

## Review Article

# The issues in assessment and evaluation of diet in Asia

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Dietary assessment provides information on what people eat and how well they eat. Recent trends in changes of health problems related to diet require more accurate evaluation of diet since now we know that both under- and over-consumption of nutrients can bring health risks. Non-traditional new components have been identified to be related to health. Also new evaluation tools, such as Dietary Reference Intakes or Food Guides are developed and used for dietary assessment. Dietary assessment in Asian region poses several challenges because of characteristics in diet, eating behaviours, and tools used in the process. Since many of these characteristics of Asian diet are considered to be related to health, either beneficial or detrimental, efforts are needed to develop methods and tools suitable to be used for Asian diet.

**Key Words:** diet assessment, diet evaluation, Asian diet, dietary standards, international cooperation

## INTRODUCTION

Dietary assessment is becoming increasingly important in the research and practice of nutrition in various areas. The researchers want to have accurate assessment of usual dietary intake of individuals and population in order to understand the dietary factors, which are related to disease. The practitioners and policymakers also need accurate information about diet of their target population, so that they can give advices or take actions to bring changes in order to ensure good health. Asian countries are going through rapid changes with regard to diet and health problems.<sup>1</sup> It is urgent to obtain reliable data about diet and health in the Asian countries.

## PROCESS OF DIETARY ASSESSMENT

Dietary assessment is achieved through several steps. The first step is to obtain information about what a person has consumed. The next step is to calculate the intake of nutrients and/or other components of interests using food composition DBs. The final step is to evaluate the intake levels using appropriate standards. (See Figure 1) Although the basic process should be equal regardless of the regions, the characteristics of diet in different populations require careful considerations in data collection and adequate tools to calculate and evaluate intake levels.

### *Methods to Obtain Intakes*

Several dietary assessment methods are available and each method has strengths and weaknesses.<sup>2</sup> In all the methods, it is desirable to obtain accurate and comprehensive information about all the foods, drinks, and supplements the subject(s) consumed during the period of interest. Each country in Asia has its own dietary patterns and characteristics. Mixed dishes are common and people tend to share food from the same bowl. Condiments and spices are common. Most of the researches on dietary intake methodologies were undertaken with western diets. Many

Asians eat mixed dishes with many ingredients mixed together and share foods in a single bowl. It can be very difficult for a subject to remember the amount of food and ingredients they ate for 24 recall method. It will be also difficult to estimate their usual intake frequencies for food frequency method.

### *DBs for Nutrient intakes*

In order to calculate the intake levels, comprehensive DBs with accurate content of the nutrients and other components in all food items consumed by the population are required.<sup>3</sup> However many countries do not have good DBs. Traditional food composition tables and nutrients DBs are useful but recent interests in diet go beyond traditional components and nutrients. Many food composition tables do not include different fatty acids, trace minerals, different carotenoids, phytochemicals, and other bioactive components. Cooking methods also affect the level people actually consume and bioavailability of many components but very little information is available to calculate any of these components.

### *Standards of Evaluation*

For evaluation of the intake levels, good dietary standards are needed. Many countries in Asia have nutrient standards as Recommended Dietary Allowances (RDA) and some countries recently developed Dietary Reference Intakes (DRIs).<sup>4,5</sup> Using different standards obviously produce different results on the evaluation of diet. DRIs contain standards that are not included in previous RDA.

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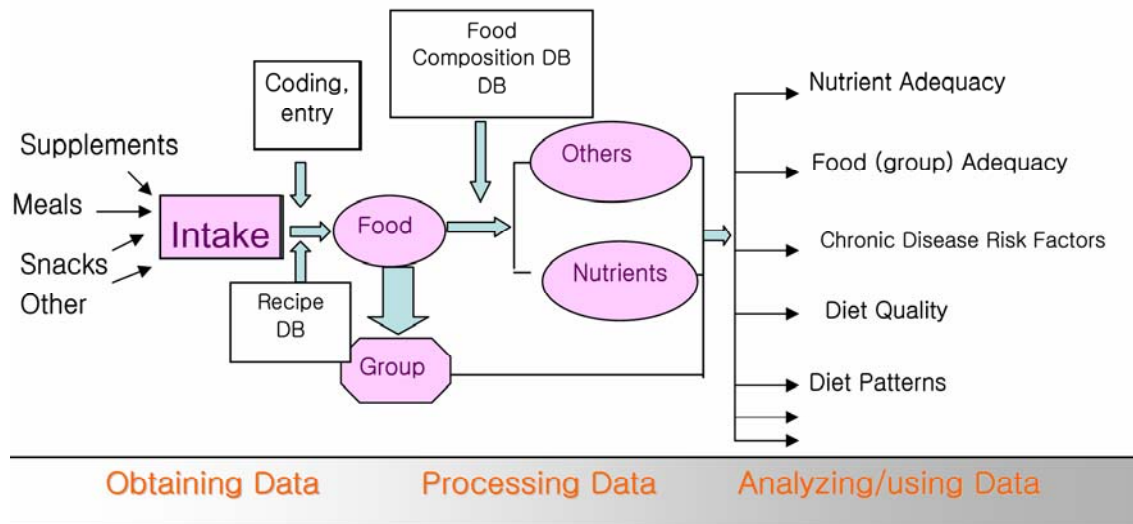


Figure 1. Steps and components of assessment and evaluation of diet

Different concepts and applications of standards in the same regions would make it more difficult to study diet and health problems among the countries even in the same region.

#### NEED FOR REGIONAL AND INTERNATIONAL COOPERATION

Developing suitable tools such as nutrient DBs and DRIs require enormous investment of human and economic resources. The collaborations among the countries in the region may facilitate the development of these tools and dietary assessment in Asia to be more feasible and reliable. Discussions at meetings such as the Asian Congress of Nutrition where researchers working on similar issues can share their data and experiences are useful in finding ways to solve their problems. Human and monetary resources are limited for basic works such as developing DBs and tools. But working together will save time, efforts and expenses, and make it feasible to get accurate assessment and evaluation of dietary intake in Asia. Asian diets are diverse in ingredients, cooking methods, and eating behaviours. They are generally rich in phytochemicals and quite different not only from the Western diet but among themselves. Accurate assessment of Asian diet would contribute greatly to understanding of diet and health problems, resulting from both under- and over-consumption of various foods and food components. Considering the increasing double burden of malnutrition spreading throughout the world, contribution of such efforts to the health and welfare of world population will be enormous.

#### AUTHOR DISCLOSURES

Hee Young Paik, no conflicts of interest.

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