

Methods and Applications in Mental Health Surveys: The Todai Health Index

edited by Shosuke Suzuki and Robert E. Roberts

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5 Construction of the Life Habits Inventory

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I. INTRODUCTION

Mass health surveys of community residents and their follow-up care have been conducted in order to improve people's general health condition and to prevent such noninfectious chronic diseases as cancer, hypertension (Ohwada et al. 1974), and coronary heart disease (Friedman and Rosenman 1956). Because it is difficult to prevent these diseases at an early stage, it becomes very important to identify causal factors apparent in the daily life of people. Many studies have so far been made of the relationship between life habits and occurrence of disease, especially heart disease (Truett et al. 1967; Haynes et al. 1978). Most of these studies, however, view life habits only in terms of such medical aspects as cholesterol level, hemoglobin content, and so on, while social attitudes and behaviors and/or personal traits are viewed as important factors in the construction of personal life habits and as influencing the occurrence of certain diseases.

Life habits are patterns of human behavior in daily life and include not only habits of food, clothing, and shelter, but also habits of personality and value systems from a psychological point of view. Taking those points into consideration, we designed a questionnaire for the purpose of collecting basic data that may contribute to preserving the "positive" health of people, which includes the prevention of specific diseases and the maintenance of good physical and mental conditions.

In this paper we explain the methodology of our area surveys briefly, the development of the life habits questionnaire, and the reliability of the life habits scales.

II. METHODOLOGY OF SURVEYS

The first survey of life habits was conducted in 1979 in Nakai, Kanagawa prefecture, in which region the death rate from heart disease was about twice the Japanese average at that time. The life habits of the residents were thought to be one of the causes for the high death rate, and we decided to try to clarify what kinds of life habits influenced the disease. The subjects of the initial survey were limited to married women partly because most of the adult men went to work in the daytime and mainly because married women largely determined the family food habits and stayed in the community for a longer time. This first survey, however, proved inadequate for examining the life habits of the residents.

We revised the questionnaire in 1980, adding new questions relating to personality, mental and physical health, and personal values. In selecting items, we referred to the YG-test (Tujioka 1961), THI (Suzuki et al. 1976), and so on. A preliminary survey was conducted on 72 married women living in Tokyo, and Kanagawa, and Chiba prefectures. Based on the results, we compiled a revised questionnaire of 30 scales consisting of 255 items in all. Eleven scales consisted of items on such life habits as "highly salted food intake," "meat and fish intake," and so on. Ten scales consisted of 82 items on such personality and mental and physical health habits as "multicomplaint," "depressiveness," "empathy," and so on. Eight scales consisted of 64 items on such values as "theoretical type," "duty type," and so on. Moreover, a scale concerning intellectual and cultural activities was added; we also gathered such general information on each individual as education, occupation, age, medical history, and so on.

In 1981 we conducted life habits surveys on 1,123 married women living in Nakai, Kanagawa prefecture, and on 1,234 married women living in Nakano, Nagano prefecture. By the use of the Nakai data, we estimated the internal reliability of each scale. The reliability coefficients ranged from 0.538 to 0.866, and the mean value was 0.680. We could moreover obtain useful results concerning the relations among life habit scales and other variables. These outcomes were published in *Japanese Journal of Public Health* in 1982 (Hinohara et al. 1982). The 1981 questionnaire, with 255 questions, was however not so easy to answer. We therefore reduced the number of questions while preserving the reliability based on the results of the earlier two surveys.

For the next revision of the questionnaire, we conducted a preliminary survey in 1982 in Nakai, selecting 164 married women for subjects. Based on the outcomes we compiled a new questionnaire-

—which is the version currently in use—of 23 scales consisting of 195 items in total. Each scale consists of either eight or nine items. We named this questionnaire the “Life Planning Center-Life Habits Inventory” (LPC-LHI). The name derived from the fact that our research was mainly supported by the Life Planning Center Foundation. From the time of the 1982 survey, we have provided feedback of the results to the respondents mainly because we believe that such feedback may play an important role in health education.

We conducted the LPC-LHI survey in Nakai in 1983, 1984, and 1985, and also completed four more in Nakano, Toyama, Sapporo, and Yokohama in 1983. Since 1985 we have tried to apply the LPC-LHI to male samples and to examine the reliability of the life habit scales. We conducted in 1987 a survey of the residents in Shirahama, Chiba prefecture (Saiki et al. 1988), an area where seasonal medical check-ups were conducted on the residents by the regional medical association. Our study was carried out during the health examinations. We are now trying to determine the validity of the LPC-LHI through analyzing and elucidating the relations among the LPC-LHI scales and such biomedical measures such as obesity, blood pressure, cholesterol, and so on collected by medical examination.

III. RELIABILITY OF THE LPC-LHI

The details of our studies, especially the construction of the questionnaire, will now be explained in the context of the statistical methodology.

We first elucidated the reliability of each scale individually, using data that were collected in a 1983 survey for females and in 1985 and 1987 surveys for males. The age distribution of the subjects by region and gender is shown in Table 1. Mean ages were 44.8 years for females and 51.5 years for males.

We used the theta reliability coefficient of each scale to elucidate the internal consistency. Theta reliability coefficients can be estimated by the use of a maximum eigenvalue obtained by principal component analysis with respect to all items of each scale (see Appendix 1).

Each scale name and its reliability coefficient by gender are shown in Table 2. We moreover show the results of principal component analysis applied to items of each scale respectively in the Appendix—therefore the content of each item can be found in Table A2 in the Appendix, section 5.

The scale names were chosen in order to understand easily the content of the scales. The life habit scales are organized into six major

groups: 1) dietary, smoking, and drinking behaviors; 2) general social attitudes and behaviors in daily life activities; 3) physical exercise for health maintenance and promotion; 4) present physical and psychological health conditions; 5) other personal traits; and 6) health perceptions concerning inheritance and diseases.

The scales concerning dietary, smoking, and drinking behaviors are numbered 1 to 7 in Table 2; the reliability coefficients range from 0.678 to 0.765 for females and from 0.643 to 0.792 for males (Table 2).

TABLE 2
Reliability Coefficients of 23 Scales by Gender

Scale	Female	Male
1. Meat and fats	.678	.708
2. Western-style diet	.683	.652
3. Salt	.727	.744
4. Sugar	.691	.707
5. Regular intake of meals	.696	.792
6. Motivation and interest in cooking	.765	.753
7. Alcohol and smoking	.765	.643
8. Entertainment	.502	.486
9. Intellectual and cultural activities	.738	.694
10. Spirit of social service	.733	.716
11. Sense of love and duty	.644	.647
12. Thrift	.502	.528
13. Traditional	.592	.654
14. Personal hygiene	.671	.667
15. Wife-leadership type	.595	.675
16. Exercise	.736	.774
17. Unhealthy	.760	.723
18. Many physical complaints	.789	.760
19. Emotionally unstable	.775	.773
20. Extrovert	.843	.845
21. Sympathetic	.654	.682
22. Voluntary	.725	.732
23. Health perceptions	.559	.585

Note: Data collected from 5,894 adult women (housewives) in 1983 and from 914 adult men in 1985 and 1987.

The scales concerning general social attitudes and behaviors in daily life activities are numbered 8 to 15, with reliability coefficients ranging from 0.502 to 0.738 for females and from 0.486 to 0.716 for males. The "entertainment" and "thrift" scales have lower values than the other scales and thus should be revised to some extent in the near future or eliminated altogether in order for reliable results to be obtained.

The "exercise" scale (no. 16) indicates physical exercise for health maintenance and promotion; its reliability coefficients are 0.736 for females and 0.774 for males.

The scales concerning present physical and psychological health conditions are numbered 17 to 19; their reliability coefficients range from 0.760 to 0.775 for females and from 0.723 to 0.773 for males.

Scales 20 to 22 concern other personal traits, such as social extroversion, sympathetic character, and behavioral extroversion; reliability coefficients range from 0.654 to 0.843 for females and from 0.682 to 0.845 for males.

The "health perceptions" scale (no. 23) indicates concepts about health and disease regarding whether inherited or acquired factors are believed to have greater influence; the reliability coefficients are 0.559 for females and 0.585 for males.

Mean values of all reliability coefficients are 0.688 for females and 0.693 for males.

Although we originally developed the LPC-LHI for females, the results described above show that it also can be applied to males.

We next examined the degree of agreement for each item on repeated surveys. The easiest method for this is to calculate the proportion of agreement on each item. We computed the sum of diagonal numbers of cases over the total number of cases in a cross-table, but because the proportion of agreement is influenced by the chance-expected proportion, we can use the kappa statistic given by Cohen (1960) in order to exclude the chance-expected proportion of agreement. (See Appendix, section 2, for theoretical details.) We used the matched data collected in the 1983 and 1984 surveys of housewives in Nakai, Kanagawa prefecture. We were able to obtain 1,288 housewives for whom data were matched between the two surveys.

The mean proportions of agreement of items by scales, mean kappa statistics, and correlation coefficients of scales for matched data between the two surveys are shown in Table 3. Mean proportions of agreement of items by scales range from 0.624 to 0.938, and the mean value is 0.708. Mean kappa statistics for scales range from 0.346 to 0.508 with high statistical significance, even though significance levels are not shown here. Correlation coefficients range from 0.564 to 0.812, and the mean value is 0.672. These values are almost the same as those for the reliability coefficients of the scales described earlier.

We applied canonical correlation analysis to the same matched data. The method of canonical correlation analysis is explained in the Appendix, section 4. The canonical structure vectors for 23 scales for each survey year for four canonical variables extracted respectively are shown in Table 4. If the different scales have almost the same values as the structure vectors, then the existence of a similar tendency among the scales with regard to the canonical variable is indicated. At first glance it

TABLE 3

Mean Values of Proportion of Agreements (Prop) and Kappa Statistics Concerning Scale Items, and Correlation Coefficients (Cor) for 23 Life Habits Scales between 1983 and 1984 Surveys

Scale	Prop	Kappa	Cor
1. Meat and fats	.700	.408	.647
2. Western-style diet	.689	.442	.698
3. Salt	.699	.438	.735
4. Sugar	.675	.420	.676
5. Regular intake of meals	.769	.403	.686
6. Motivation and interest in cooking	.679	.385	.670
7. Alcohol and smoking	.938	.455	.718
8. Entertainment	.731	.411	.629
9. Intellectual and cultural activities	.698	.402	.687
10. Spirit of social service	.660	.361	.677
11. Sense of love and duty	.698	.384	.616
12. Thrift	.683	.386	.564
13. Traditional	.675	.346	.576
14. Personal hygiene	.797	.462	.623
15. Wife-leadership type	.712	.412	.636
16. Exercise	.709	.399	.680
17. Unhealthy	.750	.508	.757
18. Many physical complaints	.695	.445	.748
19. Emotionally unstable	.638	.374	.694
20. Extrovert	.680	.469	.812
21. Sympathetic	.716	.404	.623
22. Voluntary	.658	.405	.716
23. Health perceptions	.624	.362	.582

Note: Data from 1,288 housewives matched between the two surveys.

seems that similar structures involving the 23 scales exist between different surveys. We therefore conclude that the LPC-LHI delivers consistent measurement and good reliability.

IV. VALIDITY OF THE LPC-LHI

At present we are trying to determine the validity of the LPC-LHI based on the Sirahama project, and we should point out the problems surrounding the evaluation of the validity of the life habit scales.

First, life habits change according to the respondent's experience and shifting circumstances. Therefore it is necessary to choose the specific time at which life habits influence the disease under study.

Second, because data collected by questionnaire depend on the memory and the self-image of the respondent, all we measure is influenced by the present condition of the respondent, especially by the respondent's perceptions concerning physical and mental conditions and

TABLE 4
Canonical Structure Vectors of 23 Scales by Using Data Matched between 1983 and 1984 Surveys

Scale	(1)		(2)		(3)		(4)	
	1983	1984	1983	1984	1983	1984	1983	1984
1. Meat and fats	.067	.043	.173	.124	-.006	-.018	.421	.399
2. Western-style diet	-.015	-.027	.442	.396	-.435	-.428	.499	.480
3. Salt	-.076	-.075	-.045	-.073	.456	.449	.094	.066
4. Sugar	-.088	-.064	.067	.038	-.094	-.097	.301	.284
5. Regular intake of meals	-.037	.009	.042	.054	.025	.005	.321	.348
6. Motivation and interest in cooking	.231	.170	.435	.399	-.183	-.248	.398	.405
7. Alcohol and smoking	.053	.079	.555	.566	.057	.049	-.553	-.523
8. Entertainment	.165	.144	.507	.472	-.115	-.118	.213	.264
9. Intellectual and cultural activities	.278	.280	.445	.402	-.164	-.179	.427	.466
10. Spirit of social service	.237	.199	.403	.406	.329	.257	.331	.371
11. Sense of love and duty	.230	.173	.141	.131	.498	.454	.384	.407
12. Thrift	-.076	-.066	-.219	-.196	.221	.174	.289	.329
13. Traditional	.089	.030	.012	-.048	.310	.229	.425	.501
14. Personal hygiene	-.017	-.076	.458	.456	-.119	-.175	.380	.389
15. Wife-leadership type	.047	.045	.112	.100	.248	.250	.395	.325
16. Exercise	.054	.030	.564	.562	.082	.077	.270	.286
17. Unhealthy	.883	.863	-.143	-.174	.087	.061	-.012	-.037
18. Many physical complaints	.745	.765	-.119	-.147	-.181	-.190	-.046	-.033
19. Emotionally unstable	.388	.342	-.257	-.269	-.152	-.150	.092	.089
20. Extrovert	.069	.122	.220	.225	.377	.310	.220	.211
21. Sympathetic	.323	.278	.316	.282	.369	.347	.336	.371
22. Voluntary	.121	.119	.666	.673	.462	.434	.173	.166
23. Health perceptions	.064	.047	-.027	-.003	.112	.126	.235	.255
Mean of sum of squares	.084	.078	.115	.109	.071	.063	.107	.113
Canonical correlation coefficient	.814		.793		.782		.761	

life habits. Therefore whenever we try to collect information retrospectively about the past habits of subjects, the accuracy of data will decrease according to the duration of time between the phenomena of interest and the survey, among other factors.

For example, notice the correlation of FBS (fasting blood sugar level) with the sugar scale (Table 5): it is negative, which seems to be unreasonable—but this result is based on hospital data. We might therefore explain it by the effect of education on people with high blood sugar levels who may answer the questions properly according to their knowledge of better life habits. In this interpretation, if a patient has a good life habits pattern, then we should give careful consideration to the result because patients more than healthy people may know better life habits in daily life.

TABLE 5
Correlation Coefficients among Heart Disease Risk
Factors and LHI Scales

	[Age]
Regular intake of meals	.412 ^a
Traditional	.338 ^a
Intel. and cultural activities	.240 ^a
Entertainment	-.231 ^a
Smoking	-.212 ^a
Salt	-.184 ^a
	[Obesity]
Health perceptions	.176 ^a
Sense of love and duty	.162 ^a
	[FBS]
Sugar	-.209 ^a
Motiv. and int. in cooking	.152 ^b
Sense of love and duty	.139 ^c
	[Systolic Pressure]
Regular intake of meals	.207 ^a
Intel. and cultural activities	.194 ^a
Traditional	.188 ^a
Motiv. and int. in cooking	.180 ^a
Health perceptions	.173 ^a
Sugar	-.164 ^a
	[Diastolic Pressure]
Health perceptions	.193 ^a
Motiv. and int. in cooking	.192 ^a
Sugar	-.171 ^a

Note: Data collected from 545 males in the Life Planning
Center hospital in 1987.

^a $p < 0.0001$, ^b $p < 0.0005$, ^c $p < 0.001$.

Moreover, our survey data may be biased because all the subjects of our surveys were voluntary. We did, however, obtain almost the same structures of life habit scales in females and males even though the regions and the periods of the surveys were quite different from each other.

Finally, whenever we try to evaluate the relationship of life habits to health and disease, our analysis must take into consideration the existence of unknown factors; as we cannot know everything.

V. CONCLUSIONS

Beginning in 1979 we constructed and revised, through analyzing its reliability and validity, the LPC-LHI for use in programs to prevent noninfectious chronic diseases. It is clear that the LPC-LHI is a useful tool for epidemiologic studies on risk factors in daily life for specific diseases. We cannot at this time, however, suggest confirmative relationships among diseases and life habit factors due to a lack of information concerning mortality and/or incidence of the diseases under consideration.

We have scheduled two 1990 surveys in Sirahama, Chiba prefecture, and in Nakano, Nagano prefecture, in which we will collect data through the LPC-LHI not only on life habits but also on personal nutrition, including salt intake. Medical examinations will also be conducted in the Sirahama survey. We will moreover study mortality incidence and prevalence of such specific diseases as heart disease and cancer in both regions. By merging these data, we may be able to clarify the latent risk factors in daily life for various diseases of which causes are still unknown. If specific life habits are found to influence the occurrence of a serious disease, we will try to enlighten the residents and encourage them to change the relevant life habits and to maintain good mental and physical health conditions.

Finally, although it may be quite difficult to detect the risk factors for certain diseases, our regional surveys will be continued into the future for as long as possible until desirable results are obtained.

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APPENDIX

1. Internal Consistency

The θ (theta) reliability coefficient of each scale is defined as

$$\theta = \frac{p}{p-1} \left(1 - \frac{1}{\lambda} \right)$$

by Carmines and Zeller (1979), where p is the number of variables and λ is the maximum eigenvalue obtained by means of principal component analysis using all items of each scale. As is well known, the θ reliability coefficient gives the upper limit of the α (alpha) reliability coefficient defined as

$$\alpha = \frac{p}{p-1} \left(1 - \frac{\sum_{k=1}^p \text{var}(x_k)}{\text{var}(S)} \right)$$

given by Cronbach (1951), where $\text{var}(x_k)$ is the variance of item x_k ($k=1, \dots, p$), and $\text{var}(S)$ is the variance of scale S .

2. Measurements of Agreement

Consider the $K \times K$ cross-table for matched data as shown below (Table A-1). Some measurements of agreement of the response to the same item between two different surveys are proposed.

a) Proportion of agreement:

$$P_0 = (N_{11} + N_{22} + \dots + N_{KK})/N..$$

b) Chance-expected proportion of agreement:

$$P_c = (N_{1.}N_{.1} + N_{2.}N_{.2} + \dots + N_{K.}N_{.K})/N^2..$$

c) κ (kappa) statistic:

$$\kappa = \frac{P_0 - P_c}{1 - P_c}$$

given by Cohen (1960).

TABLE A - 1
K × K Cross-table for Matched Data

Category	1	2	...	K	Total
1	N_{11}	N_{12}	...	N_{1K}	$N_{1.}$
2	N_{21}	N_{22}	...	N_{2K}	$N_{2.}$
...
K	N_{K1}	N_{K2}	...	N_{KK}	$N_{K.}$
Total	$N_{.1}$	$N_{.2}$...	$N_{.K}$	$N_{..}$

3. Principal Component Analysis

Principal component analysis is to compress the dimension of a set of variables and also to analyze the structural interdependency of a set of variables through making new linear composite variables.

Supposing R is a correlation matrix with respect to scale items, then the principal component loading vector, a , and its eigenvalue, λ , can be obtained by the following normal equation:

$$R a = \lambda a.$$

4. Canonical Correlation Analysis

Canonical correlation analysis is to analyze the relationship of two sets of variables. Suppose R_{XX} and R_{YY} are respective correlation matrices to a set of variables (X) and another set of variables (Y), and R_{XY} is a correlation matrix concerning X and Y , and a and b are weight vectors.

$$f = Xa, \text{ and } g = Yb,$$

where f and g are new composites (canonical variables) determined as having the maximum correlation that is called "canonical correlation coefficient."

a and b satisfy the following equations.

$$R_{XY}R_{YY}^{-1}R_{YX}a = \lambda R_{XX}a,$$

and

$$b = \frac{1}{\sqrt{\lambda}} R_{YY}^{-1}R_{YX}a.$$

Structure vectors of X and Y , v and w , are given by

$$v = R_{XX}a, \text{ and } w = R_{YY}b.$$

5. LPC-LHI Scales and θ Reliability Coefficients

TABLE A-2
Component Loadings of LPC-LHI Scale Items and Reliability θ

Item no.	1st comp. loadings*	
	Female	Male
<u>1) Meat and fats scale</u>		
102. I eat deep-fried food and/or cutlets.	.714	.736
79. I eat ham and sausages.	.639	.683
125. I eat greasy, fried, or sauteed foods.	.617	.686
10. I eat meat.	.559	.615
33. I eat tempura, deep-fried vegetables, and fish.	.554	.497
148. I eat bacon.	.563	.585
56. I eat <i>kamaboko</i> , <i>chikuwa</i> , and/or <i>hanpen</i> (fish cakes or fish paste).	.454	.427
171. I eat fish.	.139	.006
θ	.678	.708
<u>2) Western-style diet scale</u>		
103. I eat bread with butter or margarine.	.735	.680
57. I eat cheese or bacon.	.662	.649
172. I eat bread.	.669	.613
34. I use butter and lard in cooking.	.532	.520
80. I eat eggs.	.470	.598
11. I drink milk.	.434	.376
126. I eat fresh vegetables.	.425	.364
149. I eat fruit.	.428	.411
θ	.683	.652
<u>3) Salt scale</u>		
86. I put soy sauce on <i>tsukemono</i> (Japanese pickles)	.751	.770
155. I put both soy sauce and <i>aji-no-moto</i> (mono-sodium glutamate) on <i>tsukemono</i> .	.696	.618
132. I eat heavily seasoned food.	.641	.709
17. I eat dishes with soy sauce, worcestershire sauce, or salt.	.650	.650
63. I eat <i>tsukemono</i> .	.542	.484
40. I eat salted dried fish.	.527	.591
109. I am usually careful not to eat too much salt.	-.485	-.470
188. I eat <i>miso</i> soup.	.240	.401
θ	.727	.744
<u>4) Sugar scale</u>		
161. I eat chocolate.	.714	.662
138. I eat ice cream and sherbet.	.623	.652
115. I eat sweet things such as cake or Japanese	.616	.713

pastries.		
184. I eat candy and sweets.	.615	.635
46. I drink Kool-Aid and/or soda.	.509	.586
69. I eat bread with jam.	.464	.496
92. I drink coffee or tea.	.448	.354
23. I put sugar in my coffee and tea.	.446	.369
θ	.691	.707
<hr/>		
<u>5) Regular intake of meals scale</u>		
60. I eat dinner at the same time every day.	.683	.720
37. I eat lunch at the same time every day.	.641	.657
14. I always eat breakfast at the same time every day.	.635	.644
83. I go to bed at the same time every day.	.649	.728
106. I always get up at the same time every day.	.575	.570
129. I skip a meal when I am busy.	-.508	-.640
152. I stay up late.	-.455	-.623
175. I eat snacks at night.	-.253	-.489
θ	.696	.792
<hr/>		
<u>6) Motivation and interest in cooking scale</u>		
9. I try recipes I find in magazines, on TV, etc.	.783	.742
32. I try recipes suggested by friends.	.755	.755
191. I read articles about nutrition and cooking in the newspapers and magazines.	.721	.678
55. I try new foods and/or new menu ideas.	.651	.673
147. I watch cooking programs on television.	.552	.633
101. I subscribe to some cooking or nutrition magazines.	.522	.491
170. I am picky about how my food is seasoned.	.441	.421
124. I have a greater variety of dishes for dinner than for other meals.	.350	.286
θ	.765	.753
<hr/>		
<u>7) Alcohol and smoking scale</u>		
98. How many cigarettes do you usually smoke per day?	.759	.516
121. I smoke mild or extra-mild cigarettes.	.526	.412
144. I smoke regular cigarettes.	.442	.300
186. I smoke a cigarette until it gets very short.	.629	.377
6. I drink alcoholic beverages.	.704	.735
52. I drink hard liquor.	.501	.622
29. I drink beer.	.602	.620
75. I drink <i>sake</i> (Japanese wine).	.718	.543
167. I drink wine.	.231	.238

0	.765	.643
<u>8) Entertainment scale</u>		
72. I shop at department stores.	.625	.609
118. I read popular magazines.	.603	.506
26. I am always interested in current fashions.	.562	.510
141. I listen to music.	.477	.489
49. I watch sports on television.	.447	.332
95. I go to movies.	.438	.626
164. I play bingo or pinball.	.225	.322
185. I watch television.	.210	-.089
0	.502	.486
<u>9) Intellectual and cultural activities scale</u>		
73. I watch or listen to educational programs on television and/or radio.	.697	.747
142. I read articles about health and disease in newspapers and magazines.	.634	.545
27. I watch or listen to science programs on television and/or radio.	.609	.618
50. I read books (other than magazines).	.626	.525
119. I read health magazines.	.600	.582
4. I read magazines.	.586	.559
96. I watch health care programs on television.	.545	.548
165. I go to concerts.	.413	.288
0	.738	.694
<u>10) Spirit of social service scale</u>		
163. I do things for the community no matter how small my contribution is.	.718	.727
25. I participate in various social activities to broaden my outlook.	.720	.689
2. I have helped the community through social work.	.654	.548
94. I have helped the poor and unfortunate.	.613	.617
117. I have helped unfortunate people in other countries.	.599	.605
71. I am always concerned about the state of affairs in the world.	.519	.391
48. I have participated in a citizens, campaign for improving living conditions.	.493	.562
140. I am concerned about the increase in juvenile delinquency and domestic violence.	.284	.400
0	.733	.716
<u>11) Sense of love and duty scale</u>		
18. I always return a person's kindness.	.643	.635

64. I always show respect to my elders.	.647	.580
87. A good relationship with my neighbors is one of my top priorities.	.611	.586
110. I always send a gift to friends and associates to whom I owe favors.	.512	.500
41. I lend a helping hand to those who are in trouble.	.512	.545
133. I actively participate in community activities.	.456	.541
179. I give advice to my friends that I think is useful.	.409	.500
156. I value compassion more than logic and principles.	.432	.365
θ	.644	.647
<u>12) Thrift scale</u>		
16. I usually buy inexpensive and durable goods.	.585	.591
131. I don't mind any hardship to become rich.	.593	.510
154. I am trying to accumulate as many assets as I can.	.555	.512
62. I try my best not to waste money.	.527	.643
39. I consider usefulness first when making purchases.	.454	.548
85. I want my children to attend public school.	.364	.365
108. I generally avoid doing things that don't benefit me.	.363	.326
177. I read advertisements and inserts in the newspapers.	.182	.183
θ	.502	.528
<u>13) Traditional scale</u>		
59. I am set in my ways.	.619	.660
36. I always observe rules of social order.	.546	.544
151. I prefer a traditional life-style.	.527	.555
82. I usually conform to the social norm.	.530	.576
105. I try to lead my life without "making waves."	.489	.590
13. I generally lead a wholesome life.	.473	.525
174. I readily adopt good habits.	.487	.447
128. I endure my daily life in spite of complaints and problems.	.371	.382
θ	.592	.654
<u>14) Personal hygiene scale</u>		
180. In my daily life I take special care to maintain cleanliness.	.615	.713
157. I am careful about how I dress.	.575	.662
111. I change my underwear.	.602	.505

189. I change my handkerchief.	.570	.526
134. When I go out I fix my hair.	.537	.600
65. I manicure my nails.	.512	.506
42. I take a bath.	.534	.444
19. I brush my teeth.	.438	.335
0	.671	.667

15) Wife-leadship type scale

168. Who decides about attending weddings, funerals, etc.?	.669	.674
53. Who takes socializing with relatives more seriously?	.656	.633
7. Who makes decisions about your children's education?	.515	.546
122. Who expresses opinions about family trips?	.500	.550
30. Who makes decisions about your family's involvement in community and school affairs?	.470	.447
145. Who makes decisions about such major purchases as a car, furniture, and electrical appliances?	.418	.530
99. Who voices opinions about the daily menu in your house?	.393	.499
76. Who decides on your family size?	.379	.508
0	.595	.675

16) Exercise scale

8. I exercise for health or recreation.	.775	.783
54. I exercise regularly.	.740	.715
31. I know how to do various physical exercises.	.588	.601
146. I exercise with my family on holidays.	.602	.567
169. I am exercising to lose weight.	.517	.526
77. I would like to exercise with good instructors and facilities.	.474	.514
100. I enjoy such exercise as tennis and golf on holidays.	.512	.708
123. I wish to improve my self-confidence and decision-making abilities by doing physical exercise.	.444	.498
0	.736	.774

17) Unhealthy scale

28. I get sick.	.799	.773
5. I go to a doctor.	.788	.821
51. I take medicine.	.743	.767
74. I feel my health has been deteriorating lately.	.605	.433
143. I am physically weak by nature.	.548	.412

97. When I wake up in the morning I still feel tired.	.490	.193
120. I have been hospitalized.	.456	.472
166. I have a family doctor whom I can readily consult about my physical problems.	.248	.492
θ	.760	.723
<hr/>		
<u>18) Many physical complaints scale</u>		
58. I feel tired all day long.	.724	.760
12. I have a variety of aches and pains.	.715	.626
35. My arms and legs get tired.	.698	.672
81. I have a stiff neck and shoulders.	.684	.633
104. I easily feel mentally tired from nervous strain.	.651	.653
127. I get headaches.	.623	.557
173. I feel cold, especially in my hands and feet.	.483	.430
150. I have stomach problems.	.453	.495
θ	.789	.760
<hr/>		
<u>19) Emotionally unstable scale</u>		
68. I dwell on the past.	.711	.685
22. I worry about trivial matters.	.699	.734
45. I tend to be emotionally unstable.	.698	.706
91. I become moody over trivial things.	.630	.663
114. I feel emotionally tired.	.619	.611
137. I am afraid of failing.	.600	.554
160. I easily reveal my feelings on my face.	.533	.539
183. I am rather insecure about everything.	.452	.421
θ	.775	.773
<hr/>		
<u>20) Extrovert scale</u>		
24. I am sociable.	.777	.749
47. I am rather reserved.	-.758	-.741
1. I tend to be shy and retiring.	-.739	-.766
93. People think I am very active.	.701	.698
70. I am good at socializing.	.674	.712
139. I make friends easily.	.631	.645
162. I can socialize with any type of person.	.619	.624
116. I am poor at public speaking.	-.599	-.588
θ	.843	.845
<hr/>		
<u>21) Sympathetic scale</u>		
20. I am especially sensitive to other people's feelings.	.717	.707
66. I am particularly sensitive to other people's troubles.	.707	.747
43. I always help my friends even if it is an incon-	.651	.593

venience or disadvantageous.		
89. I like to help others.	.655	.626
135. I am much more sensitive than other people.	.494	.536
158. I find it difficult to ignore stray animals.	.289	.340
112. I sometimes cry out of sympathy.	.258	.393
181. I like all children even if they are mischievous.	.273	.350
θ	.654	.682
<hr/>		
<u>22) Voluntary scale</u>		
21. I take active interest in everything I do.	.713	.715
90. I am always physically active.	.681	.697
136. I do things as soon as they come to mind.	.633	.649
44. I express my opinion even if it's in the minority.	.613	.617
67. I usually volunteer to organize meetings.	.614	.527
113. I get my work (including housework) done more quickly than the average person.	.563	.651
159. I like to do things that are unique or different.	.417	.449
182. I respond as soon as I receive a letter.	.348	.285
θ	.725	.732
<hr/>		
<u>23) Health perceptions scale</u>		
130. I think that one's natural constitution is inherited.	.637	.687
107. I think that cancer is a hereditary disease.	.578	.633
84. I believe that mental disease is generally inherited.	.544	.593
38. I think that being overweight is inherited.	.562	.410
15. I think that high blood pressure is inherited.	.507	.432
61. I believe that one's health primarily depends on one's natural constitution.	.458	.502
153. I believe that one's lifespan is predetermined by fate.	.353	.463
176. I think that exercise is essential to keeping in good shape.	.125	.058
θ	.559	.585

Appendix 3: Life Habits Inventory

PERSONAL BACKGROUND

Do not put a check in the computer coding box on the right.

(1-28)

Questionnaire ID ☐ ☐ ☐ ☐

Household Code ☐ ☐ ☐

Card Number ☐

This is a questionnaire on health and life habits. Please fill out the following:

DATE OF BIRTH: _____ (month/year)

☐ ☐ ☐ ☐

SEX: ☐ Male
☐ Female

☐

RACE: ☐ Japanese
☐ Mixed
☐ Caucasian

☐

Other _____ (please specify)

GENERATION (if you are of Japanese ancestry):

1st Issei ☐
2nd Nisei ☐
3rd Sansei ☐
4th Yonsei ☐

How many years have you lived outside the U.S.? _____ years.

☐ ☐

How many years have you lived in Japan? _____ years.

☐ ☐

EDUCATIONAL BACKGROUND: Please check your highest school level.

☐

1. _____ Elementary School (1st to 6th grade)
2. _____ Junior High School
3. _____ High School (10th to 12th grade)
4. _____ Professional School/Junior College
5. _____ College/University/Graduate School

PERSONS LIVING IN YOUR HOUSE:

☐ ☐ ☐

1. _____ Father/Father-in-law
2. _____ Mother/Mother-in-law
3. _____ Spouse
4. _____ Child(ren)
5. _____ Grandfather
6. _____ Grandmother
7. _____ Grandson(s)/Granddaughter(s)
8. _____ Other blood relatives
9. _____ Persons with no blood relationship

☐ ☐ ☐

NUMBER OF CHILDREN: _____

☐ ☐

MEDICAL HISTORY

Please complete the following Medical History. Check the appropriate answer. Do not put a check in the computer coding boxes on the right.

1. Would you say your health in general is excellent, very good, good, fair, or poor?

(29-32)

1. ☐ Excellent
 2. ☐ Very Good
 3. ☐ Good
 4. ☐ Fair
 5. ☐ Poor

2. Are you now taking medicine regularly, not counting vitamins?

1. ☐ Yes
 2. ☐ No

If yes, what is the medicine for? _____

3. Has a doctor EVER told you that you had:	YES	NO	Do you still have...?		How many years ago did you first have it?
			YES	NO	
RESPIRATORY DISEASE					
Asthma?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Emphysema?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Chronic bronchitis?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Hay fever?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Tuberculosis?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Chronic cough?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Other respiratory illness? _____ (please specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Allergies?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
If yes, what type?					
HYPERTENSION (high blood pressure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
If yes, has a doctor EVER advised you to lose weight because of high blood pressure/hypertension?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Has a doctor ever prescribed medicine to you for high blood pressure/hypertension?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Low blood pressure?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Stroke?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
If yes, what part of your body was affected?					

(33-40)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(41-48)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(49-56)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(57-64)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(65-72)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(73-80)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(81-88)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	YES	NO	Do you still have...?		How many years ago did you first have it?	Do not check these boxes.
			YES	NO		
CARDIOVASCULAR DISEASES						
Rheumatic fever?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/>
Rheumatic heart disease?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/>
Heart murmur?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/>
Heart failure?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/>
Heart attack?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/>
Any other trouble?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/>
What?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/>
Hardening of the arteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/>
Arthritis?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/>
A peptic, stomach, or duodenal ulcer?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/>
Spastic colon or colitis?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/>
Gallstones?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/>
Hepatitis?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/>
Polio or paralysis?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/>
Benign tumor, growth or cyst?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/>
Thyroid disease?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/>
Diabetes?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/>
Epilepsy?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/>
Kidney disease?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/>
Prostate trouble?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/>
Back or spine trouble?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/>
Urinary tract disorder?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/>
Glaucoma?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/>
Cataracts?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/>
Other eye disease or visual impairment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/>
Hearing disorder?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/>
Other physical disability?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/>
What?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/>

Height: _____ ft. _____ inches (without shoes)

Weight: _____ lbs. (without shoes and clothes)

Blood pressure (if known) _____

Has a doctor ever told you that you have a high cholesterol level? ☐ Yes ☐ NoHave you smoked at least eleven cigarettes during your entire life? ☐ Yes ☐ NoDo you smoke now? ☐ Yes ☐ No

On the average, how many a day do you smoke? _____ cigarettes per day.

Do you smoke a pipe or cigar? ☐ Yes ☐ NoDo you drink coffee? ☐ Yes ☐ No

On the average, how many cups a day do you drink? _____ cups per day.

In things you do for recreation (for example, sports, hiking, dancing) do you get much exercise, moderate exercise, or little or no exercise? ☐☐ Much exercise☐ Moderate exercise☐ Little or no exercise

LIFE HABITS QUESTIONNAIRE

I.D. ☐ ☐ ☐ ☐Household Code ☐ ☐ ☐Card Number ☐ 4

Please circle the appropriate answer in parentheses. Do not put a check in the computer coding box on the right.

6-37

- | | | |
|---|---|--------------------------|
| 1. I tend to be shy and retiring. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 2. I have helped the community through social work. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 3. I enjoy my life everyday with little concern for the future. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 4. I read magazines. | (Often. Sometimes. No.) | <input type="checkbox"/> |
| 5. I go to a doctor. | (Often. Sometimes. Never.) | <input type="checkbox"/> |
| 6. I drink alcoholic beverages. | (Often. Sometimes. Never.) | <input type="checkbox"/> |
| 7. Who makes decisions about your children's education? | (Wife. Not Sure. Husband.) | <input type="checkbox"/> |
| 8. I exercise for health or recreation. | (Often. Sometimes. Never.) | <input type="checkbox"/> |
| 9. I try recipes I find in magazines, on television, etc. | (Often. Sometimes. Never.) | <input type="checkbox"/> |
| 10. I eat meat. | (Often. Sometimes. Never.) | <input type="checkbox"/> |
| 11. I drink milk. | (Every day. Sometimes. Never.) | <input type="checkbox"/> |
| 12. I have a variety of aches and pains. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 13. I generally lead a wholesome life. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 14. I always eat breakfast at the same time every day. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 15. I think that high blood pressure is inherited. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 16. I usually buy inexpensive and durable goods. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 17. I eat dishes with soy sauce, worcestershire sauce, or salt. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 18. I always return a person's kindness. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 19. I brush my teeth. | (After every meal. Once a day. Seldom.) | <input type="checkbox"/> |
| 20. I am especially sensitive to other people's feelings. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 21. I take an active interest in everything I do. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 22. I worry about trivial matters. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 23. I put sugar in my coffee and tea. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 24. I am sociable. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 25. I participate in various social activities to broaden my outlook. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 26. I am always interested in current fashions | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 27. I watch or listen to science programs on television and/or radio. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 28. I get sick. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 29. I drink beer. | (More than 2 cans a day. 1 can a day. Never.) | <input type="checkbox"/> |

Please circle the appropriate answer in parentheses. Do not check the compute coding box on the right.

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|--|--|--------------------------|
| 30. Who makes decisions about your family's involvement in community and school affairs? | (Wife. Not Sure. Husband.) | <input type="checkbox"/> |
| 31. I know how to do various physical exercises. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 32. I try recipes suggested by friends. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 33. I eat tempura, deep-fried vegetables and fish. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 34. I use butter and lard in cooking. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 35. My arms and legs get tired. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 36. I always observe rules of social order. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 37. I eat lunch at the same time every day. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 38. I think being overweight is inherited. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 39. I consider usefulness first when making purchases. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 40. I eat salted dried fish. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 41. I lend a helping hand to those who are in trouble. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 42. I take a bath. | (Every day. Every two days. Seldom.) | <input type="checkbox"/> |
| 43. I always help my friends even if it is an inconvenience or disadvantageous. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 44. I express my opinion even if it's in the minority. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 45. I tend to be emotionally unstable. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 46. I drink Kool-Aid and/or soda. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 47. I am rather reserved. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 48. I have participated in a citizen's campaign for improving living conditions. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 49. I watch sports programs on television. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 50. I read books (other than magazines). | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 51. I take medicine. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 52. I drink hard liquor. | (More than 2 oz./day. 1 oz. day. Never.) | <input type="checkbox"/> |
| 53. Who takes socializing with relatives more seriously? | (Wife. Not Sure. Husband.) | <input type="checkbox"/> |
| 54. I exercise regularly. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 55. I try new foods and/or new menu ideas. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 56. I eat kamaboko, chikuwa, and/or hanpen (fish cakes or fish paste). | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 57. I eat cheese or bacon. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 58. I feel tired all day long. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 59. I am set in my ways. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 60. I eat dinner at the same time every day. | (Yes. Not sure. No.) | <input type="checkbox"/> |

Please circle the appropriate answer in parentheses. Do not check the computer coding box on the right.

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|--|---|---|
| 61. I believe that one's health primarily depends on one's natural constitution. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 62. I try my best not waste money. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 63. I eat tsukemono (Japanese pickles). | (At every meal
1 or 2 times a day. Seldom.) | <input type="checkbox"/> |
| 64. I always show respect to my elders. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 65. I manicure my nails. | (More than once a week.
Once every two weeks.
Seldom.) | <input type="checkbox"/> |
| 66. I am particularly sensitive to other people's troubles. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 67. I usually volunteer to organize meetings. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 68. I dwell on the past. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 69. I eat bread with jam. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 70. I am good at socializing. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 71. I am always concerned about the state of affairs in the world. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 72. I shop at department stores. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| | | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| | | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 73. I watch or listen to educational programs on television or radio. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 74. I feel my health has been deteriorating lately. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 75. I drink sake (Japanese wine). | (More than 1 small bottle/day.
1 small bottle/day. Never.) | <input type="checkbox"/> |
| 76. Who decides on your family size? | (Wife. Not Sure. Husband.) | <input type="checkbox"/> |
| 77. I would like to exercise with good instructors and facilities. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 78. It is difficult to try new recipes at home because my family has specific preferences. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 79. I eat ham and sausages. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 80. I eat eggs. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 81. I have a stiff neck and shoulders. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 82. I usually conform to the social norm. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 83. I go to bed at the same time every day. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 84. I believe that mental diseases are generally inherited. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 85. I want my children to attend public school. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 86. I put soy sauce on tsukemono (Japanese pickles). | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 87. A good relationship with my neighbors is one of my top priorities. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 88. I shampoo my hair. | (More than twice a week.
Once a week. Seldom.) | <input type="checkbox"/> |
| 89. I like to help others. | (Yes. Not sure. No.) | <input type="checkbox"/> |

Please circle the appropriate answer in parentheses. Do not check the computer coding box on the right.

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|---|---|--------------------------|
| 90. I am always physically active. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 91. I become moody over trivial things. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 92. I drink coffee or tea. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 93. People think I am very active. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 94. I have helped the poor and unfortunate. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 95. I go to movies. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 96. I watch health care programs on television. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 97. When I wake up in the morning I still feel tired. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 98. How many cigarettes do you usually smoke per day? | (20 or more a day. 10-19 a day. 9 or less. None.) | <input type="checkbox"/> |
| 99. Who voices opinions about the daily menu in your house? | (Wife. Not Sure. Husband.) | <input type="checkbox"/> |
| 100. I enjoy exercises such as tennis and golf on holidays. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 101. I subscribe to some cooking or nutrition magazines. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 102. I eat deep-fried food and/or cutlets. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 103. I eat bread with butter or margarine. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 104. I easily feel mentally tired from nervous strain. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 105. I try to lead my life without "making waves." | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 106. I always get up at the same time every day. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 107. I think cancer is a hereditary disease. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 108. I generally avoid doing things that don't benefit me. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 109. I am usually careful not to eat too much salt. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 110. I always send a gift to friends and associates to whom I owe favors. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 111. I change my underwear. | (Every day. Every two days. Infrequently.) | <input type="checkbox"/> |
| 112. I sometimes cry out of sympathy. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 113. I get my work (including housework) done more quickly than the average person. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 114. I feel emotionally tired. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 115. I eat sweet things such as cake or Japanese pastries. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 116. I am poor at public speaking. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 117. I have helped the unfortunate people in other countries. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 118. I read popular magazines. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 119. I read health magazines. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 120. I have been hospitalized. | (More than once. Once. Never.) | <input type="checkbox"/> |

Please circle the appropriate answer in parentheses. Do not check the computer coding box on the right.

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|---|-----------------------------|--------------------------|---|
| 121. I smoke mild or extra mild cigarettes. | (Yes. Not sure. No.) | <input type="checkbox"/> | (57-60) |
| 122. Who expresses opinions about family trips? | (Wife. Not Sure. Husband.) | <input type="checkbox"/> | |
| 123. I wish to improve my self-confidence and decision-making abilities by doing physical exercise. | (Yes. Not sure. No.) | <input type="checkbox"/> | |
| 124. I have a greater variety of dishes for dinner than for other meals. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> | |
| 125. I eat greasy, fried, or sauteed foods. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> | |
| 126. I eat fresh vegetables. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> | |
| 127. I get headaches. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> | |
| 128. I endure my daily life in spite of complaints and problems. | (Yes. Not sure. No.) | <input type="checkbox"/> | |
| 129. I skip a meal when I am busy. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> | |
| 130. I think one's natural constitution is inherited. | (Yes. Not sure. No.) | <input type="checkbox"/> | |
| 131. I don't mind any hardship to become rich. | (Yes. Not sure. No.) | <input type="checkbox"/> | |
| 132. I eat heavily seasoned food. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> | |
| 133. I actively participate in community activities. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> | |
| 134. When I go out, I fix my hair. | (Yes. Seldom. No.) | <input type="checkbox"/> | |
| 135. I am much more sensitive than other people. | (Yes. Not sure. No.) | <input type="checkbox"/> | |
| 136. I do things as soon as they come to mind. | (Yes. Not sure. No.) | <input type="checkbox"/> | |
| 137. I am afraid of failing. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> | |
| 138. I eat ice cream and sherbet. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> | |
| 139. I make friends easily. | (Yes. Not sure. No.) | <input type="checkbox"/> | |
| 140. I am concerned about the increase in juvenile delinquency and domestic violence. | (Yes. Not sure. No.) | <input type="checkbox"/> | |
| 141. I listen to music. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> | |
| 142. I read articles about health and disease in the newspapers and magazines. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> | |
| 143. I am physically weak by nature. | (Yes. Not sure. No.) | <input type="checkbox"/> | |
| 144. I smoke regular cigarettes. | (Yes. Not sure. No.) | <input type="checkbox"/> | |
| | | | (1-14) |
| | | | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| | | | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 145. Who makes decisions about major purchases such as a car, furniture, and electrical appliances? | (Wife. Not Sure. Husband.) | <input type="checkbox"/> | |
| 146. I exercise with my family on holidays. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> | |
| 147. I watch cooking programs on television. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> | |
| 148. I eat bacon. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> | |
| 149. I eat fruits. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> | |
| 150. I have stomach problems. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> | |

Please circle the appropriate answer in parentheses. Do not check the computer coding box on the right.

(15-44)

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|---|--|--------------------------|
| 151. I prefer a traditional lifestyle. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 152. I stay up late. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 153. I believe one's life span is predetermined by fate. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 154. I am trying to accumulate as many assets as I can. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 155. I put both soy sauce and aji-no-moto (monosodium glutamate) on tsukemono (Japanese pickles). | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 156. I value compassion more than logic and principles. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 157. I am careful about how I dress. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 158. I find it difficult to ignore stray animals. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 159. I like to do things that are unique or different. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 160. I easily reveal my feelings on my face. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 161. I eat chocolate. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 162. I can socialize with any type of people. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 163. I do things for the community no matter how small my contribution is. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 164. I play bingo or pinball. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 165. I go to concerts. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 166. I have a family doctor whom I can readily consult about my physical problems. | (In the neighborhood.
Outside the neighborhood.
None.) | <input type="checkbox"/> |
| 167. I drink wine. | (More than 2 glasses a day.
1 glass a day. Never.) | <input type="checkbox"/> |
| 168. Who decides about attending weddings, funerals, etc.? | (Wife. Not Sure. Husband.) | <input type="checkbox"/> |
| 169. I am exercising to lose weight. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 170. I am picky about how my food is seasoned. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 171. I eat fish. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 172. I eat bread. | (More than once a day.
Sometimes. Seldom.) | <input type="checkbox"/> |
| 173. I feel cold, especially in my hands and feet. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 174. I readily adopt good habits. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 175. I eat snacks at night. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 176. I think exercise is essential to keep in good shape. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 177. I read advertisements and inserts in the newspapers. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 178. I use low-salt soy sauce. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 179. I give advice to my friends that I think is useful. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 180. In my daily life, I take special care to maintain cleanliness. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |

Please circle the appropriate answer in parentheses. Do not check the computer coding box on right.

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| 181. I like all children even if they are mischievous. | (Yes. Not sure. No.) | (45-64) <input type="checkbox"/> |
| 182. I respond as soon as I receive a letter. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 183. I am rather insecure about everything. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 184. I eat candy and sweets. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 185. I watch television. | (More than 1 hour/day.
Less than 1 hour/day. Seldom.) | <input type="checkbox"/> |
| 186. I smoke a cigarette until it gets very short. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 187. I would rather be with my family than at work. | (Yes. Not sure. No.) | <input type="checkbox"/> |
| 188. I eat miso soup. | (Every meal. Once a day.
Seldom.) | <input type="checkbox"/> |
| 189. I change my handkerchief. | (Every day. Every two days.
Seldom.) | <input type="checkbox"/> |
| 190. I use instant or prepared foods. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 191. I read articles about nutrition and cooking in the newspapers and magazines. | (Often. Sometimes. Seldom.) | <input type="checkbox"/> |
| 192. How is your health at present? | (Good. Not sure. Not good.) | <input type="checkbox"/> |
| 193. Circle any of the following things that you have in your house. | (Thermometer. Scale.
Sphygmomanometer [for blood pressures.]) | <input type="checkbox"/> |
| 194. Check any of the following examinations that you took during the past 2 years. | | <input type="checkbox"/> |
| <input type="checkbox"/> 1. Community physical examination.
<input type="checkbox"/> 2. Examination for stomach cancer.
<input type="checkbox"/> 3. Examination for uterine cancer.
<input type="checkbox"/> 4. Examination for breast cancer.
<input type="checkbox"/> 5. Examination of the circulatory system.
<input type="checkbox"/> 6. A company physical examination. | | |
| 195. I take long walks on a regular route. | (More than once a week.
Once a week. Never.) | <input type="checkbox"/> |

Thank you very much for completing this questionnaire. Your assistance is greatly appreciated. Please return it to Nikkei Concerns in the envelope provided.

If you would like to make additional comments about the questionnaire, please write them below:

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