RESEARCH COMMUNICATION

Attitudes of Japanese Primary Care Physicians toward Publicly Endorsed Periodic Health Examinations: a Cross Sectional Survey

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Abstract

Background: Despite the lack of evidence for efficacy, an annual health examination has been advocated for the general population by the Japanese government. We conducted a cross-sectional survey to understand the attitudes of Japanese physicians toward the annual examinations. Methods: In October 2003, a questionnaire was mailed to 1971 physicians registered with Aichi Prefecture Medical Association as internists. The survey was designed to determine their opinions about the effectiveness of the periodic health examination and each of its components. Results: The response rate was 37%. Eighty-five percent believed that a periodic health examination was effective. Nearly 80% believed that height and weight should be measured, and more than 90% supported blood pressure measurements. Nearly 70% supported a physical examination of chest and abdomen. About half believed that vision and hearing tests should be performed for all ages. More than 90% considered performing a variety of laboratory tests valuable. Three-quarters supported hepatitis B surface antigen and hepatitis C antibody determinations. Seventy to eighty percent valued the screening tests for lung, stomach, colon, breast and cervical cancer. Conclusions: Most Japanese primary care physicians believe that a comprehensive annual health examination as currently endorsed by public health authorities is effective.

Keywords: Annual physical examination - health personnel attitude - physician's practice patterns

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Introduction

The concept of periodic health examination was first endorsed in 1861 in the hope that it will be effective in early detection and treatment of diseases (Dobell,1861). The American Medical Association officially endorsed the comprehensive annual health examination in 1920s (Emerson, 1923). Since then, it had become the standard of care until 1970s, when the evidence-based approaches to the preventive health services were beginning to be applied (Frame and Carlson, 1975). Three controlled trials showed that the comprehensive periodic health examination was not effective in improving the health of the general populations (Olsen and Kane, 1976; The South-East London Screening Study Group, 1977; Friedman, Collen and Fireman,1986). During the past 20 years, evidence-based guidelines have been published in North America which do not recommend a routine annual physical examinations, including a variety of laboratory tests and imaging studies (Canadian Task Force on the Periodic Health Examination, 1979; U.S. Preventive Services Task Force, 1996). Instead, the guidelines recommend that physicians should take a case-finding approach that they offer patients preventive services of proven effectiveness during their visits for other medical problems (Canadian Task Force on the Periodic Health Examination, 1979; U.S. Preventive Services Task Force, 1996).

Despite the lack of evidence, the Japanese government has advocated a comprehensive annual health examination for the general population. Article 66 of the occupational safety and health law enacted in 1972 requires all Japanese employees working in public service agencies or corporations receive an annual medical check-up including a general history, physical examination, blood tests, urinalysis, chest radiography and electrocardiogram (Japanese International Center for Occupational Safety and Health website, 2006). In addition, screening tests for colon cancer, cervical cancer, endometrial cancer, breast cancer, gastric cancer, and hepatitis B and C are also actively endorsed by many public health authorities. As a result, 60.4% of the general Japanese population over the age of 20 years received some type of health examination during the year 2000 (Health and Welfare Statistics Association, 2003). Meanwhile, due in part to a growing interest in evidence-based medicine in Japan,

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Table 1. Demographic Characteristics of Respondents

Characteristics		No.	%
Age (years)	<50	180	24.9
	50-59	247	34.2
	60-69	144	19.9
	>=70	146	20.2
	Missing data	5	0.7
Sex	Male	662	91.7
	Female	58	8.1
	Missing data	2	0.3
Specialty			
Generalist Internal Medicine		264	36.6
	Subspecialist	272	37.7
	Pediatrics	35	4.8
	Others	84	11.6
	Missing data	67	9.3
Practice setting	Private office	666	92.2
	Hospital	47	6.5
	Others	6	0.8
	Missing data	3	0.4
Proportion of working hours, periodic health examination			
/total (%)	<10	356	46.3
	>=10	333	46.1
	Missing data	33	7.6
Medical conditions			
Smoke	Yes	159	22.0
	No	559	77.4
	Missing data	4	0.6
Obesity	Yes	208	28.8
	No	506	70.1
	Missing data	8	1.1
Hypertension	Yes	199	27.6
	No	517	71.6
	Missing data	6	0.8
Hyperlipidemia	Yes	225	31.2
	No	491	68.0
	Missing data	6	0.8
Diabetes mellitus	Yes	83	11.5
	No	633	87.7
	Missing data	6	0.8
Cancer	Yes	39	5.4
	No	675	93.5
	Missing data	8	1.1

GP: General Practice, GIM: General Internal Medicine

there has recently been some efforts to critically review the contents of the annual physical examination for the Japanese population. Two reports funded by the Japanese Ministry of Health, Labour and Welfare questioned the evidence base of many components of the annual physical examination currently endorsed for the Japanese population (Hisamichi, 2000; Fukui, 2004).

We conducted a cross-sectional survey to examine the attitudes of Japanese physicians toward the publicly endorsed, but not necessarily evidence-based, annual physical examinations and its component tests.

Methods

The survey used a postal, self-administered questionnaire evaluating the opinions of physicians about the effectiveness of periodic health examination and each of its components. The questionnaire was distributed by mail in October 2004 and returned by mail during the following three months. Participants included the 1,971 physicians who are registered as internists in the Aichi Medical Association. The Aichi Medical Association is a subdivision of the Japan Medical Association, most of whose members are primary care physicians (PCPs) and represent about 60% of all physicians licensed in Japan. We chose all the physicians registered as internists because they were considered to be the group most engaged in periodic health examinations.

The questionnaire in our study was developed after we reviewed similar published questionnaires (Oboler et al, 2002). It was reviewed by several physicians knowledgeable in general internal medicine and preventive health care, and by an expert with substantial training and experience in survey design and administration. A pilot test of this survey was performed on 57 physicians, and the questionnaire was slightly modified according to the results (Miyazaki et al, 2005). The questionnaire first asked the participants to answer 'Yes' or 'No' to the following question: 'Do you think a periodic health examination is effective for early detection and treatment of a disease in general?' Then it asked the participants to answer 'Yes', 'No' or 'Yes, for certain age groups' to the following question: 'Do you think each of the following items in the periodic health examination is effective for early detection and treatment of the disease?' Twenty-two items including components of the physical examination, blood tests, and urinalysis were selected among the components of preventive health services endorsed by public health authorities. It also asked the participants to answer 'Yes' or 'No' to the following question: 'Do you think a periodic health examination is effective for your own health?' In addition, the questionnaire assessed participants' background information, such as age, gender, specialty, practice setting and proportion of periodic health examination in total working hours as well as the presence of any of five chronic medical conditions (obesity, hypertension, hyperlipidemia, diabetes mellitus or cancer), and smoking status. These factors were selected to determine whether they would affect the respondents' attitudes about the effectiveness of an annual physical examination.

All analyses were performed using Stat View software, version5.0 (SAS Institute, INC., Cary, North Carolina). We used multivariate stepwise regression method to examine PCP characteristics associated with the belief that an annual physical examination was effective.

Results

The response rate was 37% (N=722/1971). The demographic characteristics of the respondents are shown in Table 1. The physicians' average age was 57, with a range from 29 to 88 years and 91.7% were men. The majority (93%) worked in private offices. Of the specialties, 37% were generalists for adults (general practitioners or general internists), 38% were subspecialists in internal medicine, 5% were pediatricians. Almost half (46%) spent 10% or more of their working time in providing periodic health examination. By self-report, 22% were smokers and 29% were obese. Twenty-

Table 2. Attitudes of Primary Care Physicians toward the Effectiveness of PHE in General and for Their Own Health

	Yes	No	Missing data
Is PHE effective in general?	N=615 (85.2%)	N=18 (2.5%)	N=89(12.3%)
Is PHE effective for your own health?	N=637 (88.2%)	N=65(9.0%)	N=20(2.8%)

PHE: Periodic Health Examination

eight percent had hypertension, 32% had hyperlipidemia and 12% had diabetes mellitus. Five percent reported they had a history of cancer.

The majority of our respondents believed the effectiveness of the currently endorsed periodic health examination in Japan (Table 2). Eighty-five percent believe that the periodic health examination was effective for early detection and treatment of diseases in general, and 88% believe that the periodic health examination was effective for their own health.

The attitude of physicians toward each component of the periodic health examination is shown in Table 3. Nearly 80% believed that height and weight should be measured, and more than 90% supported blood pressure measurements. Nearly 70% considered it worthwhile to carry out a physical examination of chest and abdomen. Only about half of the respondents believed that vision and hearing tests should be examined for all age groups, while 30% of respondents thought that these tests were valuable for certain age groups. Ninety percent or more physicians considered that performing a variety of laboratory tests was valuable, including urinalysis and blood tests, such as complete blood count, glucose and lipid levels, liver enzymes and renal function. Three quarters of the respondents considered it worthwhile to carry out hepatitis B surface antigen and hepatitis C antibody. The majority (70-80%) valued the role of cancer screening tests such as chest x-ray for lung cancer, an upper gastrointestinal series for gastric cancer, the fecal occult blood test for colorectal cancer, the clinical breast examination for breast cancer and the pap smears for cervical cancer.

By using multivariate stepwise regression method, we attempted to examine whether certain PCP characteristics were associated with their belief that the annual physical examination was effective in general and for their own health, but did not find any association.

Discussion

The results of this study showed that the vast majority (85% or more) of Japanese PCPs believed periodic health examinations are generally effective for the public and for their own health. This percentage was considerably higher than the one found in a similar survey in the United States, which demonstrated that 65% of U.S. PCPs believed that annual physical examination was necessary (Oboler et al., 2002). Japanese physicians also believed

Table 3. Attitudes of Primary Care Physicians about the Effectiveness of Each Component in PHE

	Effective		Effective for certain age group		Not effective		Missing data	
	No.	%	No.	%	No.	%	No.	%
Physical examination								
Height/weight	570	78.9	92	7.3	53	12.7	7	1.0
BP	672	93.1	30	2.2	16	4.2	4	0.6
Chest exam	500	69.3	70	20.4	147	9.7	5	0.7
Abdominal exam	482	66.8	66	22.9	165	9.1	9	1.2
Visual acuity	382	52.9	121	28.0	202	16.8	17	2.4
Optic fundus	473	65.5	152	11.5	83	21.1	14	1.9
Hearing	326	45.2	150	31.3	226	20.8	20	2.8
Laboratory tests								
CBC	687	95.2	16	2.1	15	2.2	4	0.6
glucose	656	90.9	34	4.3	31	4.7	1	0.1
lipid	678	93.9	32	1.5	11	4.4	1	0.1
liver enzymes	686	95.0	22	1.4	10	3.0	4	0.6
renal function	643	89.1	37	5.3	38	5.1	4	0.6
urinalysis	683	94.6	16	2.6	19	2.2	4	0.6
ECG	596	82.5	67	6.8	49	9.3	10	1.4
HBV testing	542	75.1	76	12.2	88	10.5	16	2.2
HCV testing	552	76.5	76	10.9	79	10.5	15	2.1
Chest x-ray for TB	541	74.9	71	12.7	92	9.8	18	2.5
Cancer screening tests								
Chest X-ray	501	69.4	85	17.3	125	11.8	11	1.5
Upper GI series	509	70.5	116	12.5	90	16.1	7	1.0
Fecal occult blood	574	79.5	90	6.6	48	12.5	10	1.4
Breast exam	534	74.0	124	3.9	28	17.2	36	5.0
Pap smear	515	71.3	136	3.3	24	18.8	47	6.5

PHE: Periodic Health Examination, BP: blood pressure, CBC: complete blood count, HBV: hepatitis B virus, HCV: hepatitis C virus, TB: tuberculosis, ECG: electrocardiography

that most of its components should be performed. We did not find any significant associations between the PCP characteristics and their belief that the annual physical examination was effective. Our study is a first attempt to determine the views of Japanese physicians regarding the effectiveness of periodic health examinations and its component tests.

There are several possible reasons why the majority of Japanese PCPs believe the effectiveness of the annual physical examination. First and foremost, the annual health examinations in Japan are publicly endorsed and mandated by the law, which we can naturally assume, has a great effect on the attitudes of physicians and the public. In addition, there have been few educational efforts in undergraduate, postgraduate, and continuing medical education on evidence-based preventive medicine in Japan. According to the study of Prochaska et al 2005, despite well-established evidence based guidelines, which do not recommend routine, annual health examinations, 65% of PCPs in the United States believe in the effectiveness of periodic health examinations and 88% actually perform such examinations. Thus, it is important to not only develop guidelines but also to educate physicians more effectively about the importance of evidence-based preventive services.

It is noteworthy that physicians may provide unproven preventive services because of high expectation by the patients. Seventsy-eight percent of PCPs in United States believed that most patients believe that periodic health examinations are necessary. Another survey showed that 66% of citizens in United States believe that an annual physical examination is necessary (Prochazka et al, 2005). In Japan, 80% of citizens believe in the necessity of an annual comprehensive health examinations (Adult Insurance Section, Health Promotion Division, Insurance Policy Department, Welfare Health Insurance Bureau, Tokyo, 1998). These findings suggest that not only the PCPs but also public needs better education regarding examinations and tests of proven and unproven value. The effectiveness of clinical practice guidelines is limited when the guidelines are controversial and incompatible with existing values of its users (Grol et al, 1998).

There are some limitations to our study. Our data were obtained from physicians of one specific region (Aichi Prefecture). They may not be representative of all Japanese primary care physicians.

Our response rate of 37% may be relatively low. We did not send reminders, because several earlier surveys targeted at Aichi Medical Association members had response rates similar to ours, regardless of the use of reminders. We could not assess whether the views of the responders are similar to those who did not respond.

In conclusion, despite the lack of the evidence, most Japanese PCPs believe that an annual health examination including the component tests currently endorsed by public health authorities is effective. These findings indicate that it is necessary not only to establish evidence-based guidelines specific to the Japanese population, but also to educate Japanese physicians and the public about evidence-based approaches to clinical preventive services, and eventually to change the current public health law.

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