b>Alcohol beverages</b>					
Yes	239(56.4)	89(53.9)	150(57.9)	-0.851	0.421
No	185(43.6)	76(46.1)	109(42.1)	(0.574-1.261)	
<b>Regular exercise</b>					
Yes	309(73.0)	105(63.6)	204(79.1)	0.463***	0.001
No	114(27.0)	60(36.4)	54(20.9)	(0.299-0.717)	
<b>Eats breakfast</b>					
Yes	382(89.9)	149(89.8)	233(90.0)	0.978	0.946
No	43(10.1)	17(10.2)	26(10.0)	(0.513-1.864)	
<b>Concerns with nutrition</b>					
Yes	388(91.3)	151(91.0)	36(91.5)	0.934	0.847
No	37(8.7)	15(9.0)	22(8.5)	(0.470-1.858)	
<b>Type of housing facility currently living</b>					
Public	85(21.9)	31(21.1)	54(22.4)	0.925	0.761
Private/ Others	303(78.1)	116(78.9)	187(77.6)	(0.562-1.524)	
<b>Current housing facility</b>					
Comfortable	326(77.1)	114(69.5)	212(81.9)	0.505**	0.003
Non-Comfortable	97(22.9)	50(30.5)	47(18.1)	(0.320-0.800)	
<b>Type of housing facility preferred to live in</b>					
Public	218(62.8)	105(80.2)	113(52.3)	3.681***	0.001
Private/ Others	129(37.2)	26(19.8)	103(47.7)	(2.220-6.103)	

Significantly more Chinese students were psychologically distressed (51.5%), lived in less comfortable houses (69.5%), and few engaged in regular physical activities (63.6%) than non-Chinese (36.8%; 81.9%; 79.1% respectively) (Table 2).

## **Discussion**

This study analyzed the condition of foreign students of Hokkaido University comparing the status of Chinese and Non-Chinese students. Studying abroad as well as adapting to a foreign land is challenging for foreign students. They come from different cultural backgrounds with different language, beliefs and values. Chinese students are no exception. Researchers found that foreign students from Asian countries including China experience more acculturative stress than European students<sup>14</sup>. They cannot maintain smooth communication with physician or health service provider. Stress is part of students' existence especially in a foreign country and can impact how students cope with the demands of college life.

Feeling of isolation and perceived discrimination could be more problematic for the minority students' groups<sup>7</sup>. However, although Chinese students were the majority of the international students and we hypothesized that they should be in better psycho-social status; however, this study revealed the reverse. Majority of the Chinese students was found to be psychologically depressed. This study showed that economic factors rather than intrapersonal factors playing significant role to create depression.

The pressure of increasing cost of living in Japan may cause non-MEXT Chinese students to look for alternative sources of income. This could add further anxiety to their academic difficulties, unfamiliar Japanese ways, as they adjust to new environment. This would also explain why they opt to live in inexpensive and uncomfortable houses, and perform less physical exercise than other foreign students. To improve the health conditions of Chinese students, special attention to their economic difficulties, health promotion, and social integration should be given due concern. To achieve a healthy environment, wider availability of health-related materials in Chinese language should be ensured. Concerning financial difficulties for students, it is better to find grants or other supports for foreign students and encourage the commercial companies to support them. The needed economic support may necessitate the assistance of both the University and the Governments of China and Japan.

International students help their classmates to broaden their world perspective<sup>8</sup>. They also contribute to the country where they live. In a study done by department of commerce, USA it has been shown that international students brought over \$ 13 billion dollars to US economy in terms of tuition fees, living expenses and related costs<sup>9</sup>. Additionally, international students can help develop positive relations between their home countries and Japan<sup>10</sup>. In terms of law and order, Japan is considered as one of the safe country in the world. Rates of crime to the ladies like rape is lower in Japan compared to other countries<sup>15</sup>. That could be a reason of increasing number of female students among the Chinese international students.

## **Conclusion**

This study revealed the higher depressive distress rate among the Chinese students due to financial constraints and emphasizes better care of Chinese and International students not only for the humanitarian ground but also for the sake of long term socio-economic

interests of Japan. The existing health education, health promotion and disease prevention programs of Hokudai Students Health Center (HSHC) of international students should be geared up.

### References:

1. Baum A. "Stress, Intrusive Imagery, and Chronic Distress," *Health Psychology* 1990; 6, pp. 653-675.
2. Saipanish R. *Stress among medical students in a Thai medical school. Med Teacher* 2003; 25 (5):502–6.
3. Pederson PB. *Counseling international students. The Counseling Psychologists* 1991; 19, 10-58.
4. Poyrazli S, Arbona C, Nora A, McPherson R, Pisecco S. *Relation between assertiveness, academic self-efficacy, and psychosocial adjustment among international graduate students. Journal of College Student Development* 2002; 43(5), 632-642.
5. Pederson PB. *The five stages of culture shock. Westport, CT: Greenwood Press* 1995.
6. Sandhu DS. *An examination of the psychological needs of the international students: Implications for counseling and psychotherapy. International Journal for the Advancement of Counseling* 1994; 17, 229-239.
7. Sandhu DS, Asrabadi BR. *Development of an acculturative stress scale for international students: Preliminary findings. Psychology Reports* 1994; 75, 435-448.
8. Bois CD. *Foreign students and higher education in the United States. Washington, D.C.: American Council on Education* 1956; p 47.
9. Sadowsky GR, Plake BS. *A study of acculturation differences among international people and suggestions for sensitivity to within-group difference. Journal of Counseling and Development* 1992; 71, 53-59.
10. Pak AW, Dion KL, Dion KK. *Social psychological correlates of experienced discrimination: Test of the double jeopardy hypothesis. International Journal of Intercultural Relations* 1991; 15, 243-254.
11. Chabrol H, Montovany A, Chouicha K, Duconge E. *Study of the CES-D on a sample of 1,953 adolescent students. Encephale* 2002; 28: 429-432.
12. Radloff LS. *The CES-D Scale: a self-report depression scale for research in the general population. Appl Psych Meas* 1977; 1: 385-401.
13. <http://opendoors.iienetwork.org/> Retrieved 2005 February 27.
14. Yeh C, Inose M. *International students' reported English fluency, social support satisfaction, and social connectedness as predictors of acculturative stress. Counseling Psychology Quarterly* 2003;16, 15-28.
15. *Crime in Japan. Available at, [http://en.wikipedia.org/wiki/Crime\\_in\\_Japan](http://en.wikipedia.org/wiki/Crime_in_Japan). Accessed on, 2011; March 11.*