

Patterns of Outpatient Visits by Japanese Male Expatriates in Thailand

Rie SAKAI¹, Som-Arch WONGKHOMTHONG², Eiji MARUI¹ and Suchart LAOBHRIPATR²

¹Department of Public Health, Juntendo University School of Medicine, Japan and ²Bangkok Hospital, Thailand

Abstract: Patterns of Outpatient Visits by Japanese Male Expatriates in Thailand: Rie SAKAI, *et al.* Department of Public Health, Juntendo University School of Medicine—Objective of this study is to clarify the health-related conditions of Japanese male expatriates in Thailand. Records of Japanese male expatriates in their 30s to 50s who consulted outpatient clinics at Bangkok Hospital in 2005 were analyzed for number and type of outpatient visits then compared with data from the “Patient Survey” 2005 for age-matched males in Japan. “Diseases of the respiratory system” and “Certain infectious and parasitic diseases” had a higher rate of diagnosis among Japanese men living in Thailand than those living in Japan. “Endocrine, nutritional and metabolic diseases,” and “Mental and behavioral disorders” had a lower rate of diagnosis among Japanese men living in Thailand than those in Japan. “Acute upper respiratory infections” accounted for 87.4% of “Diseases of the respiratory system” and “intestinal infections” accounted for 59.9% of “Certain infectious and parasitic diseases” among expatriates. Japanese male expatriates have a tendency of not visiting hospital when they have no subjective or objective symptoms. To support a healthy expatriate life, health information should be propagated widely and available support services, such as counseling via e-mail or fax, should be actively promoted. Expatriates should be informed of the availability of these services before they go abroad and during their stay.

(*J Occup Health 2008; 50: 103–113*)

Key words: Japanese expatriates, Overseas workers, Disease patterns

Expatriates are defined as individuals who stay in another country for more than three months by the Ministry of Foreign Affairs of Japan. According to a

report by the Ministry in 2006, there is a record-breaking number of 1,012,000 Japanese expatriates living abroad. In Thailand, in particular, there were 36,000 Japanese expatriates in 2005. This is an increase of approximately 12.0% on the previous year, and the 7th highest number of expatriates by country. Of these, around 17,000 are on overseas assignment from private companies and 500 on government business and 93.6% are males¹.

Of the studies conducted on the health-related conditions of expatriates^{2–7}, reports by Hamada⁵ and Uchikoshi *et al.*⁷ focused on Japanese expatriates living in Southeast Asia. Based on these reports, “Diseases of the respiratory system” and “Certain infectious and parasitic diseases” are frequent among this population. Acute diseases such as “acute upper respiratory infections” and “intestinal infections” ranked particularly high. These earlier reports were informative because appropriate preventive measures can decrease the prevalence of these diseases. To clarify the disease patterns of expatriates in a certain area, it is necessary to compare the disease patterns of expatriates, matching for age and gender, with those of the population living in their homeland. However, this comparison has not yet been made, and the health conditions of expatriates are not yet well understood.

In the present study, records of Japanese expatriates who consulted outpatient clinics at Bangkok Hospital in Thailand were analyzed to determine patterns of the outpatient visits. These patterns were then compared to those of Japanese people living in Japan using the “Estimated Outpatient Figures” from the “Patient Survey” conducted by the Ministry of Health, Labour and Welfare of Japan⁸. The specific objectives of this study were two-fold: first, to clarify the health problems of expatriates in Bangkok, Thailand, and second, to provide useful information for promoting the health of expatriates.

Methods

This study was conducted using patient medical records at Bangkok Hospital in Thailand, a 685-bed private

Received May 19, 2007; Accepted Oct 9, 2007

Correspondence to: R. Sakai, Department of Public Health, Juntendo University School of Medicine, 2–1–1 Hongo, Bunkyo-ku, Tokyo 113-8021, Japan

(e-mail: riesakai@med.juntendo.ac.jp)

general hospital located in central Bangkok. This hospital has the latest medical technology in Thailand and it therefore attracts many travelers and expatriates from developed countries seeking medical attention. The number of non-Thai patients treated at this hospital was over 90,000 in 2005, and the hospital has about 70 interpreters for over 28 languages, including English and Japanese. Many Japanese travelers and expatriates visit this hospital as Thai doctors and nurses who graduated from medical or nursing schools in Japan or who studied for certain periods in Japan attend to Japanese patients, and Japanese interpreters who are qualified as nurses in Japan work there.

The study period was from January 1, 2005 to December 31, 2005. Information was obtained regarding patient ID, age, gender, diagnosis, department providing care and reason for the patient's stay in Thailand. Records of patients living in Thailand as expatriates and aged older than 20 yr of age were selected for the investigation. The number of episodes of treatment was calculated, with repeated visits during the progress of the same disease calculated as 1 episode. The final diagnosis was taken if the diagnosis changed during the progress of the disease. Patient ID was erased after this procedure to protect patient privacy. The diagnoses were categorized according to the International Classification of Diseases 10th Revision (ICD-10). Ethical approval for this study was obtained from Bangkok Hospital Ethics Committee.

To identify disease patterns of Japanese adults, the "Estimated Outpatient Figures" from the Ministry of Health, Labour and Welfare's "Patient Survey" were used. These estimated figures are derived from the number of patients consulting the surveyed hospitals or clinics on the day of the survey. Therefore, even if a patient does have an illness, unless they visit on the day of the survey they will not be included in the estimated figure. This is recognized in the calculation of the total number of patients in the "Patient Survey." The latest reported "Estimated Outpatient Figures" are from the 2005 survey. The "Patient Survey" is carried out once every three years on all patients visiting a stratified random sample of hospitals and clinics in each prefecture. All patients consulting the facility between midnight to midnight on the appointed day, which was one of three days designated by each hospital between the 18th and 20th (Tuesday–Thursday) of October, 2005, or one day designated by each clinic of the 18th (Tuesday), 19th (Wednesday) or 21st (Friday) of October, 2005, were included in the survey. For the clinics, Thursday was avoided as it is often a closure day.

The total of estimated hospital and clinic outpatients in the "Patient Survey" was used for comparison. Cases relating to health examinations (Z00-13) and dental complaints (K00-08 and Z 46.3) were omitted from the final tally for the following reasons. First, as Bangkok

Hospital has a dedicated medical check-up department (from February 2006, "Health Promotion Centre") solely for health examinations, all patients examined here were recorded as "Health examination," so the number of health examinations extracted was in greater proportion to other disorders. Second, this hospital also deals with a great number of cosmetic dental cases, and it was not possible to distinguish them from genuine dental problems.

Results

Object of analysis

1) Number of expatriate patients attending Bangkok Hospital (Fig. 1)

During the survey period, 11,200 Japanese people consulted Bangkok Hospital, of which 9,623 were over and 1,577 under 20 yr of age. Of the patients over 20 yr of age, 7,319 were resident in Thailand (hereafter "Thailand patients") and 2,304 were travellers. Thailand patients consulted the hospital 27,720 times (including multiple visits by one person). Of these, a diagnosis was recorded for 5,796 patients, who made 15,045 hospital visits, of which we considered 9,895 hospital visits (3,837 patients) excluding 3,400 health examinations and 1,750 dental examinations. We examined the individual patient records, and as a result of calculating multiple visits by one person as a single episode, the number of episodes became 6,793.

Divided by gender and age, the overwhelming majority of episodes involved men in their 30s, 40s and 50s, representing 58.8% of episodes. It is speculated that this is because the majority of expatriates in Thailand are men assigned to work abroad by Japanese companies¹⁾. The companies tend to send experienced older workers overseas^{9, 10)}. According to a report from the Ministry of Health, Labour and Welfare, more than half of workers abroad hold management level positions¹¹⁾.

We found that there were markedly fewer episodes made by Thailand patients in their 20s than those in their 30s, 40s and 50s. This finding indicates that there are few workers in their 20s. For the comparative study with the "Patient Survey," Thailand patients clearly do not have the same age composition as the surveyed population in the "Patient Survey," especially with regard to those in their 20s. Therefore, we decided to continue by focusing our analysis on the 3,994 episodes involving the core group of men in their 30s, 40s and 50s.

2) "Estimated Outpatient Figures" from the Ministry of Health, Labour and Welfare's "Patient Survey" (Fig. 2)

In the 2005 Patient Survey, 7,092,400 patients (hereafter, "Domestic patients") consulted the surveyed hospitals or clinics on the day of the survey. We analyzed 5,754,900 patients excluding 84,200 health examinations (Z00-13) and 1,253,300 dental examinations (K00-08 and

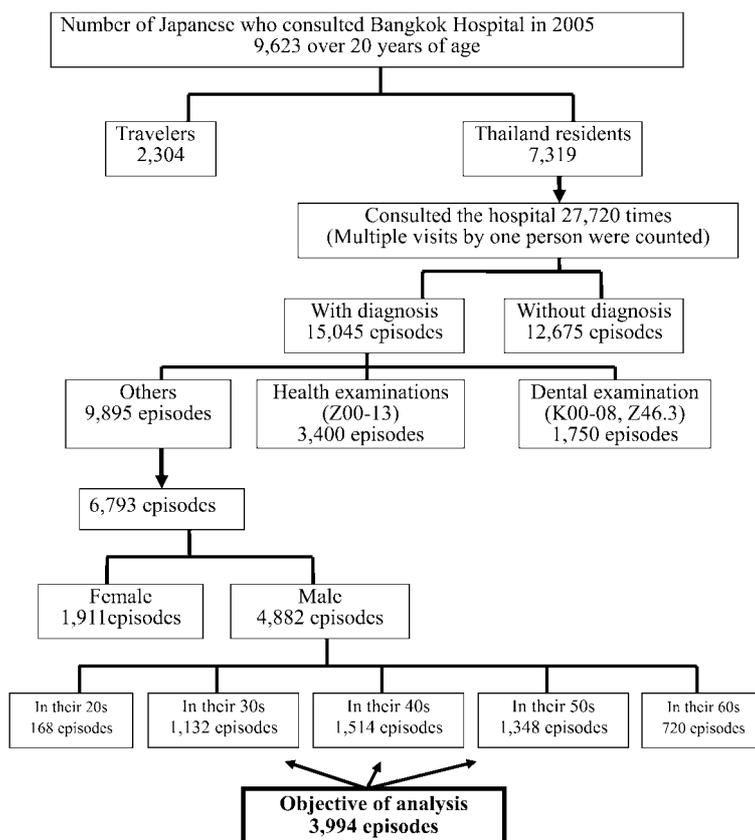


Fig. 1. Objective of analysis.

A diagnosis was recorded for 15,045 episodes, of which we considered 9,895 episodes excluding 3,400 health examinations and 1,750 dental examinations. We examined individual patient records, and as a result of calculating multiple visits by one person as a single episode, the number of episodes became 6,793.

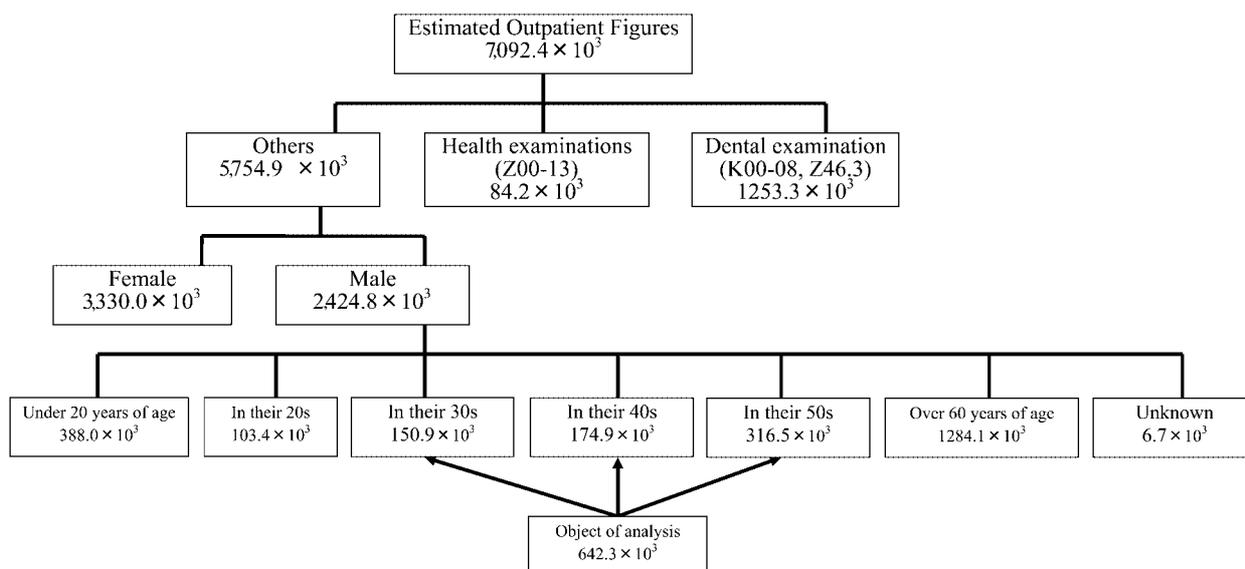


Fig. 2. Object of analysis.

In the 2005 Patient Survey, 7,092,400 patients consulted surveyed hospitals or clinics on the day of the survey. We analyzed 5,754,900 patients excluding 84,200 health examinations and 1,253,300 dental examinations. Divided by gender, 2,424,800 were men and divided by age, 642,300 patients were in their 30s, 40s and 50s (Note that figures were rounded to the nearest whole number, so the total of all age groups of men does not equal 2,424,800).

Z46.3). Divided by gender, 2,424,800 were men and divided by age, 642,300 patients were in their 30s, 40s and 50s (Note that figures were rounded to the nearest whole number and thus the total of all age groups of men does not equal 2,424,800).

Disease classification

1) ICD-10 major categories (Table 1)

While “Diseases of the respiratory system” were less frequent in the older age group than in the younger age group among Domestic patients, it was overwhelmingly the most frequent ICD-10 category among Thailand patients, irrespective of age. Also, while “Certain infectious and parasitic diseases” ranked low among Domestic patients, it ranked high in Thailand patients. Although “Diseases of the circulatory system” ranked high among Domestic patients, it ranked low among Thailand patients. “Diseases of the musculoskeletal system and connective tissue” ranked high among Domestic patients, but ranked low among Thailand patients. “Endocrine, nutritional and metabolic diseases” were more frequent in the older age groups of Domestic patients, whereas there were very few Thailand patients consulting the hospital for these diseases, which thus ranked low. While “Mental and behavioural disorders” were frequent among Domestic patients in the younger age group, there were only a few episodes among Thailand patients, with all groups ranking below 10th place.

2) ICD-10 subcategories

Diseases of the respiratory system (Table 2): In the breakdown of respiratory diseases, “acute upper respiratory infections,” which is subcategorized as J00–J06 under ICD-10, represented 87.4% of consultations for “Diseases of the respiratory system” (1,335 episodes) in Thailand patients. In contrast, “acute upper respiratory infections” represented 40.6% of consultation for “Diseases of the respiratory system” (30,100 episodes) in Domestic patients.

Certain infectious and parasitic diseases (Table 3): In Thailand patients, “intestinal infections” were overwhelmingly most frequent. In Domestic patients, the frequency of viral hepatitis ranked high, but there were few episodes in Thailand patients.

Diseases of the circulatory system (Table 4): “Essential (primary) hypertension” was consistently high in both Domestic and Thailand patients. In Domestic patients, the frequency of serious diseases such as “cerebral infarction,” “angina,” and “brain hemorrhage” was high, but frequency was low in Thailand patients, and “hemorrhoids” followed “essential (primary) hypertension.”

Diseases of the musculoskeletal system and connective tissue (Table 5): “Soft tissue disorders” were frequent in Thailand patients, but “disc disorders” and “spondylopathies” which were often found in Domestic patients were infrequent.

Lifestyle-related disease (Table 6): Among Thailand patients there were few episodes for the major ICD-10 category “Endocrine, nutritional and metabolic diseases.” Comparing Thailand patients and Domestic patients for “hypercholesterolemia,” “diabetes,” “essential hypertension” and “hyperuricemia,” which within this category are particularly influenced by lifestyle factors, the proportion out of the total visits was lower for Thailand patients than for Domestic patients.

Seasonal variation of hospital visits: The total number of hospital visits increased in March, June and December and decreased in April (Fig. 3). For analysis of seasonal variation, we focused on “Diseases of the respiratory system,” and in particular “acute upper respiratory infections,” which is subcategorized as J00–J06 under ICD-10, and “Certain infectious and parasitic diseases,” in particular “intestinal infections,” which is subcategorized as A00–A09 under ICD-10, since these were the most frequent diseases among Thailand patients.

“Diseases of the respiratory system” were frequent in March and December. The vast majority of cases involved “acute upper respiratory infections,” which was also frequent in March and December (Fig. 4). “Certain infectious and parasitic diseases” were frequent in June. “Intestinal infections” showed an identical monthly tendency (Fig. 5).

Discussion

This study highlights the health problems of Japanese males living in Thailand, with analysis focusing on those in their 30s through 50s among whom medical consultations were the most frequent. Their health problems were then compared to those of age-matched males in Japan using the “Estimated Outpatient Figures” from the “Patient Survey” conducted by the Ministry of Health, Labour and Welfare of Japan⁸). Although the research methods of these two data sets vary, with Bangkok hospital data representing one-year observation and “Patient Survey” data representing one-day observation, the “Patient Survey” data was used for comparison because this is the most reliable data describing disease patterns of Japanese people living in Japan for two reasons. First, if one-year observation from one hospital is used, there will always be selection bias; for example the sample population can vary depending on the location of the hospital (residential area, business area, small town, city, etc.) and the type of the hospital (university or municipal). Second, the sample size in the

Table 1. ICD-10 Major Categories

Ranking	Japanese patients, Bangkok Hospital				2005 Estimated Outpatient Figures			
	30-60 year old males (n=3,994)				30-60 year old males (n=642.3×10 ³)			
	Disease	Episode	(%)		Disease	n×10 ³	(%)	
1	Diseases of the respiratory system	1,527	38.2		Diseases of the circulatory system	84.7	13.2	
2	Certain infectious and parasitic diseases	464	11.6		Diseases of the musculoskeletal system and connective tissue	84.1	13.1	
3	Diseases of the digestive system	309	7.7		Diseases of the respiratory system	74.2	11.6	
4	Diseases of the skin and subcutaneous	252	6.3		Injury*	57.5	9.0	
5	Diseases of the circulatory system	244	6.1		Mental and behavioural disorders	55.9	8.7	
6	Diseases of the eye and adnexa	220	5.5		Endocrine, nutritional and metabolic	52.9	8.2	
7	Diseases of the musculoskeletal system and connective tissue	182	4.6		Diseases of the digestive system	46.2	7.2	
8	Health services**	129	3.2		Certain infectious and parasitic Diseases	32.6	5.1	
9	Injury*	121	3.0		Diseases of the skin and subcutaneous	32.6	5.1	
10	Endocrine, nutritional and metabolic	121	3.0		Diseases of the genitourinary system	32.5	5.1	
	Others	426	10.7		Others	89.1	13.9	
	Males in their 30s (n=1,132)				Males in their 30s (n=150.9×10 ³)			
1	Disease of the respiratory system	490	43.3		Diseases of the respiratory system	29.1	19.3	
2	Certain infectious and parasitic disease	153	13.5		Mental and behavioural disorders	20.2	13.4	
3	Disease of the skin and subcutaneous	90	8.0		Injury*	19.9	13.2	
4	Diseases of the digestive system	89	7.9		Diseases of the musculoskeletal system and connective tissue	16	10.6	
5	Diseases of the eye and adnexa	58	5.1		Diseases of the skin and subcutaneous	11	7.3	
6	Disease of the musculoskeletal system and connective tissue	44	3.9		Diseases of the digestive system	9	6.0	
7	Injury*	42	3.7		Certain infectious and parasitic disease	7.4	4.9	
8	Health services**	32	2.8		Diseases of the eye and adnexa	6.7	4.4	
9	Abnormal clinical findings***	28	2.5		Diseases of the genitourinary system	6	4.0	
10	Diseases of the genitourinary system	24	2.1		Endocrine, nutritional and metabolic	5.6	3.7	
	Others	82	7.2		Others	20	13.3	
	Males in their 40s (n=1,514)				Males in their 40s (n=174.9×10 ³)			
1	Disease of the respiratory system	616	40.7		Diseases of the musculoskeletal system and connective tissue	23.4	13.4	
2	Certain infectious and parasitic disease	193	12.7		Diseases of the respiratory system	21.5	12.3	
3	Diseases of the digestive system	118	7.8		Mental and behavioural disorders	18.2	10.4	
4	Diseases of the skin and subcutaneous	80	5.3		Diseases of the circulatory system	18.1	10.3	
5	Diseases of the eye and adnexa	79	5.2		Injury*	16.4	9.4	
6	Diseases of the circulatory system	69	4.6		Endocrine, nutritional and metabolic	14.4	8.2	
7	Diseases of the musculoskeletal system and connective tissue	62	4.1		Diseases of the digestive system	12.5	7.1	
8	Health services**	57	3.8		Certain infectious and parasitic diseases	9.5	5.4	
9	Injury*	46	3.0		Diseases of the skin and subcutaneous	9.1	5.2	
10	Diseases of the ear and mastoid process	44	2.9		Diseases of the genitourinary system	7.8	4.5	
	Others	150	9.9		Others	24	13.7	
	Males in their 50s (n=1,348)				Males in their 50s (n=316.5×10 ³)			
1	Diseases of the respiratory system	421	31.2		Diseases of the circulatory system	61.2	19.3	
2	Diseases of the circulatory system	155	11.5		Diseases of the musculoskeletal system and connective tissue	44.7	14.1	
3	Certain infectious and parasitic Diseases	118	8.8		Endocrine, nutritional and metabolic	32.9	10.4	
4	Diseases of the digestive system	102	7.6		Diseases of the digestive system	24.7	7.8	
5	Diseases of the eye and adnexa	83	6.2		Diseases of the respiratory system	23.6	7.5	
6	Diseases of the skin and subcutaneous	82	6.1		Injury*	21.2	6.7	
7	Diseases of the musculoskeletal system and connective tissue	76	5.6		Diseases of the genitourinary system	18.7	5.9	
8	Endocrine, nutritional and metabolic	67	5.0		Mental and behavioural disorders	17.5	5.5	
9	Diseases of the genitourinary system	42	3.1		Certain infectious and parasitic Diseases	15.7	5.0	
10	Diseases of the ear and mastoid process	42	3.1		Neoplasms	13.5	4.3	
	Others	160	11.9		Others	42.8	13.5	

**Factors influencing health status and contact with health services

*Injury, poisoning and certain other consequences of external causes

***Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified

Table 2. Diseases of the respiratory system: ICD-10 subcategories

Ranking	Japanese patients, Bangkok Hospital 30–60 yr old males (n=1,527)			2005 Estimated Outpatient Figures 30–60 yr old males (n=74.2 × 10 ³)		
	Disease	Episode	(%)	Disease	n × 10 ³	(%)
1	Acute pharyngitis and Acute tonsillitis	736	48.2	Acute pharyngitis and Acute tonsillitis	13.6	18.3
2	Acute nasopharyngitis [common cold]	242	15.8	Acute bronchitis	13.2	17.8
3	Acute bronchitis	91	6.0	Asthma	11.3	15.2
4	Acute sinusitis	86	5.6	Vasomotor and allergic rhinitis	7.5	10.1
5	Vasomotor and allergic rhinitis	23	1.5	Chronic sinusitis	5.7	7.7
6	Bronchitis, not specified as acute or chronic	17	1.1	Acute sinusitis	2.4	3.2
7	Asthma	10	0.7	Acute nasopharyngitis [common cold]	2.1	2.8
8	Acute laryngitis and tracheitis	8	0.5	chronic obstructive disease	1.6	2.2
9	Chronic sinusitis	8	0.5	Bronchitis, not specified as acute or chronic	1.3	1.8
10	Pneumonia	5	0.3	Acute laryngitis and tracheitis	0.8	1.1
	Others	301	19.7	Others	14.7	19.8

Table 3. Certain infectious and parasitic diseases: ICD-10 subcategories

Ranking	Japanese patients, Bangkok Hospital 30–60 yr old males (n=464)			2005 Estimated Outpatient Figures 30–60 yr old males (n=32.4 × 10 ³)		
	Disease	Episode	(%)	Disease	n × 10 ³	(%)
1	Intestinal infections	278	59.9	Hepatitis C	10.9	33.6
2	Dermatophytosis	40	8.6	Dermatophytosis	6.7	20.7
3	Zoster [herpes zoster]	10	2.2	Hepatitis B	3.5	10.8
4	Candidiasis	6	1.3	Intestinal infections	3.3	10.2
5	Herpesviral [herpes simplex] infections	6	1.3	Zoster [herpes zoster]	1.5	4.6
6	Respiratory tuberculosis	5	1.1	Herpesviral [herpes simplex] infections	0.6	1.9
7	Hepatitis B	4	0.9	Respiratory tuberculosis	0.4	1.2
8	Hepatitis C	1	0.2	Syphilis	0.1	0.3
9	Sequelae of tuberculosis	1	0.2	Gonococcal infection	0.1	0.3
10	Gonococcal infection	1	0.2	Candidiasis	0.1	0.3
	Others	112	24.1	Others	5.2	16.0

Table 4. Diseases of the circulatory system: ICD-10 subcategories

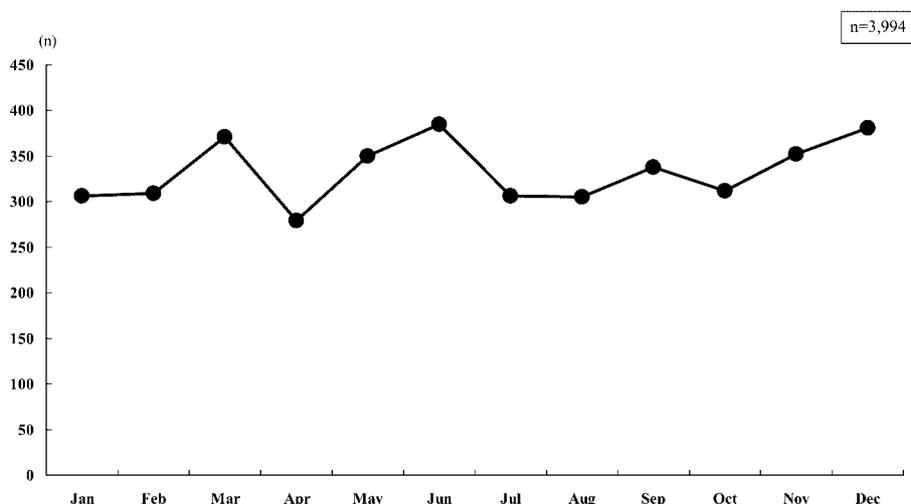
Ranking	Japanese patients, Bangkok Hospital 30–60 yr old males (n=243)			2005 Estimated Outpatient Figures 30–60 yr old males (n=84.7 × 10 ³)		
	Disease	Episode	(%)	Disease	n × 10 ³	(%)
1	Essential (primary) hypertension	183	75.3	Essential (primary) hypertension	56.2	66.4
2	Haemorrhoids	16	6.6	Cerebral infarction	5.2	6.1
3	arrhythmias and conduction disorders	8	3.3	Angina pectoris	4.6	5.4
4	Angina pectoris	6	2.5	Arrhythmias and conduction disorders	4.4	5.2
5	Old myocardial infarction	6	2.5	Intracerebral haemorrhage	3.0	3.5
6	Cerebral infarction	4	1.6	Haemorrhoids	2.6	3.1
7	Cardiomyopathy	3	1.2	Heart failure	1.1	1.3
8	Nonrheumatic Endocarditis	3	1.2	Old myocardial infarction	0.9	1.1
9	Phlebitis and thrombophlebitis	2	0.8	Nonrheumatic Endocarditis	0.9	1.1
10	Varicose veins of lower extremities	1	0.4	Acute myocardial infarction	0.6	0.7
	Others	11	4.5	Others	5.2	6.1

Table 5. Diseases of the musculoskeletal system and connective tissue: ICD-10 subcategories

Ranking	Japanese patients, Bangkok Hospital (n=182)			2005 Estimated Outpatient Figures (n=84.1 × 10 ³)		
	Disease	Episode	(%)	Disease	n × 10 ³	(%)
1	Soft tissue disorders	68	37.4	Intervertebral disc disorders	22.6	26.9
2	Lumbago or Sciatica	36	19.8	Spondylopathies	17.4	20.7
3	Gout	32	17.6	Lumbago or Sciatica	7.3	8.7
4	Intervertebral disc disorders	15	8.2	Gout	5.9	7.0
5	Shoulder lesions	10	5.5	Soft tissue disorders	5.6	6.7
	Others	21	11.5	Others	25.3	30.1

Table 6. Lifestyle-related diseases

Disease	Japanese patients, Bangkok hospital		2005 Estimated Outpatients Figures	
	Episode	Proportion out of total visits	n × 10 ³	Proportion out of total visits
Insulin-dependent diabetes mellitus	1	0.0	3.4	0.5
Non-insulin-dependent diabetes mellitus	54	1.4	17.6	2.7
Hyperlipidemia	35	0.9	14.1	2.2
Essential (primary) hypertension	183	4.6	56.2	8.7
Gout	32	0.8	5.9	0.9

**Fig. 3.** Seasonal variation of hospital visits.

“Patient Survey” is large enough to be valid for describing disease patterns of Japanese people living in Japan.

The findings of the present study are in agreement with those of previous studies⁵⁻⁷. For example, “Diseases of the respiratory system” and “Certain infectious and parasitic diseases” had higher rates of diagnosis among Japanese living in Thailand than those living in Japan while “Endocrine, nutritional and metabolic diseases” and “Mental and behavioral disorders” had lower rates of diagnosis among Japanese living in Thailand than those

living in Japan.

In a similar survey carried out by Uchikoshi *et al.* of two medical institutions in Thailand and Malaysia⁷, there were also few diagnoses of “Endocrine, nutritional and metabolic diseases.” Based on the results of the Labour Welfare Corporation’s 2000 and 2001 health consultations with Japanese living locally in Chiang Mai, Thailand, in which as many as 10.0% were suffering from lifestyle diseases such as high blood pressure and hyperlipidemia, Uchikoshi *et al.* remarked that people tended not to

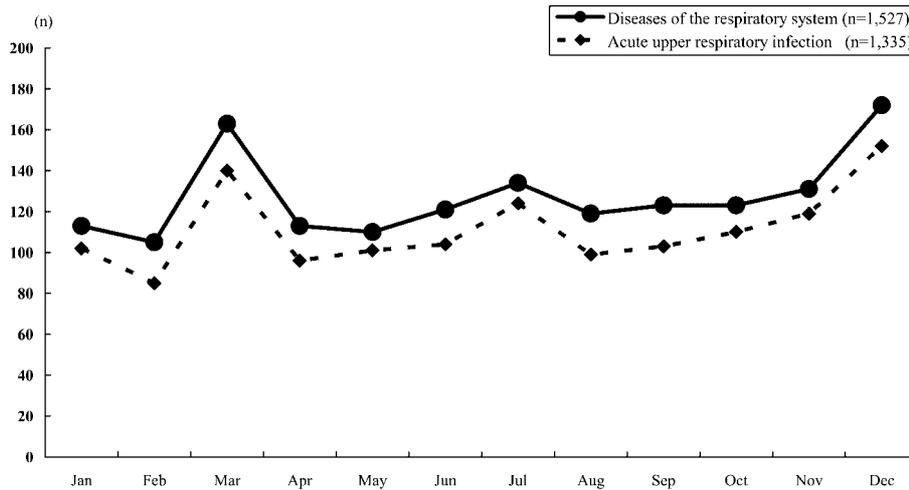


Fig. 4. Seasonal variation of “Diseases of the respiratory system” and acute upper respiratory infection.

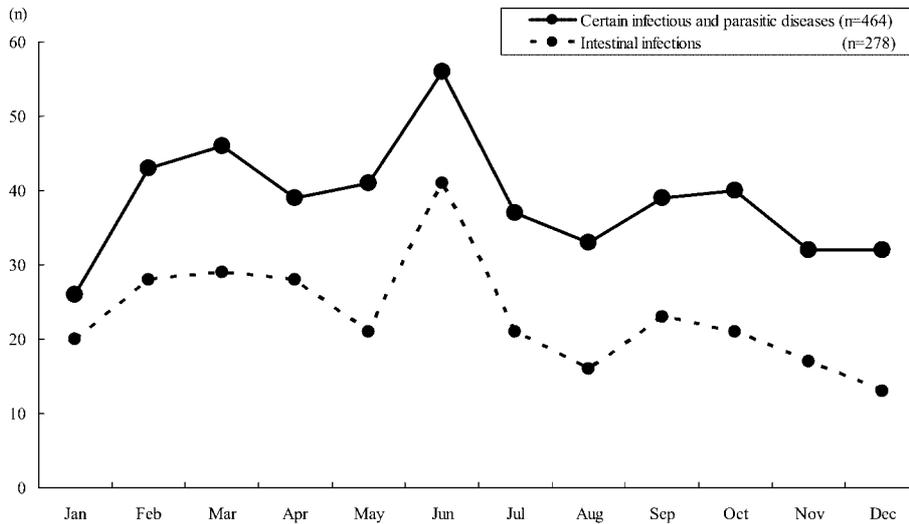


Fig. 5. Seasonal variation of “Certain infectious and parasitic diseases” and Intestinal infections.

consult local facilities for lifestyle disease as they cause no subjective symptoms⁷⁾. In our survey, the proportion out of the total number of hospital visits for “hypercholesterolemia,” “diabetes,” “essential hypertension” and “hyperuricemia,” the development of all of which are thought to be influenced by lifestyle, was found to be lower among Thailand patients than among Domestic patients. This is a different trend to those diseases that have clear presentation, such as infectious diseases. In the light of reports comparing survey data of pre- and post-overseas assignments, where important indicators of lifestyle diseases (cholesterol, AST, ALT, γ -GTP) have deteriorated following the assignment^{12, 13)}, encouraging early medical consultation

locally even where there are no subjective symptoms, bearing in mind the possibility of lifestyle diseases, could be effective.

Furthermore, there were few consultations for “Mental and behavioral disorders” among Thailand patients. With these disorders, subtle nuances of language are important, and more than with other diseases, there is a need for treatment to be carried out in the mother tongue. As there are a number of reports of acute onset mental disorder during long periods overseas¹⁴⁻¹⁶⁾, an appropriate response is desirable. However, in addition to the language problem with these disorders, a trend for delayed consultation due to the cost of treatment, differences in health service provision and stigma regarding psychiatric

consultation has been identified^{2, 17, 18}), and our findings that consultations for these disorders were infrequent may be rooted in this trend. As treatment in the mother tongue is required, it is difficult to entrust the response to these disorders solely to local institutions, and thus there is a need to provide a more comprehensive system of services and information from companies assigning workers overseas and the home country's health service that goes beyond individual corporate frameworks.

Detailed examination based on the ICD-10 subcategories revealed that 87.4% of Thailand patients' consultations for "Diseases of the respiratory system" were for "acute upper respiratory infections," and 59.9% of consultations for "Certain infectious and parasitic diseases" were for "intestinal infections." Thus, in the study area of Bangkok, acute infectious diseases were more frequent, a result agreeing with previously reported data⁷.

Previous studies have reported that frequent minor conditions such as "acute upper respiratory infections" and "intestinal infections" were frequent among Thailand patients. Our study newly showed that minor conditions such as "Hemorrhoids," "Arrhythmias and Conduction disorders," "Soft tissue disorders" and "Lumbago or Sciatica" were also frequent as well. Our study also showed that relatively critical conditions such as "Cerebral infarction," "Angina pectoris," "Intervertebral disc disorders" and "Spondylopathies" were infrequent among Thailand patients.

From this the following three possibilities are perceived. First, under the occupational health and safety law for the healthcare of overseas workers, it is the responsibility of employers to organize health examinations for employees stationed overseas for more than 6 months before and after their placement¹⁹. It is possible that since this health check plays a certain role in ensuring that the subjects of overseas placements are healthy, few consultations are for severe disorders. While this study included freelance workers, it is thought that those who are working abroad of their own choice are likely to avoid living abroad if they have chronic ailments, a possible explanation for the small number of consultations we saw for severe disorders. Second, people living overseas might feel the need to seek emergency care when they develop apparent objective and subjective symptoms, such as fever, cough, diarrhoea, etc, and consult a doctor early. Third, people living overseas might return to their homeland temporarily and consult a medical facility there when they suffer from a severe condition. Takeuchi *et al.* conducted a questionnaire survey and reported that many Japanese people living in Malaysia were concerned about the effectiveness of local medical treatment and wondered if they needed to return home temporarily when they had health problems²⁰. At a later date the development of health awareness and

consultation behaviour of overseas workers should be examined, including detailed interviews with individual local Japanese people.

The climate in Bangkok is tropical monsoon. The seasons are divided into two: a dry season between November and April and a rainy season between May and October. The cold season is between November and February, while the hot season is between March and May, with April being the hottest month. The total number of hospital visits decreased in April, possibly due to the high temperature in this month. In previous studies by Uchikoshi *et al.*, "Diseases of the respiratory system" were more frequent in the dry season^{7, 21}. Uchikoshi *et al.* point out (1) the effectiveness of mucous membranes in the air passages diminishes, (2) dust and automobile exhaust are stirred up and irritates the respiratory tract and (3) viral infections spread more readily during the dry season. In our study, the number of hospital visits for "Diseases of the respiratory system," in particular "acute upper respiratory infections," varied throughout the dry and rainy seasons. However, the months of most frequent hospital visits for "Diseases of the respiratory system," March and December, are both in the dry season and the total number of hospital visits during the dry season was larger than during the rainy season. These results suggest that "Diseases of the respiratory system" are more frequent in the dry season, as reported by Uchikoshi *et al.* as well.

The number of hospital visits for "Certain infectious and parasitic diseases," in particular "intestinal infections," was frequent at the beginning of the rainy season, and the total number of hospital visits for this condition during the rainy season was larger than during the dry season. These results suggest that "Certain infectious and parasitic diseases" are more frequent in the rainy season, which is also consistent with the studies by Uchikoshi *et al.*⁷ The vast majority of "intestinal infections" were "Diarrhea and gastroenteritis of presumed infectious origin" which is subcategorized as A09 under ICD-10, indicating that causative antigens are not detected. Bacterial intestinal infections are likely to spread under conditions of high temperature and humidity²². The results we report are most likely due to the hot and humid climate of Bangkok. Both Japanese people living in Thailand and those who plan to live in Thailand should be informed of these seasonal variations, and preventive measures appropriate to these seasonal variations should be promoted. For example, gargling and hand-washing should be emphasized during the dry season to prevent "acute upper respiratory infections" and hand-washing and avoiding undercooked food should be emphasized during the rainy season to prevent "intestinal infections." However, conclusions on seasonal variation cannot be made from a one-year observation. Several years of continual observation will be needed, and we

will be reporting such findings in the near future.

Health is a major concern when living abroad. Many Japanese expatriates are likely to be very anxious about health issues, and disseminating health information such as the results of this study using a common communication medium like the internet can be effective in reducing their anxiety. The Japanese Overseas Health Administrations Center provides health-related consultations for expatriates via e-mail and fax from overseas²³. Such support services should be actively promoted, and expatriates should be informed of the availability of these services before they go abroad and during their stay.

Although there are currently no official statistical data concerning the use of hospitals in Thailand by expatriates, most Japanese expatriates in Bangkok visit three private hospitals including Bangkok hospital, because these hospitals provide services in Japanese. This study used data collected in only one of these hospitals. Despite this limitation, our sample size is large, and because most expatriates develop their illnesses under similar environmental conditions, we consider these results to be valuable as a first step in examining the health conditions of Japanese expatriates in Thailand.

The full disease pattern of Japanese expatriates living in Thailand and continual observation over a period of several years should be explored in cooperation with other local medical facilities in order to understand this population's health-related problems. Similar surveys should be conducted in each country to explore the health problems of local expatriates since social hygiene and medical circumstances can differ widely.

Conclusions

1. "Diseases of the respiratory system" and "Certain infectious and parasitic diseases" had higher rates of diagnosis among Japanese living in Thailand than in Japan. "Diseases of the circulatory system," "Diseases of the musculoskeletal system and connective tissue," "Endocrine, nutritional and metabolic diseases," and "Mental and behavioral disorders" had lower rates of diagnosis among Japanese living in Thailand than in Japan.
2. Detailed examination based on the ICD-10 subcategories revealed that 87.4% of Thailand patients' consultations for "Diseases of the respiratory system" were for "acute upper respiratory infections," and 59.9% of consultations for "Certain infectious and parasitic diseases" were for "intestinal infections." Thus, in the study area of Bangkok, acute infectious diseases were more frequent.
3. Minor health conditions were frequent among Thailand patients. This is because companies send only healthy workers overseas. In addition, people living overseas might feel the need to seek emergency care early when

they develop apparent objective and subjective symptoms. In contrast, people might feel the need to return to their homeland for medical attention when they have a severe health problem. At a later date the development of health awareness and consultation behaviour of overseas workers should be examined, including detailed interviews with individual local Japanese people.

4. "Endocrine, nutritional and metabolic diseases," and "Mental and behavioral disorders" had lower rates of diagnosis among Japanese living in Thailand than in Japan. This indicates that Japanese living in Thailand have a tendency not to visit hospital when they have no subjective or objective symptoms. Thus, there is a need to provide a more comprehensive system of services and information for companies assigning workers overseas and the home country's health service that goes beyond individual corporate frameworks.
5. To support a healthy expatriate life, health information should be propagated widely and available support services such as counseling via e-mail or fax should be actively promoted. Expatriates should be informed of the availability of these services before they go abroad and during their stay.

Acknowledgment: We would like to express our sincere appreciation to the personnel in the TTC section and in the Japan Medical Services Department at Bangkok Hospital for their kind support.

References

- 1) The Ministry of Consular Affairs, Consular Affairs Bureau, Consular and Migration Policy Division. The Number of Japanese Expatriates, 2006 edition. (online), available from <<http://www.mofa.go.jp/mofaj/toko/tokei/hojin/05/pdfs/2.pdf>>, (accessed 2007-04-07) (in Japanese).
- 2) Patel D, Easmon C, Seed P, Dow C and Snashall D: Morbidity in expatriates—a prospective cohort study. *Occup Med* 56, 345–352 (2006)
- 3) Matthews CMT and Nelson MR: Self-rated health in a population of expatriate workers and partners in Riyadh, Saudi Arabia. *Occup Med* 54, 585–586 (2004)
- 4) Licciardone JC: Characteristics of short-term travelers and expatriates visiting an international travel medicine clinic in the United States. *J Travel Med* 8, 210–212 (2001)
- 5) Hamada A: Current situation of disease among the Japanese living in foreign countries. *Biomed Perspect* 8, 282–289 (1999) (in Japanese)
- 6) Suzuki R, Tatsumi Y and Ooe K: Disease trend among Japanese expatriates. *Jpn Med J* 3899, 39–48 (1999) (in Japanese)
- 7) Uchikoshi A, Hamada A, Iizuka T, Okuzawa H, Unachak V, Thomas J and Basugi N: Disease trends among Japanese expatriates living in Southeast Asia.

