Expression of Depressed Mood: A Comparative Study among Japanese and Canadian Aged People

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Objective: *To investigate differences of expression regarding depressed mood between Japanese and Canadian aged people.*

Method: *The Zung Self-Rating Depression Scale (SDS) was applied to people aged 65 and over in Ohira, Japan, and Steveston, British Columbia, Canada.*

Results: *The number of subjects who filled out the SDS completely was 2180 for the Japanese sample and 183 for the Canadian sample. The mean SDS indexes of the Japanese and the Canadian samples were 44.03 and 44.34, respectively. The Canadian sample showed a higher average score in 11 items out of 20, whereas the Japanese sample showed a higher score on only 4 items. The factor analysis of those samples showed only small differences.*

Conclusions: *The Canadian sample showed a higher average score in more items compared with the Japanese sample. This indicates that Canadian aged people express their depressed moods more clearly and spontaneously than Japanese aged people.*

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Key Words: *self-rating depression scale, Zung, depression, transcultural, community sample*

Murphy and others (1) reported the first cross-cultural surveys of depressive symptomatology in 1963. Cross-cultural study is very important in order to understand or diagnose correctly people from other countries, but there are few studies that survey the differences of depressive symptoms among countries. As far as Japanese are concerned, our literature search revealed only 2 studies that compared depressive symptoms between Japanese and Western people.

Sartorius and others (2) compared symptoms of depressed patients in 5 cities—Basle (Switzerland), Montreal (Canada), Nagasaki and Tokyo (Japan), and Teheran (Iran)—as part of the World Health Organization Collaborative Study using the Standardized Assessment of Depressive Disorders (SADD) structured interview, developed specifically for cross-cultural use. They concluded that the multivariate statistical analyses, although they identified the differences between the centres, reinforced the impression that the groups of patients in the different cities in 4 countries of this study were more similar than dissimilar to one another. Radford and others (3) compared depressive symptoms in Japanese and Australian clinically depressed patients by using the SADD. The results of their study showed there were only small differences in symptomatology of depression between the 2 countries, supporting the hypothesis that depression with its associated symptoms is very similar, although the cultures are vastly different. Contrary to expectation, however, Japanese patients were not more likely to display psychosomatic symptoms than Australian patients, even though many authors

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have stated that non-Western depressed people complain of physical problems more than emotional problems. Sartorius and others and Radford and others used an objective measurement to evaluate differences in depressive symptoms between Japanese and Western people, therefore, but they found only small differences.

The authors have worked together in Vancouver, Canada, at Vancouver Hospital. From our experience interviewing depressed Japanese and Canadian patients, we felt that Canadian patients express their depressed mood more clearly, spontaneously, and explicitly than Japanese patients. We believe that subjective expression can be different even though symptoms are objectively similar. We would like to demonstrate the differences of expression of depressed moods between Japanese and Canadians.

The study was focused on a nonclinical sample of people who are 65 and over and who live in communities. The subjective measurement of depression (the SDS by Zung) was administered.

Methods

Samples

The study samples were obtained in Ohira, Japan, and in Steveston, Canada. Ohira is located in the middle of Japan, close to Utsunomiya city, which has a population of about 450 000. In 1992, the total population of Ohira was 28 140, with 3208 people aged 65 and over (11.4%). Of these 3208 people, there were 3 immigrants, and we eliminated them from the sample. Ohira is a farming area that grows grapes for consumption.

Steveston is located on the west coast of British Columbia, Canada. Steveston is one area of the city of Richmond, which is located next to Vancouver. The population of Vancouver is about 520 000. Richmond has a population of 140 484 and the elderly people (aged 65 and over) comprised 15 463 or 11.0% of the total population in 1991. There were no Native people living in Richmond. Steveston is a fishing community.

Both cities under study are located close to big cities. The working-class character of both cities and the rate of people aged 65 and over were similar. The citizens of Ohira and Steveston represent typical inhabitants of Japan and Canada, respectively.

Japanese Sample. The Japanese survey sample was taken from all the inhabitants of Ohira who were 65 years or over as of June 1, 1992. We obtained the information from the government resident record. In Japan, people are required to report their address to the city office every time they change residence, so the record includes all residents. Zung's SDS questionnaires were distributed to subjects by welfare commissioners and later were collected by them. This SDS survey was one part of a larger study (4) that investigated the prevalence rate of depression and dementia of the aged living in Ohira.

Canadian Sample. The Canadian survey sample was obtained using the British Columbia voters' list for the election of 1993. First, we excluded people who seemed to be Japanese or Japanese Canadian, based on their names. Second, we mailed the SDS to the retired people who lived in Steveston, asking them to mail it back and to indicate their age, sex, and educational level. After receiving the SDS, we chose those aged 65 years and over for our study.

Measures

The SDS was developed in 1965 by Zung (5). The scale contains 20 items that are common symptoms among depressed patients. The subject is asked to rate each of the 20 items as to how it applies to him or her at the time of testing in 4 quantitative terms (none or a little of the time, some of the time, a good part of the time, most or all of the time), which have numerical values of 1 to 4. When the scores for each item were summed, this total score was multiplied by 1.25 to calculate the SDS index. Zung (6) administered the SDS to people who had some mental disorders and to people who were normal in 6 foreign countries and reported the efficacy of the global usage of the SDS. Zung (7) has also reported that the elderly have a higher normal baseline with respect to depressive complaints compared with nonelderly, and the evaluation of depression in elderly patients should take this into consideration. The scale was translated into Japanese, and its validity and reliability were examined by Fukuda (8).

Results

Response Rate

Japanese Sample. We sent the SDS through welfare commissioners to 3205 people and received 3037 in return. The response rate was thus 94.8%. Of 3037 people, 857 left some blanks on the SDS; 2180 (68.0%) of the 3205 recipients filled the SDS out completely.

Canadian Sample. We mailed the SDS to 1804 people, but 317 were undeliverable because of change of address or other reasons. We received 332 responses, 22.3% of 1487 (1804 – 317). Of the 332 people, 110 left some blanks in the SDS, 39 were under 65 years of age, and 183 (12.3% of 1487) people

Table 1. Distribution of sex and age in the Japanese and Canadian samples

	Japanese sample			Canadian sample		
Age range	Male	Female	Total	Male	Female	Total
65 to 69	381	439	820	22	22	44
70 to 74	205	335	540	46	27	73
75 to 79	164	263	427	31	13	44
80 to 84	101	137	238	11	8	19
85 to 89	30	79	109	2	1	3
90 to 94	8	31	39	—	—	—
95 to 99	3	4	7	—	—	—
Total	892	1288	2180	114	72	183

filled the SDS out completely and their age was 65 years or over.

Age and Sex Distributions of the Samples

Table 1 shows the age and sex distributions of both samples. The Japanese sample showed a decrease in the number of people according to age, but the Canadian sample did not show the same trend. Japanese females outnumbered Japanese males, whereas Canadian males outnumbered Canadian females except in the 65- to 69-year-old age group, which had equal gender representation.

Mean SDS Index

The mean SDS index was 44.0 for the Japanese sample and 44.3 for the Canadian sample. There was no statistical difference ($P = 0.6041$; U-test). The mean SDS index by sex was 43.1 for the Japanese male sample, 44.7 for the Japanese female sample, 42.7 for the Canadian male sample, and 46.9 for the Canadian female sample. The Japanese sample showed a statistical difference in the mean SDS index between males and females ($P < 0.0005$; U-test), but the Canadian sample did not show this difference ($P = 0.0612$; U-test). There was no difference in the mean SDS index between Japanese and Canadian male samples ($P = 0.668$; U-test) or between Japanese and Canadian female samples ($P = 0.237$; U-test).

The mean SDS index by age in the Japanese sample was 40.7 for the 65- to 69-year-old age group, 43.7 for those aged 70 to 74, 45.7 for those 75 to 79, 50.2 for those 80 to 84, 48.5 for those 85 to 89, 50.2 for those 90 to 94, and 49.3 for the 95- to 99-year-old age group. In the Canadian sample, the mean SDS index by age was 43.0 for the 65- to 69-year-old age group, 45.2 for those aged 70 to 74, 43.4 for those 75 to 79, 44.3 for those 80 to 84, and 57.9 for those aged 85 to 89. The Japanese sample showed an upward tendency in the mean SDS index according to age in the range of 65 to 84 ($P < 0.0001$; Kruskal-Wallis), but the Canadian sample did not show this trend ($P = 0.379$; Kruskal-Wallis). There were no statistical differences between the Japanese and the Canadian samples in each age group except for the 80- to 84-year-old age group ($P < 0.05$; U-test).

Comparison of Each Item between the Japanese and Canadian Samples

Table 2 shows the comparison of average points in each SDS item between the Japanese and the Canadian samples. The Canadian sample had a statistically higher score on 11 out of 20 items. The Japanese sample had a significantly higher score on only 4 items; there was no statistical difference between the groups on the remaining 5 items. The Canadian sample showed higher scores on the items that represent depressed feeling and vegetative functioning of depression. The Japanese sample showed a higher score in the items that represent cognition.

Factor Analysis

Principal factor analysis was conducted on the SDS questions with a varimax rotation. Three factors were chosen to explain the differences in the structure between the Japanese and the Canadian samples.

The Japanese Sample. Factor 1 had 6 positive items. These items consisted of dissatisfaction 0.76, emptiness 0.75, psychomotor retardation 0.73, personal devaluation 0.72, confusion 0.70, and indecisiveness 0.67. Factor 2 also had 6 positive items. These consisted of crying spells 0.49, fatigue 0.49, irritability 0.47, tachycardia 0.47, depressed affect 0.46, and sleep disturbance 0.45. Factor 1 and factor 2 accounted for 24.3% and 12.3% of total variation, respectively. Factor 3 had one positive item, decreased libido 0.67, which accounted for 5.9% of the total variation.

Table 2. Average score on each SDS item for the Japanese and Canadian samples

SDS items	Japanese	Canadian	P
Items that scored higher in the Canadian sample			
I feel down-hearted and blue	1.20	1.34	< 0.0001
Morning is when I feel the best	1.86	2.14	< 0.0001
I have crying spells or feel like it	1.09	1.13	< 0.05
I have trouble sleeping at night	1.54	1.71	< 0.001
I eat as much as I used to	1.70	2.14	< 0.0001
I have trouble with constipation	1.35	1.54	< 0.05
My heart beats faster than usual	1.22	1.33	< 0.005
I find it easy to do the things I used to	2.07	2.51	< 0.0001
I am restless and can't keep still	1.37	1.49	< 0.0005
I am more irritable than usual	1.26	1.56	< 0.0001
I still enjoy the things I used to do	1.80	1.90	< 0.005
Items that scored higher in the Japanese sample			
I still enjoy sex	3.73	3.08	< 0.0001
I notice that I am losing weight	1.35	1.14	< 0.01
I feel hopeful about the future	2.65	2.18	< 0.0001
I feel that I am useful and needed	2.21	1.83	< 0.005
Items without significant difference between the 2 samples			
I get tired for no reason	1.69	1.72	ns
My mind is as clear as it used to be	1.91	1.90	ns
I find it easy to make decisions	2.19	2.01	ns
My life is pretty full	1.83	1.72	ns
I feel that others would be better off if I were dead	1.20	1.11	ns

The Canadian Sample. Factor 1 had 6 positive items. These items consisted of personal devaluation 0.75, emptiness 0.72, dissatisfaction 0.75, indecisiveness 0.68, depressed affect 0.68, and fatigue 0.66. Factor 2 had 4 positive items. These consisted of crying spells 0.49, sleep disturbance 0.44, tachycardia 0.39, and depressed affect 0.38. Factor 1 and factor 2 accounted for 31.3% and 8.6% of the total variation, respectively. Factor 3 had 3 positive items: weight loss 0.50, constipation 0.50, and decreased appetite 0.50. Factor 3 accounted for 6.5% of total variation.

Comparison of the Factors between the Japanese and Canadian Samples

All factors looked alike between the Japanese and Canadian samples. Factor 1 represents cognition, factor 2 represents anxiety and depression, and factor 3 represents vegetative functioning. The contents of factor 3 were different between the Japanese and the Canadian samples. Factor 3 of the Japanese sample consisted of decreased libido, whereas that of the Canadian sample consisted of weight loss, constipation, and decreased appetite.

Discussion

This study is unique because we used subjective measurement of depression (SDS) in normal subjects and focused on people who were 65 and over. Most researchers use depressed patients rather than the general population, even though Draguns (9) and Marsella (10) state that it is necessary to study both pathological and normal populations in the same culture in order to understand cultural effects on psychopathology. Many authors tended to use objective measurements of depression more than subjective measurements. A combination of objective and subjective measurements is ideal, but it is very hard to administer an objective measurement for a large sample. We chose to use the SDS, therefore, one of the subjective measures of depression.

The people who live in Ohira and Steveston represent typical inhabitants for their respective countries. There is almost no other race in Japan except for the Ainu, who live in the Hokkaido area, a northern part of Japan. We believe that all over Japan, Japanese are very homogenous as a race, especially in the Ohira area. The number of immigrants to Ohira is very small. There are many Natives in Canada, but they do not live in the Richmond area. They tend to live in the northern parts of Canada. The people who live in Canada are basically immigrants from all over the world, but most of them identify themselves as Canadian. They live in Canadian ways, although many also preserve their mother country's ways. When comparing the differences between countries, investigators should ensure the subjects represent typical inhabitants in those countries, because sometimes unique people live in the area under study.

The response rates between the Japanese and the Canadian samples were very different. This may in part be explained by the fact that the investigators had no support personnel in the Canadian arm of the study, whereas the Japanese sample had welfare commissioners who helped us send and gather the SDS. The welfare commissioners are representatives of the residents. It is their responsibility to take care of their allocated neighbourhood in various capacities.

The distribution of age and sex showed differences between the Japanese and the Canadian samples. The number of Japanese respondents in each age group decreased according to age, therefore these respondents should represent the whole population of the aged in Ohira. As the Canadian sample did not show this decrease of population according to age, the Canadian sample may not represent the whole population of the aged in Steveston. The Canadian sample did not show differences in the SDS index across age groups, so the fewer number of people in the 65- to 69-year-old age group does not affect the total results.

Zung and Durham (11) reported that age, sex, marital status, educational level, financial status, and intelligence level did not affect the SDS results, but the SDS scores in our research varied according to sex and age. The differences of sex, age, or other demographic backgrounds may affect the SDS score. Although it is difficult to do so, investigators should choose subjects who have similar demographic backgrounds so that when comparing differences between countries, the differences can be clearly identified.

When we compared the average score of each SDS item between the Japanese and the Canadian samples, the Canadian sample had more items that scored higher than the Japanese sample. This strongly indicates that Canadians tend to express depression more clearly and spontaneously than Japanese. When we examine the content of each item, we see that the Canadian sample showed higher scores in the items which represent feelings of depression and vegetative symptoms of depression, whereas the Japanese sample showed higher scores in the items that represent self-confidence.

The results of principal component analysis did not show differences between the Japanese and the Canadian samples. Each factor of the Japanese and the Canadian samples looked alike. The Japanese sample did not show psychosomatic symptoms in the first factor as Radford and others (3) reported.

In the near future, we will expand this survey to Japanese Canadians. Our hypothesis is that Japanese Canadians are located in the middle, between Japanese and Canadians in their way of expressing depression. We think that cultural circumstances will determine and change their attitudes or expression.

Summary

The mean SDS index did not differ between the Japanese and the Canadian samples. The Japanese sample showed differences in the mean SDS index in sex and in age groups. The Canadian sample did not show these differences. The Canadian sample showed more depressive symptoms that were measured by SDS than the Japanese sample. The factor analysis showed only small differences.

Clinical Implications

- The mean SDS index was not different between the Japanese and Canadian samples.
- Elderly Canadians express their depressed moods more clearly and spontaneously than aged Japanese.
- The Japanese sample did not tend to express depression in physical terms as much as the Canadian sample did.

Limitations

- The method to choose subjects was different between the Japanese and the Canadian samples.
- The response rates between the Japanese and the Canadian samples were very different.
- The sex and age distributions of the samples were different.

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Résumé

Objectifs : *Étudier les différences d'expression de l'humeur dépressive chez les personnes âgées au Japon et au Canada.*

Méthode : *L'échelle d'auto-évaluation de la dépression de Zung (EAD) a été appliquée à des personnes de 65 ans et plus à Ohira, au Japon, et à Steveston (Colombie-Britannique), au Canada.*

Résultats : *Le nombre de sujets ayant rempli l'EAD au complet était de 2 189 dans l'échantillon japonais et de 183 dans l'échantillon canadien. Les index moyens de l'EAD des échantillons japonais et canadien étaient respectivement de 44,03 et de 44,34. L'échantillon canadien correspondait à un score moyen supérieur dans 11 items sur 20, alors que l'échantillon japonais correspondait à un score supérieur dans 4 items seulement. L'analyse factorielle de ces échantillons n'a révélé que de légères différences.*

Conclusions : *L'échantillon canadien correspondait à un score moyen plus élevé dans plus d'items que l'échantillon japonais. Cela signifie que les personnes âgées canadiennes expriment leurs humeurs dépressives plus manifestement et spontanément que les personnes âgées japonaises.*