

The health status of Japanese people living in the UK

Fumiko KAWASAKI ¹⁾, Pamela DYSON ²⁾, Nathan HILL ²⁾, Sue BEATTY ²⁾
Irene STRATTON ²⁾, Kohei KAKU ¹⁾, David MATTHEWS ²⁾

1) Division of Diabetes and Endocrinology, Department of Internal Medicine, Kawasaki Medical School, 577 Matsushima, Kurashiki, 701-0192, Japan

2) Oxford Centre for Diabetes, Endocrinology & Metabolism, Churchill Hospital Headington, Oxford OX3 7LJ, UK

ABSTRACT Studies have shown that Japanese migrants to the US and Brazil have higher rate of diabetes than native Japanese, but little is known about migrants to the UK. We investigate the health status of Japanese migrants to the UK. We utilised the modified validated Behavioral Risk Factor Surveillance System State Questionnaire 2004. A UK computerised directory was searched for common Japanese names and 2192 anonymised postal questionnaires were dispatched. Data were compared to a nationwide survey of diabetes in Japan, the National Health and Nutrition Survey and the Health Survey for England. 589 replies were received and showed that the rates of obesity and overweight were lower than that of the native UK population. The prevalence of self-reported doctor-diagnosed diabetes, hypertension, hyperlipidaemia, heart-attack and stroke were 3.6%, 13.1%, 19.5%, 0.7% and 0.8% respectively. It appears that Japanese migrants adopt a lifestyle similar to the UK population, diverging from that of native Japanese. Rates of obesity are lower than the UK native population and smoking rates are lower than native Japanese. In conclusion, the migratory disease burden seen in Japanese migrants to the US and Brazil was not apparent in this sample population in the UK.

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Key words : Japanese, UK, Health, Obesity, Diabetes

INTRODUCTION

In common with many developed countries, rates of chronic diseases related to lifestyle are increasing rapidly in Japan. In an attempt to combat this, the Japanese government launched the National Health Promotion Movement in the 21st Century (Healthy Japan 21) in 2000. This concept was designed to promote healthy lifestyles and thus decrease

premature death. A Ministry of Health Survey in 2002 reported that, “the number of people who were strongly suspected of suffering from diabetes” - on the basis of HbA_{1c} measurements $\geq 6.1\%$ - was about 7.4 million (5.8% of total population), while the number of people with “the undeniable possibility of suffering from the disease” - on the basis of HbA_{1c} measurements between 5.6% and

Corresponding author
Fumiko Kawasaki
Division of Diabetes and Endocrinology, Department
of Internal Medicine, Kawasaki Medical School, 577
Matsushima, Kurashiki, 701-0192, Japan

Phone : 81 86 462 1111
Fax : 81 86 464 1046
E-mail : fumiko@med.kawasaki-m.ac.jp

6.1% - was about 8.8 million (6.9%). The report estimated that there might be as many as 16.2 million people (12.7%) affected¹⁾.

Recent expansion of global Japanese companies has resulted in an increase in the number of Japanese who live and work in western countries. Surveys of Japanese migrants to the US²⁻⁵⁾ and Brazil⁶⁻⁸⁾ have shown that the prevalence of diabetes appears to be higher than that found in Japan. The general health status of these migrants has not been systematically reported, with the exception of a survey of Japanese in Westchester County, NY⁹⁾. A further small study by Japanese authors reports the mental health status of Japanese people living in the UK¹⁰⁾.

The Ministry of Foreign Affairs of Japan reported that 50,845 Japanese live in the UK and 9,713 of them were permanent residents in 2005¹¹⁾. The study reported here was designed to investigate and report the health status of Japanese people living in the UK and compare this to Japanese and UK indigenous populations.

MATERIALS AND METHODS

Subjects

A commercially available computerised directory called "People Finder™" containing details of the electoral roll and telephone directory in the UK was used to identify Japanese names. A search was performed using the 3000 most common Japanese surnames and we identified a possible 2021 addresses in the UK. In addition, contact was made with two Japanese societies. One, a Japanese group based in Oxford, was asked to take part in the study by personal invitation. There were 51 members of this Japanese group. The other society is called "Naminokai", and represents Japanese women married to English men living in the UK. A questionnaire was sent to the 120 members of this group with their monthly newsletter.

Design

The questionnaire consisted of 4 pages of A4 size paper and included 41 questions modified from the validated Behavioral Risk Factor Surveillance System State Questionnaire 2004¹²⁾. We changed the wording slightly to avoid US usage, added some questions relating to lifestyle and translated it into Japanese. The survey included questions about general health status, exercise, tobacco use, alcohol consumption, family history of chronic disease, doctor-diagnosed diabetes, high blood pressure, high blood cholesterol, heart disease and stroke and asked for details of lifestyle change, health-related quality of life, health care access and demographics. The questionnaire was anonymised but residential areas were identified by the first half of the UK postcode. Questionnaires (two English versions and two Japanese versions) and pre-paid reply envelopes were sent to all subjects and two adults over the age of 18 in each household were invited to complete and return the questionnaire in the envelope provided. Questionnaires were sent out during May to August 2005.

Analysis

The data were compared to that found in the nationwide survey of diabetes in Japan, the National Health and Nutrition Survey in Japan in 2003¹³⁾ and the Health Survey for England in 2003¹⁴⁾.

Statistical analysis

We have generally reported our data as percentage of respondents and used nonparametric statistics (chi square) where appropriate. We have been circumspect in interpreting p values where we have not demonstrated more than a 10% difference in response rate.

RESULTS

A total of 2192 questionnaires were sent out. 473 envelopes were not delivered (unknown at

this address), 8 people were not Japanese and 2 respondents refused. Total replies were 589 (34.5%) completed assessable questionnaires from 1719 (Fig. 1). Residential areas are shown in Fig. 2. More than

half of the respondents lived in London, but replies were received from all over the UK.

Table 1 shows the characteristics of the study subjects. 82% of respondents replied in Japanese and first generation Japanese (born in Japan) comprised 94.7% of the sample. The mean age (SD) was 43.7(12.9) years, 41.4% were male and the mean residency was 14.5(11.9) years. The respondents were generally of high educational status, with 85.7% reporting that they had attended college or university. The mean BMI was 23.7(3.1) kg/m² in men and 20.9 (2.8) kg/m² in women. 81(34.8)% of the men and 27(8.3)% in women were overweight or obese (BMI ≥ 25kg/m²) by the WHO

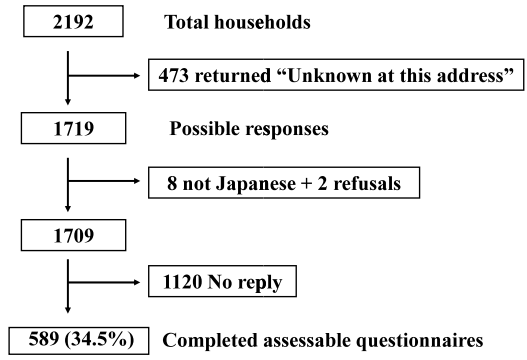


Fig. 1. Consort diagram of responses to questionnaire



Fig. 2. Map to show residential area of respondents

Table 1. Characteristics of respondents

Characteristics	All	Men	Women
Subject number	589	244	345
Age			
Mean (SD) year	43.7(12.9)	45.7(13.7)	42.4(12.1)
Resident duration in the UK			
Mean (SD) years	14.5(11.9)	16.3(13.1)	13.3(10.7)
Generation			
First	94.7%	92.6%	95.4%
Second	3.6%	4.9%	2.6%
Unknown	1.7%	2.5%	2.0%
Language version			
Japanese	82.0%	77.0%	85.2%
English	17.7%	22.5%	14.2%
Both of them	0.5%	0.4%	0.6%
Education			
Before left school at 18	13.7%	14.7%	12.8%
Attended college or university	85.5%	84.8%	86.1%
Height			
Mean (SD) cm		170.5(6.2)	158.4(5.6)
Body weight			
Mean (SD) kg		69.0(9.8)	52.3(7.4)
Body mass index (BMI)			
Mean (SD) kg/m ²		23.7(3.1)	20.9(2.8)
Waist circumference			
Mean (SD) cm		82.7(7.4)	65.8(6.6)
Japanese meals			
Mean (SD) days / a week	3.5(2.2)	3.6(2.3)	3.4(2.2)
Eating low fat foods (%)	58.4%	53.7%	61.7%
Making a conscious effort to eat more fruit and vegetables	86.1%	79.5%	90.7%
Making effort to be physically active	66.7%	63.1%	69.3%

Table 2. Prevalence of doctor-diagnosed chronic disease amongst Japanese people living in the UK

Diagnosed disease	Prevalence (%)
Diabetes	3.7
Hypertension	13.1
Hyperlipidaemia	19.5
Myocardial infarction	0.7
Stroke	0.8

definition¹⁵⁾. The Japanese definition of obesity is BMI $\geq 25\text{kg/m}^2$ ¹⁶⁾. According to Japanese definitions of central obesity (BMI $\geq 25\text{kg/m}^2$, waist circumference: men $>85\text{cm}$, women $>90\text{cm}$)¹⁷⁾ the prevalence was 53(27.2)% in men and 3(1.3)% in women. The prevalence of self-reported doctor-diagnosed diabetes, hypertension, hyperlipidaemia, heart attack and stroke was 3.6%, 13.1%, 19.5%, 0.7% and 0.8% respectively (Table 2).

Tables 3 and 4 show that about 40% subjects reported their general health to be "excellent/very good". 60.4% reported they exercise regularly or occasionally. The rates of smoking were 25.9% in men and 12.0% in women. 45.1% of men and 22.8% of women regularly consumed alcohol.

We compared our data reports with those available for the Japanese in Japan taken from the nationwide survey of diabetes in Japan¹⁾, the National Health and Nutrition Survey in Japan in 2003¹³⁾ and with the resident population of the UK from the Health Survey for England in 2003¹⁴⁾. Compared to the Japanese living in Japan, our respondents reported better health, more physical activity and less smoking in men, although they reported higher alcohol consumption. On the other hand, compared

Table 3. Responses to health status questionnaires in Japanese and UK populations

	Japanese in the UK (J in UK)		Japanese in Japan (J in J)*		UK population (UK)**		J in UK v J in J	J in UK v UK
	n	%	n	%	n	%	Chi squared	Chi squared
							p	p
1. Would you say that in general your health is-								
Total subjects	583		9780		14833			
excellent/Very good	231	39.6	618	6.3	4959	33.4	p<0.0001	p<0.0001
Good	237	40.6	2182	22.3	6217	42.0		
Fair	100	17.2	5269	53.9	2718	18.3		
Poor/bad/very bad	15	2.6	1711	17.5	939	6.3		
2. During the past month, other than your regular job, did you participate in any physical activities or exercises such as walking for exercise or golf, running, gardening or swimming?								
Total subjects	583		6040		14836			
Regularly (more than 3 times a week)	135	23.2	1270	21.0	6166	41.5	p<0.0001	p<0.0001
Occasionally (less than 3 times a week)	217	37.1	314	5.2	3231	21.8		
Rarely (once a month)	93	16.0			1879	12.7		
Never	138	23.7	4456	73.8	3560	24.0		
3. Do you currently smoke any cigarettes, cigars or pipes?								
Total subjects	586		9110		14764			
Yes, currently smoke	104	17.7	2522	27.7	3745	25.4	p<0.0001	p<0.0001
No, ex-smoker	167	28.5	1055	11.6	4396	29.8		
No, never smoked	315	53.8	5533	60.7	6623	44.8		
4. How often do you have at least one drink of any alcoholic beverage ?								
Total subjects	586		9198		14750			
Regularly (more than 3 times a week)	188	32.1	2883	31.4	4885	33.1	p<0.0001	p<0.0001
Occasionally (less than 3 times a week)	168	28.7	753	8.2	4408	29.9		
Rarely (once a month or less)	105	17.9	970	10.5	3867	26.2		
Never	125	21.3	4592	49.9	1590	10.8		

* Data from the National Health and Nutrition Survey in Japan 2003¹³⁾** Data from the Health Survey for England 2003¹⁴⁾

to the UK population, they reported similar health, physical activities, alcohol consumption and smoking in men but less smoking in women (Tables 3 and 4). Fig. 3 shows that overweight rates (BMI \geq 25) are lower in the Japanese population compared to the UK population. Male Japanese in the UK report higher BMI than native Japanese, but females report lower BMI. The prevalence of self-reported doctor-diagnosed diabetes was similar among all groups. The prevalence of pre-diabetes or borderline diabetes in Japanese in the UK was low but the small numbers should be interpreted with caution (Table 5).

DISCUSSION

These data show the results a survey of Japanese people with respondents widely spread in the UK, and reflecting a demographic distribution concordant with UK population densities and immigrant population spread. We acknowledge that our data is subject to possible bias and differences relating to data ascertainment. Replies were received from 34.5% of those to whom requests were made, and we cannot be certain that this is a representative sample and we caution interpretation of the statistics where comparative percentages do not differ by more than 10%. There may be bias towards people interested in their own health as they may be more likely to reply to this questionnaire

Table 4. Responses to health status questionnaires in Japanese and UK populations by sex

	Men													Women																						
	Japanese in the UK (J in UK)						Japanese in Japan (J in J)*						UK population (UK)**						Japanese in the UK (J in UK)						Japanese in Japan (J in J)*						UK population (UK)**					
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%						
1. Would you say that in general your health is-							J in UK v J in UK v						J in UK v J in UK v						J in UK v J in UK v																	
							Chi squared						Chi squared						Chi squared						Chi squared											
							p						p						p						p											
							0.0001						0.0084						0.0001						0.0022											
							6.5						17.6						18.9						6.2											
							429						1162						2894						1556											
							17.5						52.1						55.4						17.5											
							797						2374						2894						1556											
							52.1						52.1						55.4						17.5											
							23.6						1075						1107						3457											
							1075						1075						1107						3457											
							6.8						310						308						2708											
							310						310						308						2708											
							4556						6602						5223						8231											
							4556						6602						5223						8231											
							39.8						34.1						39.5						32.9											
							34.1						34.1						39.5						32.9											
							241						6602						342						8231											
							241						6602						342						8231											
							243						6601						340						8234											
							6601						6601						340						8234											
							21.4						48.0						24.4						19.6											
							48.0						48.0						24.4						19.6											
							571						3169						699						2997											
							3169						3169						699						2997											
							35.4						20.0						38.6						23.2											
							20.0						20.0						38.6						23.2											
							153						1320						160						1910											
							1320						1320						160						1910											
							18.5						11.0						14.1						14.0											
							11.0						11.0						14.1						14.0											
							726						726						-						1153											
							726						726						-						1153											
							24.7						21.0						22.9						26.4											
							21.0						21.0						22.9						26.4											
							1749						1386						2707						2174											
							1386						1386						2707						2174											
							4204						6563						4906						8201											
							4204						6563						4906						8201											
							25.9						26.7						12.0						24.3											
							26.7						26.7						12.0						24.3											
							1967						1752						554						1993											
							1752						1752						554						1993											
							36.7						33.5						22.7						26.8											
							33.5						33.5						22.7						26.8											
							879						2199						177						2198											
							2199						2199						177						2198											
							37.4						39.8						65.3						48.9											
							39.8						39.8						65.3						48.9											
							1358						2612						4175						4010											
							2612						2612						4175						4010											
							4275						6559						4923						8191											
							4275						6559						4923						8191											
							45.1						42.0						22.8						26.0											
							42.0						42.0						22.8						26.0											
							2189						2755						694						2130											
							2755						2755						694						2130											
							27.8						31.0						29.3						29.0											
							31.0						31.0						29.3						29.0											
							389						2033						364						2375											
							2033						2033						364						2375											
							12.3						19.0						21.9						32.0											
							19.0						19.0						21.9						32.0											
							389						1246						581						2621											
							1246						1246						581						2621											
							14.8						8.0						26.0						13.0											
							8.0						8.0						26.0						13.0											
							1308						525						3284						1065											
							525						525						3284						1065											
							30.6						30.6						66.7						66.7											
							30.6						30.6						66.7						66.7											

* Data from the National Health and Nutrition Survey in Japan 2003¹³⁾** Data from the Health Survey for England 2003¹⁴⁾

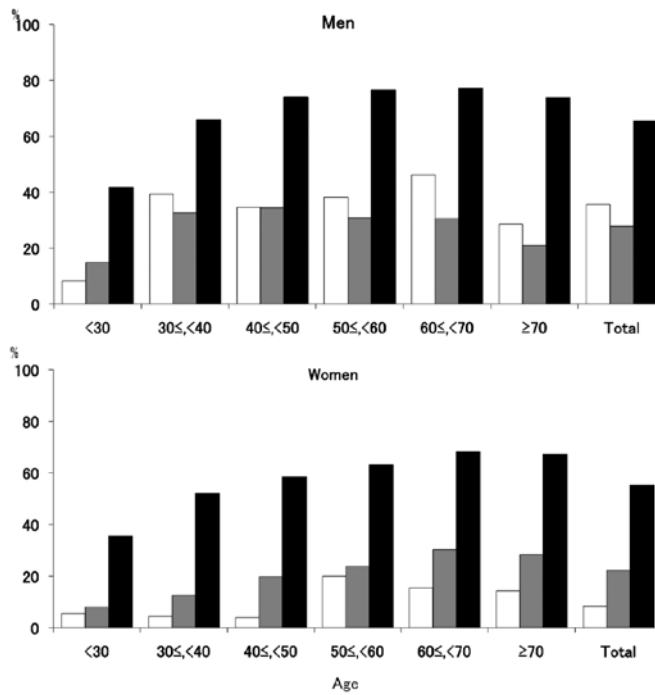


Fig. 3. Prevalence of overweight (BMI>25) by age and sex in Japanese and UK populations.
 □ Japanese living in the UK
 ■ Japanese living in Japan. Data from the National Health and Nutrition Survey in Japan 2003¹³⁾
 ■ UK population. Data from the Health Survey for England 2003¹⁴⁾

Table 5. Prevalence of self-reported diabetes amongst Japanese emigrants to the UK

variable	Japanese in the UK (%)	Japanese in Japan *	UK population **
Men			
Diabetes	6.6	5.5	4.3
Pre-diabetes	2.8	11.7	-
Women			
Diabetes	1.4	2.4	3.4
Pre-diabetes	0.6	4.6	-
Total			
Diabetes	3.7	3.7	3.8
Pre-diabetes	1.5	7.1	-

*Data from the Report of the Nationwide survey of Diabetes Mellitus in Japan¹⁾
 **Data from the Health Survey for England 2003¹⁴⁾

but on the other hand, those with disease states may respond positively. Nevertheless, judging from the comparisons that we have used there is no evidence of the migratory chronic disease burden seen in those who moved to Hawaii, Los Angeles, Seattle

and Sao Paulo. This may be because the majority of them were first generation, but Iunes *et al.*⁸⁾ have reported that the prevalence of diabetes among first generation Japanese-Brazilians was high. There are some caveats related to language as well.

Japanese in Japan employ understatement (reporting good health in only 6.8% of cases) compared to the UK population. It is likely that this linguistic characteristic may be changed by living the UK - whereby reports of general health being 'excellent/very good' converge to the UK norm.

Following migration to the West, the prevalence of diabetes among Japanese-Americans in those over 40 years of age is considerably higher than for indigenous Japanese, for example 18.9% in Hawaii, 13.7% in Los Angeles from 1978 to 1988⁴⁾ and 16-20% in Seattle from 1983 to 1988^{2, 3)}. Increasing rates over time have recently been reported in Japanese-Brazilians, from 22.6% in 1993 to 32.6% in 2000⁷⁾.

In marked contrast to those reports, the findings of our study show that Japanese people living in the UK have a profile that is generally healthy. Their lifestyle is similar to that found in the UK population and diverges from that reported by the Japanese in Japan, although this migrant population has a lower BMI than the native UK population. The average duration of residence in the UK is 15 years but 30% have been resident for more than 20 years. They typically eat Japanese foods three times weekly and 86% of them report making a conscious effort to eat more fruits and vegetables.

Our survey does not support the concept that migrant Japanese to the UK have high levels of chronic disease. Indeed the evidence from these data is that this population, in marked contrast to those of Brazil, Seattle, Hawaii and Los Angeles, is healthy. It is of interest that obesity has not become epidemic in this population. Overweight (BMI \geq 25) rates are about half that of the UK population in men, and in women the rates are 8% compared with 55%. It is also pertinent that smoking rates have declined in the UK relative to Japan. 28% of our respondents

reported giving up smoking. This implies that migration need not lead to the inevitability of poor lifestyle. In conclusion, the migratory disease burden seen in Japanese migrants to the US and Brazil was not apparent in this sample population in the UK.

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