

Differences between Japanese and Chinese university students in subjective well-being: Research on self-esteem and consciousness as to control over health

日中大学生の主観的健康感比較-自尊感情および健康統制感に関する調査から-

Akiko I. Yokoo, Mika S. Takeuchi, Long Yue and Masao Suzuki

<Abstract>

In this study, self-esteem, quantified using the self-esteem scale (SES), subjective well-being, quantified using the subjective well-being inventory (SUBI), and recognition of control over one's own health, quantified using the health-locus-of-control scale (HLC), in young people, were investigated by comparing Japanese and Chinese university students.

The analysis was carried out with data from 146 Japanese students, consisting of 84 and 62 males and females, and 140 Chinese students, consisting of 54 and 86 males and females.

Pearson's correlation coefficients were calculated between the SES scores, SUBI subscale scores, and HLC subscale scores, for the Japanese and Chinese students, and numerous significant correlations were found between the SES and SUBI subscales. The correlation between the support-from-family SUBI subscale score and the SES score was especially high. In Japanese students, the general-happiness-and-satisfaction SUBI subscale score showed significant correlations with the support-from-family HLC subscale score, and the social-support-networks HLC subscale score, whereas in Chinese students a weak correlation was found between SUBI_Happiness and the belief-in-fate-and-inability-to-prevent-events HLC subscale score. The SES score with Japanese students was significantly lower than with Chinese students.

本研究では、青年期の自尊感情(SES)と主観的健康感(SUBI)、健康についての自己統制の認知(HLC)について、日本と中国の大学生の比較を通して検討した。具体的には学生自身の主観的健康感と健康に関する自己統制感、およびそれらに作用する自尊感情の要因としての効果を比較検討する。日本人大学生146名(男性84名女性62名)と中国人大学生140名(男性54名と女性86名)のデータを解析した。

日本と中国の学生の自尊感情(SES)得点、主観的健康感(SUBI)下位尺度得点、健康統制感(HLC)下位尺度得点間でピアソンの相関係数を算出した結果、自尊感情と主観的健康感下位尺度間に多くの有意な相関が示された。具体的には、日中ともに「家族からのサポート」は「自尊感情」との相関が特に高かった。日本人学生は「幸福感」と健康状態の原因を家族

の支援にあると考える健康統制感」に有意な相関を示したが、中国人学生では「幸福感」と「健康状態の原因は運によると考える健康統制感」の間に弱い相関が示された。また、日本人学生の自尊感情得点は中国人学生よりも有意に低いことが示された。

〈Key Words〉

Subjective well-being, health locus of control, self-esteem, Japanese and Chinese university students.

主観的健康感, 健康統制感, 自尊感情, 日中大学生

I. Introduction

In global terms, Japan is now recognized as a long-lived country, that is, a country where people have a long life expectancy. This is due to the improvement and maintenance of the living environment that has been carried out since World War II, and also endeavors on the part of medical and other personnel, which, although still incomplete and continuing, have made primary medical care and health education available and accepted throughout Japan. On the other hand, Japan is currently experiencing an increase in medical conditions that present major problems for resolution in both their physical and mental aspects, including lifestyle-related diseases starting at younger ages, increased rates of depression and other mental disorders, and the nationwide spread of cases of hikikomori, which is a specifically Japanese type of social withdrawal affecting adolescents and young adults(Miyake and Okamoto, 2015). A rather perverse characteristic of Japan is thus that, while it continues to be a long-lived country, the general levels of the sense of health and happiness of Japanese people in their daily lives are suppressed. This area needs to be investigated in detail by comparing with other developed countries.

From the point of view of “health” encompassing a wide range of meanings, including both mental and physical condition, and also satisfaction with one’s life as a whole, measures to increase the basic level of consciousness of and knowledge about health on the part of Japanese people, and also supportive measures to enable individual people to foresee having control over the situations in which they find themselves, and thus to achieve a sense of health, are now important requirements for the Japanese health and medical administration system, and for organizations involved with fundamental education about health.

It is not easy to define the word “health” (Hasegawa, 2007; Sonoda, 1995). Previous research has shown that the concept of “health” used by health psychologists is not identical to the view of health understood by the general population (Ikuma and Zhang, 2000). In Japan’s current situation, which is somewhat perverse in terms of longevity versus sense of health, as discussed above, in

order to attempt fundamental improvement of Japanese people's social and mental health, there is a need for models and evidence as support, or, in other words, a need for fundamental and multi-faceted data. Furthermore, the items of evidence must be revised sequentially. In concrete terms, there is a need to achieve a common understanding about the fundamental factors affecting sense of health, in particular individuals' own satisfaction with their health statuses in their daily lives, and their recognition of ego involvement, and sense of having personal control, in dealing with their own situations. There are also a major need for data as indices of the self-esteem which support these areas.

In response to the above requirements, Sell and Nagpal (1992) suggested that the concept of "subjective well-being" suggests the need to work toward methods that systematically evaluate an individual's life satisfaction, happiness, health image, and image of capacity for personal growth.

1. Subjective well-being and health causal attribution

Sell and Nagpal (1992) have put forward the following four factors for understanding subjective well-being: (i) overall satisfaction with one's life and lifestyle; (ii) social support, that is, whether one has friends and/or relatives near at hand who will help when problems happen; (iii) subjective physical symptoms; and (iv) mental instability.

Horike (1991) has emphasized the need, when considering promotion of social health, in relation to health and disease, to evaluate each individual's personal recognition of control over health, and theory of causal attribution, leading back to consideration of his/her personal belief system. In particular, in the clinical context, understanding a patient's belief system with respect to health makes it possible to select an individual therapeutic approach suitable for that patient.

Previous research fields that treat the subjective well-being as a health indicator are psychology, sociology, gerontology, medicine, public health, nursing science, etc. However, its history is shallow, and it is expected to accumulate research on the reproducibility and reliability of the subjective well-being as a health indicator. (Okado et al., 2000).

2. Do Japanese university students have low sense of health and low self-evaluation?

According to the White Paper on Students' Health, 2005, which summarized reports of surveys relating to sense of health on the part of Japanese students, although 83.8% of participants responded, in relation to their own state of health, that their physical health was good, 50.5% responded that they had no confidence of being able to progress in their desired direction, and 44.4% responded that they feel uneasy in some way. These data are from several years ago, but they do provide a glimpse of the troubled situations in which Japanese students find themselves.

One's student years are when one has to confront the developmental tasks of youth, especially establishment of one's own identity. At this age, at the same time as asking internal questions, such as "What am I?", one has to respond to numerous external requirements for human life, such as establishing one's economic and social position, achieving communication techniques in relation to respect and deference between oneself and others, achieving self-confidence about one's position in life, and achieving friendly interpersonal relations to enable warmth and trust with other people. Youth is a time of life when it can be difficult to achieve balance in psychosocial health, and as a developmental stage attention must be paid to the current era, including the background socioeconomic situation (Sota and Okamoto, 2008).

Miura and Aoki (2009) have pointed out that one tends to accept the image of Japanese university students as "blessed youth", with an excellent economic, social and educational environment, and numerous options in life, including the freedom to choose their own routes through life, but it is also essential to pay attention to the internal sense of health of these students, and to re-evaluate that in contrast with people of the same age in other countries.

Fundamentally, one's personal "sense of health" refers to one's individual experience achieved and maintained during one's own daily life, without input from others. One's "view of health", on the other hand, takes many forms, dependent upon background factors such as the era, one's set of values, one's age and developmental stage, the local society, one's culture, and the economic situation. For example, research which compared the views of health of Japanese and Chinese university students showed that the Chinese recognized the close association between health and autonomy and psychological factors more than the Japanese did, whereas the Japanese recognized the close association between health and physical factors more than the Chinese (Ikuma and Zhang, 2000). In addition, responses to questionnaires showed that in the case of Japanese students there was a positive correlation between awareness about exercise, and mental health, whereas no such association was found with Chinese students (Hashimoto, Ko, Fujinaga and Lutz, 2008). Furthermore, several cross-cultural studies have shown differences in views of health between Chinese and Japanese university students. Although Japan and China are both within the East Asian cultural sphere, and have ancient historic links, they have major differences in terms of historic backgrounds, social systems, and economic conditions. Taking into account the fact that the populations of both China and Japan are at numerous different economic levels, it is certain that, as background factors responsible for one's view of health, attention must be given to the numerous individual, regional and national differences in belief systems about who one should be or how one should behave, and about lifestyles.

3. Research Objectives

In this study, self-esteem, sense of subjective well-being, and recognition of personal control over health, during youth, were compared between Japanese and Chinese university students. In concrete terms, a comparative investigation of subjective well-being and recognition of personal control over health, on the part of the students themselves, and the self-esteem factors affecting these, was carried out.

For the present report, “view of health” is defined as an individual’s values and standards in relation to health; and “sense of health” is defined as his/her personal level of health as felt subjectively.

II. Methods

1. Survey population

Questionnaire responses were received from a total of 732 students, 182 of whom were enrolled at universities in the Tokyo metropolitan area, and 550 of whom were enrolled at universities in Jinzhou, Dalian or Shenyang, in China. The numbers of males and females were 259 and 258, respectively, and 215, not classified by sex, did not give valid responses. The mean age (\pm SD) was 22.13 ± 6.578 years. After exclusion of data relating to invalid responses, including empty questionnaire boxes, the analysis was carried out with data from 146 Japanese students, consisting of 84 and 62 males and females, respectively, with a mean age of 20.42 ± 2.14 years; and 140 Chinese students, consisting of 54 and 86 males and females, respectively, with a mean age of 22.9 ± 6.46 years.

2. Survey methods

The items included in this survey were evaluated in standardized manner on the basis of the results of previous research. In order to carry out the Chinese survey with preparation of the questionnaire in parallel with the Japanese version, a Chinese version of the questionnaire with the same contents as the Japanese version was prepared by translation. Translating and checking of the questionnaire were carried out by a Chinese postgraduate student whose native language was Chinese and who had no difficulties with daily conversation in Japanese, and by a Japanese researcher who understood Chinese. Back-translation was not carried out, because, even if it had been, detailed differences in expression between Chinese and Japanese could not, in principle, be ruled out, regardless of the detail of the assessment; in other words, no measures taken could have ruled

out the possibility that differences found between the Japanese and Chinese texts simply show differences between the two languages. However, items in this survey relating to psychosocial health, psychosocial satisfaction, self-confidence, family, friends and medical treatment were written using terms essentially applicable to the daily living environments in the two countries, and it was unlikely that major differences arose as a result of the translation. Therefore, for this research both the Chinese and Japanese researchers evaluated the translation issues carefully, and it was judged that, during the progress in translation, sufficient care was taken to ensure the consistency of the questionnaires.

The questionnaire survey was conducted from May to August 2005. Before the survey, the following points were explained to the prospective participants:

- (i) No names or signatures were to be entered in the questionnaires.
- (ii) The questionnaires were to be completed by the participants themselves.
- (iii) The participants did not have to respond to any items that they did not wish to.
- (iv) The participants were free to withdraw from the survey while responding.
- (v) Data entry of the responses was to be on a numeric basis.
- (vi) The data entry was to be carried out by specialist personnel charged with the obligation to secrecy, and there was therefore no need for concerns about identification of individual survey participants at any point during the data entry and analysis process.
- (vii) The numericalized data were not to be used for any purpose other than research.
- (viii) Entries were to be made on the front page of the questionnaire (booklet).

The same explanation was repeated orally when the questionnaires were distributed. Only those students who gave informed consent to participation in the survey, on the basis of the above explanation, received questionnaires and returned the responses.

3. Survey items

As basic attributes, questions were asked about nationality, age and sex. The other survey items were as follows:

- (1) SUBI:Subscales of the Subjective Well-being Inventory (Sell and Nagpal, 1992 ; Fujinami, Sonoda and Ono, 1995)

The original question sheet had 40 items, and for each of these one of the following three responses had to be selected: "1. I do not think this very much". "2. I think this to some extent". "3. I think this very much"

Items 14, 27 and 29 in the Japanese version of SUBI were related to the participant's spouse and children, and these were omitted from this survey, as it was expected that most university students

would not be married. There were therefore 37 SUBI items in the questionnaire. In order to compare Japanese and Chinese students' sense of health, the selection rates were made consistent between the two countries after the survey was carried out, and factorial analysis was carried out after exclusion of items showing bias.

(2) SES-a: Self-Esteem Scale a (Rosenberg, 1965; Yamamoto, Matsui, Yamashiro, 1982)

The SES-a quantifies self-esteem, and evaluation of one's personal value, rather than one's sense of inferiority or superiority in comparison with others. The question sheet had 10 items, including reverse-scored items, and for each of these the participant selected one response from five in a sequence from "1. Strongly disagree" to "5. Strongly agree". For the total of 10 items, the range in scores was thus from 10 to 50. This scale was termed the SES-a to distinguish it from Self-Esteem Scale b (SES-b), with 23 items, detailed below.

(3) SES-b: Self-Esteem Scale b (Janis and Field, 1959; Endo, 1992)

With SES-b, participants' feelings about their own capabilities and values were quantified, primarily on a face-to-face basis. The question sheet had 23 items, including reverse-scored items, and for each of these the participant selected one response from five in a sequence from "1. Hardly ... at all" to "5. Extremely ...". For the total of 23 items the range of scores was thus from 23 to 115. Higher scores indicated more positive feelings about oneself.

(4) J-HLC: Subscale of the J-Health Locus of Control (Wallston, Wallston and Devellis, 1978; Horike, 1991)

For the J-HLC, the participant is questioned as to how he/she controls his/her own health and ill-health/illness, thus drawing out information about that individual's belief system and causal attribution style in relation to health. For each individual, his/her causal explanation and beliefs about the causes of disease and specific health conditions were determined, using a scale with 25 items. For each item, the participant selected one response from six in a sequence from "1. I do not think this at all" to "6. I think this very much". Horike (1991) previously extracted the following five subscales: I: internal; F: family; Pr: professional; C: chance; and S: supernatural. In this research, in order to evaluate the health images of Chinese as well as Japanese university students, measures were taken, as detailed below, to make the selection rates for the responses consistent between the two countries, and items with major biases in this respect were excluded, after which the compositions of the subscales were reassessed, and the associations between variables were confirmed.

4. Procedures for handling response rate biases and no-response samples

For comparison between Japan and China, the selection rates in the two countries were made consistent, and items showing bias were excluded. After verifying the selection rate distributions for the two countries, items showing rates of 80% or more, for specific choices were excluded from the procedure for factorial analysis to investigate the subscales.

Item nos. 1, 22 and 26 in the Japanese version of the SUBI (WHO, 1992) were excluded from this survey due to bias being found in the response rates. In addition, two items were excluded because they related to participants' family members such as spouses and children, and were therefore considered to be inapplicable to a survey of university students. Therefore, the total number of SUBI items excluded from this analysis was five, these being nos. 1, 14, 23, 27, 28 and 29 in the WHO's original version.

In the J-HLC (Horike, 1991) also, bias in the common selection rates in China and Japan was found, and item nos. 9, 10, 11, 15, 16, 17 and 21 were therefore excluded from the analysis.

III. Results

1. Exploratory factorial analysis of SUBI and J-HLC, and extracted subscales

Subscales with Cronbach's α reliability coefficients within ranges enabling acceptance were extracted for each survey scale, as detailed below ($\alpha = 0.477$ to 0.839).

2. SUBI subscales

The following subscales were used: psychosomatic and physical disorder (SUBI_I_Psychosom), support from family members (SUBI_II_Family), tendency to be upsetting (SUBI_III_Upset), and general happiness (SUBI_IV_Happiness).

3. J-HLC subscales

The following subscales were used: attribution of causality to fate (J-HLC_I_Fate), attribution of causality to social support (J-HLC_II_SS), trust in and reliance on medical professionals (J-HLC_III_MedPr), supportive family (J-HLC_IV_Family), and coping by oneself (J-HLC_V_Self).

Table 1 Extracted factors from factor analysis with varimax rotations for each survey scale, contribution and Cronbach's α

Scales	Fator	Variables	Factor names	Contribution(%)	Cumalative contribution(%)	Cronbach's α
SUBI -	I	SUBI_I_Psychosom	psychosomatic	6.599	6.599	0.727
	II	SUBI_II_Family	support from family	6.221	12.820	0.703
	III	SUBI_III_Upset	upsetting	6.195	19.015	0.723
	IV	SUBI_IV_Happiness	general happiness and satisfactio	5.832	24.847	0.713
J-HLC -	I	JHLC_I_Fate	belief on fatal and cannot prev	11.812	11.812	0.823
	II	JHLC_II_SS	social support networks	8.994	20.807	0.839
	III	JHLC_III_MedPr	medical professionals	8.262	29.068	0.670
	IV	JHLC_IV_Family	support from family	7.131	36.199	0.638
	V	JHLC_V_Self	coping by one-self	5.103	41.302	0.477

Subjective Well-Being Inventory (SUBI; WHO, 1992): Item nos. 14, 27 and 29 in the Japanese version were omitted from the point of view of goodness of fit to the target population, and item nos. 1, 22 and 26 were omitted due to * biases in the response rates. The omitted items were equivalent to item nos. 1, 14, 23, 27, 28 and 29 in the WHO's original version.

Japanese version of the health-locus-of-control scale (J-HLC; Horike, 1988): Item nos. 9, 10, 11, 15, 16, 17 and 21 ** were omitted because of biases in the response rates.

4. Comparison of correlations between SES-a, SES-b, SUBI and J-HLC scales between Japan and China.

The Pearson's correlation coefficient between Japanese and Chinese students was calculated for the SESa and SES-b scores, and the SUBI and J-HLC subscale scores. The results of analysis showed that there were numerous significant correlations between the SES-a, SES-b and SUBI subscales. In the case of SUBI_II_Family in particular, the correlation with SES-b in Japanese students was very high ($r = 0.710$; $Pr. = 0.000$), and there was also a correlation with SES-a ($r = 0.578$; $Pr. = 0.000$). These subscales also showed high correlations with SES-a and SES-b in Chinese students, as follows: SES-a and SUBI_II_Family: $r = 0.563$; and $Pr. = 0.000$; and SES-b and SUBI_II_Family: $r = 0.546$; and $Pr. = 0.000$.

With respect to correlations between SUBI and J-HLC in Japanese students, SUBI_IV_Happiness was found to correlate with J-HLC_IV_Family ($r = 0.359$; $Pr. = 0.000$), and with J-HLC_II_SS ($r = 0.342$; $Pr. = 0.000$). In Chinese students, on the other hand, the only correlation found was a weak negative one between SUBI_IV_Happiness and J-HLC_I_Fate ($r = -0.233$; $Pr. = 0.006$).

Table 2 Correlations between Japanese and Chinese students: subscale scores of the Self Esteem Scale, Subjective Well-Being Inventory, J-Health Locus of Control scale

Nation	Variable No.	Scales	Variables	1 <i>r</i> **	2 <i>r</i> **	3 <i>r</i> **	4 <i>r</i> **	5 <i>r</i> **	6 <i>r</i> **	7 <i>r</i> **	8 <i>r</i> **	9 <i>r</i> **	10 <i>r</i> **	
Japanese	1	Self-Esteem	SE Sa											
	2		SE Sb	0.692	0.000									
	3		SUBI_I_Psychosom	-0.351	0.000	-0.434	0.000							
	4	Subjective Well-Being	SUBI_II_Family	0.578	0.000	0.710	0.000	-0.481	0.000					
	5		SUBI_III_Upset			-0.297	0.000	0.321	0.000	-0.316	0.000			
	6		SUBI_IV_Happiness	0.579	0.000	0.398	0.000	-0.357	0.000	0.328	0.000			
	7	Health Locus of Control	JHLC_I_Fate			0.175	0.000							
	8		JHLC_II_SS	0.212	0.000			0.342	0.000					
	9		JHLC_III_MedPr			-0.198	0.000			0.304	0.000	0.340	0.000	
	11		JHLC_V_Self							0.156	0.000	0.246	0.000	0.278
	Chinese	1	Self-Esteem	SE Sa										
2		SE Sb		0.487	0.000									
3		SUBI_I_Psychosom		-0.383	0.000	-0.392	0.000							
4		Subjective Well-Being	SUBI_II_Family	0.563	0.000	0.546	0.000	-0.343	0.000					
5			SUBI_III_Upset			0.237	0.000	-0.261	0.000					
6			SUBI_IV_Happiness	0.340	0.000	-0.213	0.000	0.274	0.000					
7		Health Locus of Control	JHLC_I_Fate	-0.219	0.000	-0.143	0.000	0.186	0.000		-0.233	0.000		
8			JHLC_II_SS											
9			JHLC_III_MedPr							0.339	0.000	0.213	0.000	
10			JHLC_IV_Family							0.196	0.000	0.458	0.000	0.318
11			JHLC_V_Self											

5. Comparison of SES-a, SES-b, SUBI and J-HLC scores in Japan and China by t-tests on mean differences

The self-esteem scores for Japanese students were significantly lower than those for Chinese students, as follows: SES-a: $t(284.00) = -7.442$; and $Pr. = 0.000$; and SES-b: $t(282.76) = -4.841$; and $Pr. = 0.000$. With respect to subjective well-being, the scores for Chinese students were again higher than those for Japanese students, as follows: SUBI_II_Family: $t(284.00) = -6.135$; and $Pr. = 0.000$; and SUBI_IV_Happiness: $t(284.00) = -8.915$; and $Pr. = 0.000$. With respect to J-HLC, on the other hand, the subscale scores were significantly higher for Japanese than Chinese students, and in particular Japanese students showed high scores for J-HLC_I_Fate, which includes the item "I can be healthy owing to good fortune" [$t(283.98) = 7.217$; $Pr. = 0.000$]; and J-HLC_III_MedPr, which includes the item "I can be healthy owing to advances in medicine" [$t(280.61) = 4.784$; $Pr. = 0.000$]; and J-HLC_V_Self [$t(281.92) = 4.505$; $Pr. = 0.000$].

Table 3 t-test between Japanese and Chinese students: subscale scores of the Self Esteem Scale, Subjective Well-Being Inventory, J-Health Locus of Control scale

Variable No.	Scales	Variables	Nation	N	Mean	SD	standard error	F =	Pr. =	t =	df	Pr. =
1	Self_Esteem	SESa_total	Japanese	146	31.33	8.031	0.665	5.002	0.026	-7.442	284.000	0.000
			Chinese	140	37.69	6.286	0.531					
2		SESB_total	Japanese	146	57.83	15.051	1.246	0.118	0.731	-4.841	282.763	0.000
			Chinese	139	66.37	14.747	1.251					
3		SUBI_I_Psychosom	Japanese	146	10.73	2.776	0.230	0.383	0.536	-0.408	281.192	0.683
			Chinese	140	10.86	2.941	0.249					
4	Subjective Well Being	SUBI_II_Family	Japanese	146	14.03	3.339	0.276	7.396	0.007	-6.135	284.000	0.000
			Chinese	140	16.19	2.515	0.213					
5		SUBI_III_Upset	Japanese	146	13.60	2.230	0.185	5.716	0.017	-1.429	284.000	0.154
			Chinese	140	13.94	1.850	0.156					
6		SUBI_IV_Happiness	Japanese	146	9.68	2.407	0.199	8.857	0.003	-8.915	284.000	0.000
			Chinese	140	11.99	1.934	0.163					
7		JHLC_I_Fate	Japanese	146	9.92	3.696	0.306	0.092	0.762	7.217	283.977	0.000
			Chinese	140	6.81	3.576	0.302					
8		JHLC_II_SS	Japanese	146	8.46	2.343	0.194	19.360	0.000	1.365	284.000	0.173
			Chinese	140	8.03	2.962	0.250					
9	Health Locus of Control	JHLC_III_MedPr	Japanese	146	16.19	3.810	0.315	1.735	0.189	4.784	280.607	0.000
			Chinese	140	13.96	4.078	0.345					
10		JHLC_IV_Family	Japanese	146	13.27	3.083	0.255	1.360	0.245	0.667	280.370	0.505
			Chinese	140	13.01	3.313	0.280					
11		JHLC_V_Self	Japanese	146	19.40	3.429	0.284	3.328	0.069	4.505	281.916	0.000
			Chinese	140	17.69	3.016	0.255					

IV. Discussion

Japanese students showed lower self-esteem scores (SES-a and SES-b) overall than Chinese students, which is considered to reflect the actual state of suppression of general happiness and sense of health in Japanese people. In Japan, since ancient times the high value of harmony has been generally accepted, and within group environments such as classrooms the ability to work as a team is prized more highly than the superiority of one's own ability in comparison with other students, and there has been a continuing tendency to regard virtue as involving humility, and severity with respect to one's own position (Ikui, 2015). In addition, there have been reports that, in comparison with other cultural spheres, in Japan there is a marked tendency for people to emphasize a cooperative sense of happiness, rather than one's individual value, with statements such as "I am ordinary", "it was achieved by mutual cooperation", and "I had emotional support from others" (Hitokoto and Matsumi, 2004; Kitayama, Mesquita and Karasawa, 2006). In Japan, it is seen as a taboo from childhood to appeal to one's excellence or superiority, and one has to learn the social skills to suppress one's own emotions so as not to stand out in a classroom group. The learning of tacit understanding from peer communication, and from the behavior of adults in one's neighborhood and family also has major effects.

The present study has confirmed the cultural tendency to low self-esteem scores (SES-a and

SES-b), and also statistically significant low SUBI subscale scores, on the part of Japanese people. Whereas a general characteristic of Chinese students, which is clear at least in comparison with Japanese students, is that their evaluation of themselves, and of their self-attributed satisfaction with health, is promoted but the locus of control of health is suppressed.

A characteristic of the survey group in this study is that, in the case of certain variables, if observations are to be made with a restricted range of scores, it is essential to accumulate more sample data, and thus ensure a precise model extraction. This issue will have to be investigated in future.

With respect to sense of control over health, Japanese students generally understand this as being one's own responsibility, but fate also plays a major part in their understanding, as does relying on medical experts when suffering physical ill-health. It must be said that this means that Japanese students have a strong sense of responsibility for their own health, in the sense of having control over their own health. In addition, when Japanese students do suffer health problems, despite their own control over health, they tend to attribute it to "fate", "chance", etc., thus avoiding both external and internal blame, with no attribution of causal responsibility to either themselves or others, which defends their own low self-esteem. This psychological construction enables students to rely on the techniques of medical experts if necessary.

They generally take a self-affirming position, have a high rate of responding that their own condition is one of well-being (as opposed to "ill-being"), and in the case of family as a factor in their own sense of health, the findings showed that this played a greater role than that given to family by Japanese students.

It was expected that, as Japan and China are both within the East Asian cultural sphere, this survey would show considerable commonality, but on the contrary the findings confirmed numerous differences. It is not unusual for people from non-East-Asian countries to perceive Japan and China as neighboring nations, forming a contiguous cultural sphere, but they do in fact show major differences in terms of social systems, family and household systems, communication styles, consumer cultures, and economic conditions, and these are reflected by the differences in sense of health shown in this research. The various differences are found in background factors relating to lifestyle, and growth and development, probably also have significant impacts on the two countries' students' psychological constructions about sense of health.

The limits of this study are as follows. First, the response rate of the Chinese university students was extremely low. It is considered as one of the causes that the Chinese university students were not used to inventory survey. Second, the area that carried out this investigation is limited. For these reasons, we need carefulness for the generalization of the result. As we mentioned previously,

it is essential to accumulate more sample data, and it is a future problem to examine this result more.

Further survey-based research is required to elucidate the characteristics of the sense of health dependent on psychological, social, economic and cultural background factors in China and Japan. It is to be hoped that in future the opportunities for academic exchange between China and Japan will be established more securely, and the international-exchange environment, enabling continuation of survey-based research sufficient to make useful contributions to health promotion in the two countries, will continue to flourish.

IV. References

- Committee on making white paper on students' health. (2008). White Paper on Students' Health, 2005. Nagoya, Japanese National University Council of Health Administration Facilities.
- Endo, T., Inoue, S., & Araragi, C. (1992). Psychology of Self-esteem. Kyoto, nakanishiyashuppan.
- Hasegawa, M. (2007). The Features of a New Outlook on Health in Contemporary Society. Syukutoku Junior College Bulletin, 46, 61-79.
- Hashimoto, K., Ko, K., Fujinaga, H., & Lutz, R. (2008). Predictive Ability of the Theory of Planned Behavior for Mental Health Outcomes in Japanese vs. Chinese Students, Journal of health science, 30, 27-37.
- Hitokoto, H., & Matsumi, J. (2004). Culture and Cultural Self-Construction. Humanities review, 54(2), 55-70.
- Horike, H. (1991). Japanese Health Locus of Control Scales. In Hori, Y. (Ed.), (2001). Collection of psychological scales 2 (pp.84-89). Tokyo, Saiensusha.
- Ikui, Y. (2015). The Association of Futsu and Maladaptation: A Case Study of a High-School Dropout Woman. Educational Studies, 57, 81-89.
- Ikuma, J., & Zhang, R. (2000). Factor Analytical Approach to the Cognitive Structure of Health Belief: A cross-cultural study of health belief in Japan and China. Memoirs of Shonan Institute of Technology, 34, 137-145.
- Janis, I. L., & Field, P. F. (1959). The Janis and Field Personality: Feelings of Inadequacy. Personality and persuasibility (pp.300-301). New Haven, Yale University Press
- Kitayama, S., Mesquita, B., & Karasawa, M. (2006). Cultural affordances and emotional experience: Socially engaging and disengaging emotions in Japan and the United States. Journal of Personality and Social Psychology, 91, 890-903. doi:10.1037/0022-3514.91.5.890
- Miura, R., & Aoki, K. (2009). Factors related to the mental health of the university student: A review. Archives of Yamaguchi Prefectural University, 2, 175-183.
- Miyake, Y., & Okamoto, Y. (2015). Mental health of university students. Japanese journal of psychosomatic medicine, 55(12), 1360-1366.
- Okado, J., Hoshi, T., Hasegawa, A., Takabayashi, K. and Watanabe, T. (2000). Total Review of Subjective Health and Its Supportive System. Comprehensive Urban Studies, 73, 125-133.

- Rosenberg, M. (1965). *Society and the adolescent self-image*. New Jersey, Princeton University Press.
- Sell, H., & Nagpal, R. (1992). *Assessment of subjective well-being*. New Delhi, World Health Organization.
- Sonoda, K.(1995). Meaning and significance of “new health theory”. In Sonoda, K. & Kawata, C.(Eds.) *Conversion of the health view*(p.5). Tokyo, University of Tokyo Press.
- Sota, N., & Okamoto, Y. (2008). Identity during Adolescence and Adulthood from the Viewpoints of Individuality-based Identity and Relatedness-based Identity. *Graduate School of Education, Hiroshima University*. Part III,57, 195-204.
- Tonan, K., Sonoda, A., & Ono, Y. (1995). Production of The Subjective Well-being Inventory Japanese Edition: It's Reliability and Validity. *The Japanese Journal of Health Psychology*, 8(2), 12-19.
- Wallston, K.A., Wallston, B.S. & Devellis, R.F. (1978). Development of the multidimensional health locus of control(MHLC) scales, *Health Education Monographs*, 6, 161-170. doi: 10.1177/109019817800600107
- Yamamoto, M., Matsui, M. & Yamashiro, Y. (1982). Self-esteem scale. In Hori, Y.(Ed.)(2001), *Collection of psychological scales 1*(pp.29-31). Tokyo, Saiensushya.

Note * 1) All authors contributed equally to the manuscript.

Appendix A.

The Japanese Version of the Subjective Well-being Inventory (SUBI)

1. あなたは人生が面白いと思いますか。
 2. 期待通りの生活水準や社会的地位を手に入れたと思いますか。
 3. これまでどの程度成功したり出世したりしたと感じていますか。
 4. 自分がやろうとしたことは普通やり遂げていますか。
 5. 過去と比較して、現在の生活は幸せですか。
 6. 全体的に見て、ここ数年自分がしてきたことについて、あなたはどの程度幸せに感じていますか。
 7. 物事が思ったように進まない場合でも、あなたはその状況に適切に対処できると思いますか。
 8. 危機的な状況（生活の中でひどく困った事が起きるなど）に出会ったとき、自分が勇気を持ってそれに立ち向かって解決していけるという自信がありますか。
 9. 今の調子でやっていたら、これからおきてくる事にも対応できると思いますか。
 10. 自分が周りと一体化していて、その一部になって働いているという所属感がありますか。
 11. 非常に強い幸福感を感じる瞬間がありますか。
 12. 自分が人類という大きな家族の一員だということに喜びを感じるがありますか。
 13. 非常事態（例えば、火事や盗難にあってもっているものをなくしてしまう、など）が起きた時に、親戚や友達が助けてくれると思いますか。
 14. 自分が重い病気にかかったり事故にあったりしたときに、親戚や友達が世話をしてくれると思いますか。
 15. 物事が期待通りにならないときには、すぐに動揺してしまいますか。
 16. 理由もなく悲しい気持ちになることがありますか。
 17. 敏感でいららしやすいですか。
 18. 強い不安や緊張を感じて悩むことがありますか。
 19. ささいなことでかんしゃくを起こすことがあるのが自分の問題だと思いますか。
 20. 自分の問題を解決するのに、家族が助けになると思いますか。
 21. あなたの家族は一体感が強いと思いますか。
 22. 自分が重い病気にかかったとしたら、家族はよく世話をしてくれると思いますか。
 23. 自分の人生は退屈だとか面白くないと感じていますか。
 24. 将来のことが心配ですか。
 25. 自分の人生には意味がないと感じていますか。
 26. 自分が必要とすれば友達や親戚が助けてくれると思いますか。
 27. 自分が些細なことに対して必要以上に動揺すると思いますか。
 28. 批判されるとすぐに動揺しますか。
 29. 今以上に多くの友達が欲しいと思っていますか。
 30. 本当に親しい友達と会えなくなって寂しいと感じることがありますか。
 31. 自分の健康のことを心配することがありますか。
 32. 体のいろいろな部分が痛みますか。
 33. 胸の鼓動や動悸のために困っていますか。
 34. ひどくめまいがして困っていますか。
 35. 非常に疲れやすいですか。
 36. 不眠のために困っていますか。
 37. 他の人たちと仲良く付き合えないために悩むことがありますか。
-

Appendix B.

The Japanese Health Locus of control Scales(J-HLO)

1. 病気が良くなるかどうかは、周囲の暖かい援助による。
 2. 病気が良くなるかどうかは、元気付けてくれる人がいるかどうかにかかっている。
 3. 病気がどのくらいで良くなるかは、医師の力による。
 4. 病気が良くなるかどうかは、運命にかかっている。
 5. 病気がどのくらいで良くなるかは、時の運だ。
 6. 病気が良くなるかどうかは、家族の協力による。
 7. 健康でいられるには、医学の進歩のおかげである。
 8. 病気がどのくらいで良くなるかは、医者判断による。
 9. 具合が悪くなくても、医者さえいれば大丈夫だ。
 10. 健康でいられるのは、神様のおかげである。
 11. 先祖の因縁などによって病気になる。
 12. 病気がどのくらい良くなるかは、医者の腕しだいである。
 13. 健康でいられるのは、自分しだいである。
 14. 病気になるのは、偶然のことである。
 15. 神仏に供物をして身の安全を頼むと、病気から守ってくれる。
 16. 病気になったのは、うかばれない霊が頼っているからである。
 17. 健康でいるためには、自分で自分に気配りすることだ。
 18. 病気になったときは、家族などの思いやりが回復につながる。
 19. 健康でいられるのは、家族の思いやりのおかげである。
 20. 病気が良くなるかどうかは、自分の心がけしだいである。
 21. 健康でいるためには、よく拝んで先祖様を大切にすることが良い。
 22. 私の健康は、私自身で気をつける。
 23. 健康でいられるのは、運が良いからだ。
 24. 健康を左右するような物事は、たいてい偶然に起こる。
 25. 病気が良くなるかどうかは、自分の努力しだいである。
-