

Current Systems of National and Regional Nutrition Surveys and Future Direction

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ABSTRACT

The National Nutrition Survey in Japan (NNS-J) started in 1945 and has provided information on dietary intake and health status of Japanese citizens to the public and policymakers for more than half a century. We summarized several relevant issues on the survey in this report ; the current framework of the NNS-J in accordance with the Nutrition Improvement Law, utilization of the survey for nutrition and health policy in Japan, the Health Promotion Law recently enacted in 2003, the national plan for health promotion and disease prevention (Health Japan 21), and possible measures to improve the survey systems under the new law. We also mentioned implementation structures of regional health and nutrition surveys, because the Health Promotion Law designates an active role of local governments on promoting health for their citizens, which will enhance the needs for appropriate assessment of health and nutrition conditions in each community as well as the monitoring at the national level. (*J Community Nutrition* 5(2) : 59~64, 2003)

KEY WORDS : nutrition assessment · dietary survey · health policy · nutrition policy · japan.

Introduction

The National Nutrition Survey in Japan (NNS-J) has provided information on dietary intake and health status of Japanese people to the public and policymakers for more than half a century. It has been conducted since 1945 and in accordance with the Nutrition Improvement Law since 1952. In 2003, the Health Promotion Law was enforced to support comprehensive promotion of health for Japanese citizens : accordingly, the NNS-J will change its role as the National Health and Nutrition Survey to monitor the situations of health and lifestyles as well as dietary intake and nutritional indicators. Furthermore, Ministry of Health, Labour and Welfare (MHLW) put forward a new national health promotion strategy named 'Health Japan 21' in advance of the Health Promotion Law. The Health Promotion Law and

'Health Japan 21' designate an active role of local governments on promoting health for their citizens. With this trend, the needs for more comprehensive health surveys at the national and local levels will be increased in Japan.

1. 'Health Japan 21'

In 2000, a 10-year national plan for health promotion and disease prevention named 'Health Japan 21' was established and given notice to local governments by the MHLW. This plan came to have a legal basis on the Health Promotion Law after its enforcement. The aim of the 'Health Japan 21' is to lower the mortality in the middle-aged, to prolong a healthy life expectancy, and to improve quality of life for all people mainly through appropriate measures of primary prevention. Achievement goals in 2010 were illustrated for nine focus areas : nutrition and dietary habit, physical activity and exercise, rest and mental health, tobacco, alcohol drinking, dental health, diabetes mellitus, cardiovascular disease and cancer. Measures for the area of nutrition and dietary habit in 'Health Japan 21' are shown in Table 1. Most of the baseline data and achievement goals in adequate nutrient and food consumption (Table 1A) and behavior modification for adequate nutrient and food consumption (Table 1B) were

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Table 1. Target and baseline : area of nutrition and dietary behavior in 'Health Japan 21'(2000)

A) Adequate nutrient (food) consumption		
1.1 Increase the proportion of people who maintain healthy weight**		
Target population	Baseline	2010
1.1a Childhood obesity	10.7%	≤ 7%
1.1b Underweight of 20-29 year old females		
	23.3%	≤ 15%
1.1c Obesity of 20-60 year old males	24.3%	≤ 15%
1.1d Obesity of 40-60 year old females	25.2%	≤ 20%
1.2 Lower the energy intake from fat**		
1.2a 20-49 years old	27.1%	≤ 25%
1.3 Lower the salt intake**		
1.3a Adults	13.5g	<10g
1.4 Increase consumption of vegetables**		
1.4a Adults	292g	350g +
1.5 Increase consumption of calcium-rich food items**		
1.5a Milk and dairy products	107g	130g +
1.5b Legumes	76g	100g +
1.5c Green and yellow vegetables	98g	120g +
B) Behavior modification for adequate nutrient (food) consumption		
1.6 Increase the proportion of people who recognize and attempt to maintain a healthy weight***		
Target population	Baseline	2010
1.6a Males (15+)	62.6%	90% +
1.6b Females (15+)	80.1%	90% +
1.7 Lower the proportion of people who skip breakfast**		
1.7a Students in middle and high schools	6.0%	0%
1.7b Male (20s)	32.9%	≤ 15%
1.7c Male (30s)	20.5%	≤ 15%
1.8 Increase the proportion of people who eat well-balanced meals*		
1.8a Adults	(56.3%)	70% +
1.9 Increase the proportion of people who read nutrition labels****		
1.9a Adults	–	–
1.10 Increase the proportion of people who correctly understand the amount of foods to be eaten to maintain a healthy weight*		
1.10a Adult males	65.6%	80% +
1.10b Adult females	73.0%	80% +
1.11 Increase the proportion of people who have incentive for improving a diet in those who are somewhat at risk*		
Target population	Baseline	2010
1.11a Adult males	55.6%	80% +
1.11b Adult females	67.7%	80% +

determined on a basis of the evidence from the NNS-J.

2. The national nutrition survey (NNS-J)

Historical background, methodological changes and administrative framework of the NNS-J were described in detail

Table 1. Continued

C) Establishment of an environment for behavior modification of individuals to consume adequate nutrients (foods)		
1.12 Increase the number of restaurants which provides a healthy menu, and increase the number of people who actually appreciate the service \$		
1.12a Number of restaurants	–	–
1.12b Number of individuals who use the service	–	–
1.13 Increase the number of opportunities to learn about health and nutrition, and increase the number of people who participate in the program \$		
1.13a Number of opportunities	–	–
1.13b Number of individuals who participate	–	–
1.14 Increase the number of voluntary groups, which learn about and work around health and nutrition \$		
1.14a Number of groups	–	–

Data Source :

*: 1996 National nutrition survey data

** : 1997 National nutrition survey data

***: 1998 National nutrition survey data

****: Will be set based on the data from 1999 National nutrition survey data

\$: Will be investigated

by Yoshiike et al. (1996) and Katanoda et al. (2002). Briefly, the survey was started in 1945 at a time when people faced a serious food shortage just after World War II to obtain urgent food supplies from other countries. After that, the survey has been conducted annually, while shifting attention from food supply to health promotion. The office for Lifestyle-related Disease Control in the MHLW handles budgeting, planning and supervising of the survey, local governments of 47 prefectures, 51 large municipalities and 23 wards in the Tokyo metropolitan areas directly operate local public centers which carry out the survey itself. The recent government system of Japan relevant to the survey are shown in Fig. 1.

Fig. 2 shows the framework of the NNS-J. The survey consists of three major components : dietary assessment, questionnaire and physical examination. As for dietary assessment method, one-day diet record is adopted to estimate nutrient and food intake of the people aged 1-year and older. Until 1994, diet record had been performed only on a household basis, so that nutrient and food intake per capita per day could be obtained. Some methodological changes including the information on how food and/or dish were shared by each household member (Iwaoka et al. 2001) was introduced in 1995, making it possible to estimate nutrient and food intake per day in age and sex subgroups. This change has brought great benefits in nutrition policy,

because target population for disease-preventing and health-promoting measures in diet can be specified. For example in 'Health Japan 21', target population for lowering energy intake from fat is the people between twenties and forties based on the results of the NNS-J 1997, which revealed the percentage of energy intake from fat in these subpopulations

was higher (27.1%) than those in elderly groups. Recent results on the nutrient intake of Japanese people by age and sex can be referred from previous literature (Nakamura et al. 2002).

In fact, the NNS-J has played an important role in nutrition and health policy in Japan. Furthermore, some relevant

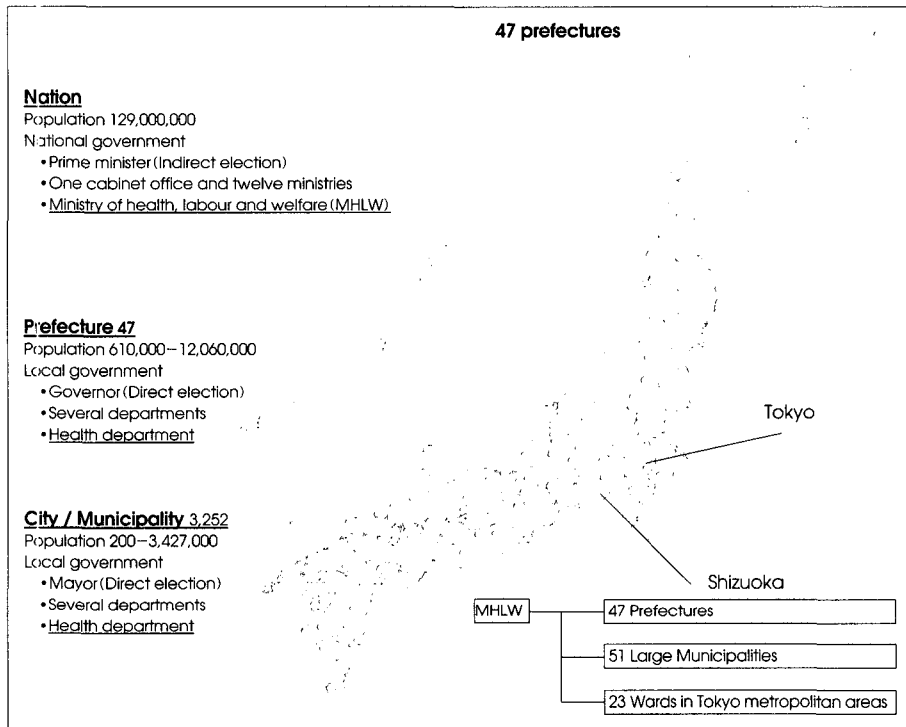


Fig. 1. The government system of Japan in relation to the National Nutrition Survey.

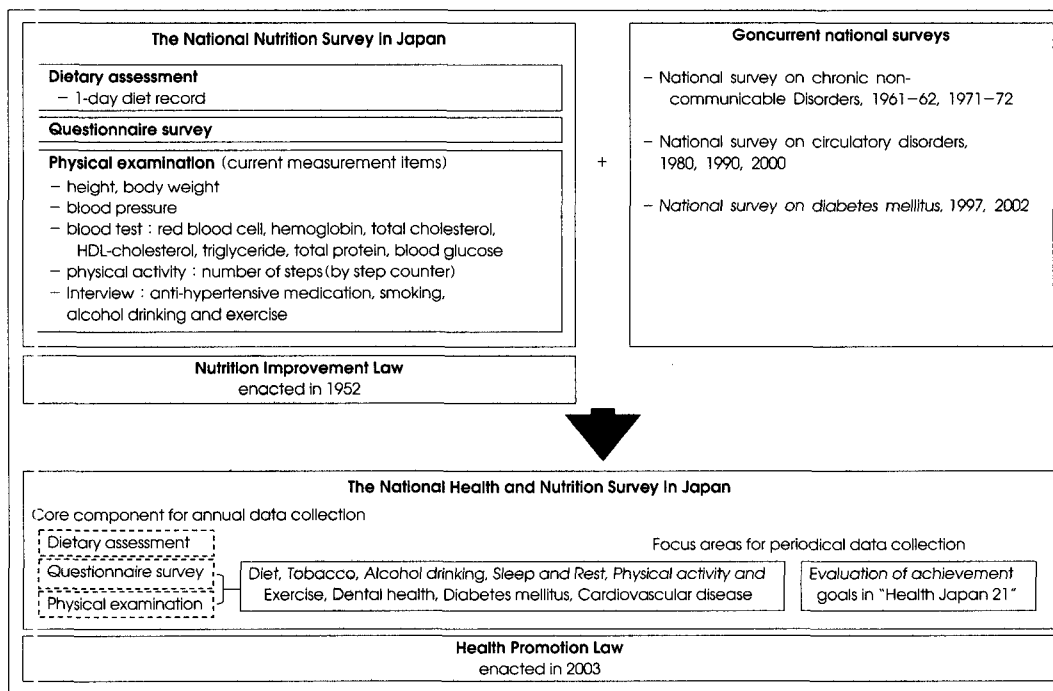


Fig. 2. Changes in the frameworks for the National (Health and) Nutrition Survey in Japan.

national surveys have been concurrently carried out with the NNS-J using a subsample and the data collection system of the NNS-J. The National Surveys on Circulatory Disease, which aimed to monitor cardiovascular disease and collect information for prevention, were conducted in 1980, 1990 and 2000. The surveys included resting electrocardiogram, urine and blood test for cardiovascular risk factors and a questionnaire on medical histories and subjective symptoms related to the cardiovascular diseases. Multiple cross-sectional data showed the trend of cardiovascular risk factors in Japan (Sakata et al. 1996). The National Surveys on Diabetes Mellitus were conducted in 1997 and 2002 with the aim of monitoring diabetes mellitus and obtaining information on its effective control. They found out that the number of people whose hemoglobin A1c surpassed 6.1 % and/or who were under medical treatment were an estimated 6.9 million in 1997.

With transition into active health promotion on the legal basis of the Health Promotion Law, the new National Health and Nutrition Survey will start in November 2003. The survey will cover broader areas of lifestyle and lifestyle-related diseases in addition to the conventional component

of the NNS-J (Fig. 2). The survey will contain core components for annual data collection and some focus areas for periodical data collection, which will play an important role to evaluate achievement of the goals in 'Health Japan 21'.

3. Regional nutrition surveys

Recently, we performed a questionnaire survey to clarify the current situations of community-based nutrition survey systems operated by prefecture and municipal governments. Questionnaire sheets were mailed to dietitians in the nutrition units of local governments. Target bodies were nutrition units, which belong to 'Health Promotion Division' or 'Disease Prevention Division' in most cases, of all prefectures (47), 51 large municipal governments and 23 wards in the Tokyo Metropolitan area in February 2002. Between 1997 and 2001, 89% of prefectures and 31% of municipal governments have conducted regional nutrition surveys (Fig. 3). The surveys were conducted in relation to the NNS-J in 79% of the prefectures and 43% of the municipal governments, though the central government has shown no recommendation for the survey implementation and specified methods. Dietary assessment methods used for the regional nutrition surveys are shown in Fig. 4. More than eighty percent of

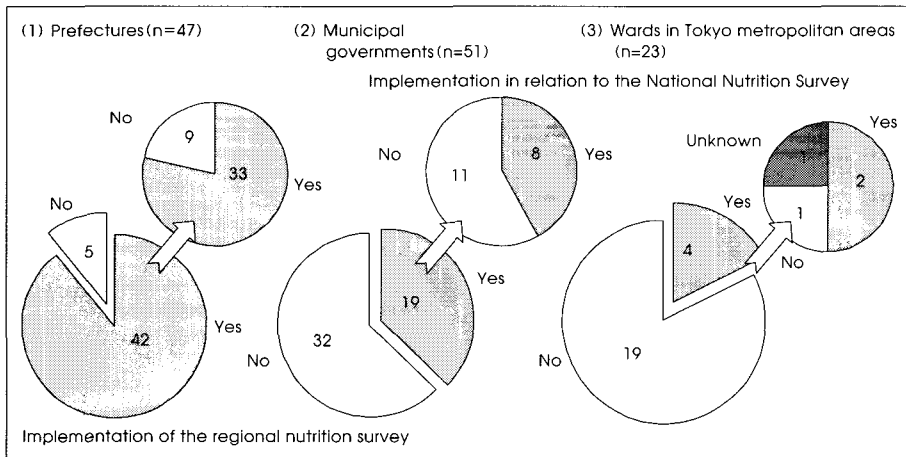


Fig. 3. Implementation of regional nutrition surveys in 1997-2001.

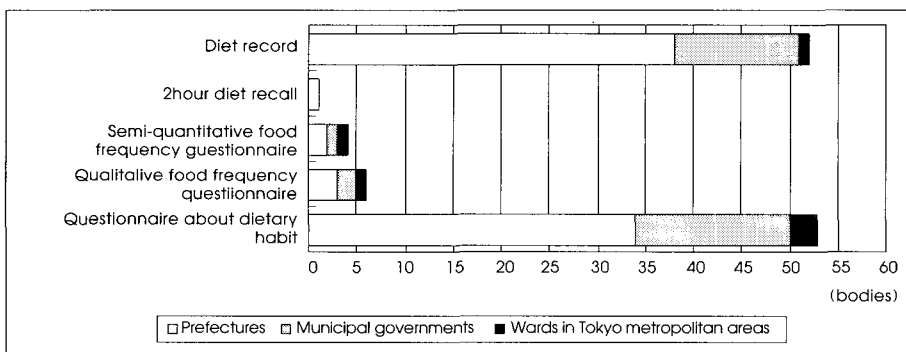


Fig. 4. Dietary assessment methods used in the regional nutrition survey.

the prefectures chose a diet record and a questionnaire on dietary habit as with the National Nutrition Survey, and a few prefectures adopted a diet recall and a food-intake frequency questionnaire. Anthropometric measurements (height and body weight) were also adopted in about ninety percent of prefectures and number of steps measurement by step counter, blood pressure measurement, and blood test were conducted in fifty to seventy percent of prefectures and municipal governments as nutritional indicators (Fig. 5). A typical implementation structure of the regional nutrition surveys at prefecture levels is shown in Fig. 6. Planning and budgeting were mainly done by local government of prefectures, local public centers played a central role in data collection and reviewing, and research organizations (universities and research institutes, and so on) in the regions supported the local government in data management, analyses and reporting.

Fig. 7 shows an example of the regional nutrition surveys at a prefecture level. In Shizuoka prefecture (see Fig. 1), regional health and nutrition surveys had been conducted for

four times; in 1989, 1992, 1995 and 1998 in relation to the NNS-J. Previously, diet record and questionnaire on dietary habit were used for dietary assessment. In the next survey being planned in 2003, the diet record will be carried out to only to the subsample and a 'semi-quantitative' food-intake frequency questionnaire (Wakai et al. 1999) will be introduced to the entire sample. This will contribute to improve the response rate of the survey, because difficulty in answering to the diet record is likely to lower the rate of participation in the survey. The results will be utilized for the local plans for 'Health Japan 21'.

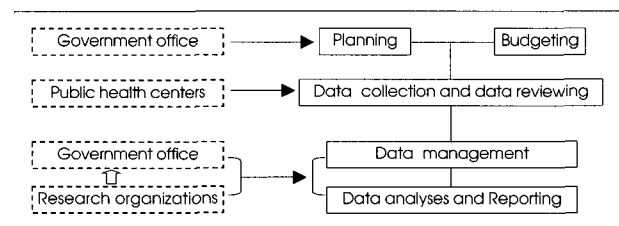


Fig. 6. A typical implementation structure of the regional nutrition surveys at prefecture levels.

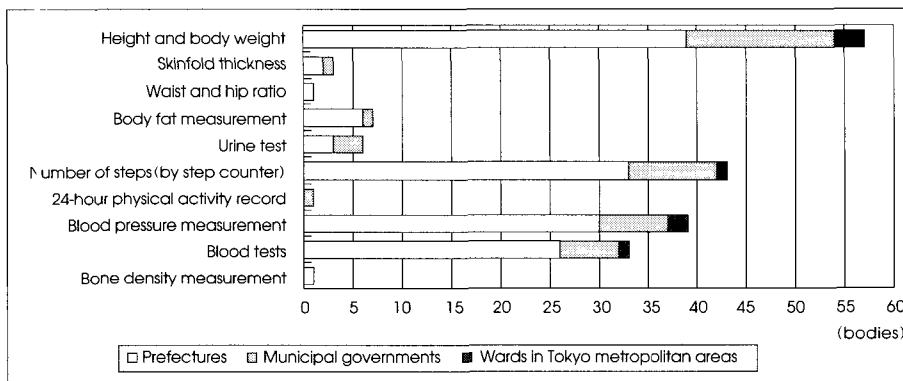


Fig. 5. Nutritional indicators used in the regional nutrition surveys.

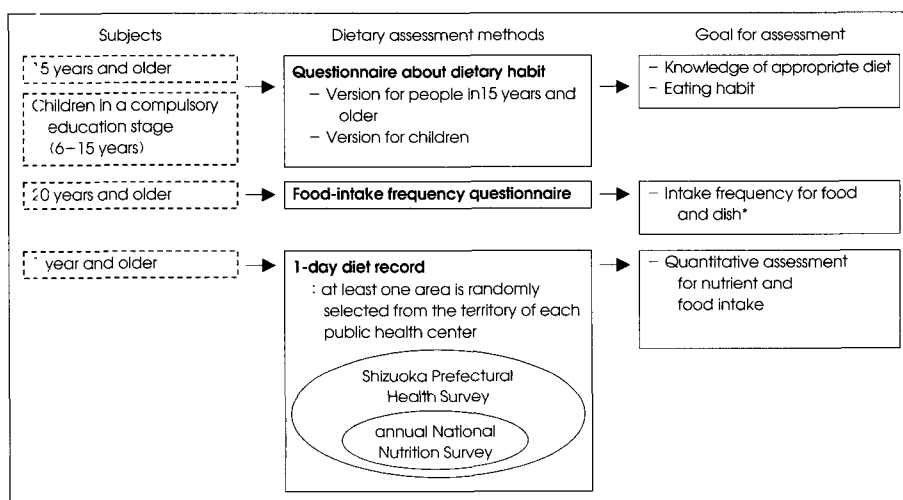


Fig. 7. An example of the regional nutrition surveys at prefecture levels.
 - Framework for dietary assessment in Health Survey of Shizuoka Prefecture in 2003
 *: Semi-quantitative estimation of nutrient and food intake will be used after a validation study

4. Future direction of national nutrition surveys

As mentioned above in the regional nutrition surveys, a decreasing trend of the survey participation may also be troublesome for the NNS-J. The number of participants declined from around 28 thousand in 1975, 20 thousand in 1985 to 12 thousand in 2000 (Katadona et al. 2002). Selection bias would be one of the major concerns, though a change of actual response rates was not published. Also, minimizing measurement errors would be another major concern for nutrition surveys at any level. Quality control on measurement method for blood chemical analysis, blood pressure, and so on, would still be improved. Specialized training for examiners would be particularly important to keep better quality of the data in dietary assessment. Scientific research on the methodologies will be encouraged in the future, because there have been only a few research on methodological issues in the NNS-J until now. Accumulating scientific researches on methodologies and data uses will enhance validity and utility of the new National Health and Nutrition Survey.

Conclusion

National and regional nutrition surveys in Japan are now coming to a turning point with establishment of the new law and the national plan for health promotion and disease prevention, being more and more expected to respond to the

diversified needs for public health implementations and scientific researches toward better health for the people.

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