

PROCEEDINGS OF TWO MINISYMPOSIA

Trends in the Work of Dietitians Around the World and Trends in the Education and Training of Dietitians Around the World



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Education and Training of Dietitians in Some Countries in Asia and the Pacific

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Introduction

This paper is divided into two parts. The first part presents data and information on educational programs for dietitians in selected countries in Asia and the Pacific. The second part is concerned with some conceptual considerations related to dietetic education.

Educational Programs for Dietitians in Asia and the Pacific

An inventory of educational programs for dietitians was conducted using a questionnaire developed by the Swedish Association of Dietitians (SDA) and the Danish Dietetic Association (DDA). The questionnaire was sent to twelve countries in Asia and the Pacific that belong to the International Committee of Dietetic Associations and/or the Asian Forum of Dietetic Professionals based on a list provided by the Nutritionist-Dietitians' Association of the Philippines.

Ten countries returned the survey: Australia, Hong Kong, Indonesia, Japan, Malaysia, New Zealand, the Philippines, Singapore, Taiwan, and Thailand. Two of these countries do not have educational programs for dietitians. Due to the relatively small numbers required, there are no

plans to start a dietetics course in Singapore in the foreseeable future and dietetics professionals will continue to make use of foreign institutions of higher learning. In Hong Kong, there are preliminary plans to start a 2-year diploma program for students who have their first degree in nutrition or a related field.

The remaining eight countries have a variety of institutions that provide basic training programs for dietitians (Table 1). University programs are usually of 4-year duration and lead to a bachelor's degree, although some universities also offer a postgraduate diploma of 1- to 2-years duration. In Japan, the 275 schools for training dietitians are categorized into three types: universities, colleges, and training schools. The universities offer only 4-year programs while almost all of the colleges and training schools offer 2-year programs. In Indonesia, an Academy of Nutrition provides basic training for dietitians, with 23 such academies located in various parts of the country. In Australia, one university has provisional accreditation for a 4-year undergraduate program.

Basic Training Programs

Graduate Diplomas

Both Australia and New Zealand offer postgraduate diploma programs in dietetics and require a bachelor of science degree for admission to the program.

Table 2 shows some features of these programs. The diploma program in Australia runs for 12 to 18 months. It includes a theoretical component and a minimum of 20 weeks of practice in management of clinical cases, community programs, and foodservice operations.

Table 1. Types of Institutions That Provide Basic Training for Dietitians

Country	University	College	Academy	Junior College	Training School
Australia	✓				
Indonesia			✓		
Japan	✓	✓			✓
Malaysia	✓				
New Zealand	✓				
The Philippines	✓	✓			
Taiwan	✓	✓		✓	
Thailand	✓				

	Australia	New Zealand
Requirements for admission	BSc degree with units in biochemistry and human physiology	BSc degree in Human Nutrition
Type and number of institutions or universities	2	1
Total length of training (months)	12 to 18	15
Number of graduates (approximate number per year)	110	22
Title after basic education	Graduate Diploma of Nutrition and Dietetics; Graduate	Postgraduate Diploma in Dietetics
	Usually covered in undergraduate degree. Time allocated varies between universities. Entry-level dietitians are expected to meet competency standards developed by the Dietitians Association of Australia.	Usually covered in undergraduate degree. Theory – Laboratory and Practice hours: Clinical nutrition – 90 to 360 Foodservice management – 75 to 120 Applied and community dietetics – 120 to 150 Business management – 60 to 100
Practical Program (minimum number of weeks)	20	12
Management of clinical cases	10	On-the-job practice in an approved area (eg, service management and/or applied nutrition in the community, industry, industry, or institution).
Management of community programs	4	Submitted as a research paper.
Management of foodservice	4	
Additional (in any of the above)	2	

The time allocated to specific courses varies between universities.

The diploma program in New Zealand runs for 15 months. Its theoretical component lasts 45 weeks and includes both theory and practice in food and nutrition science, foodservice administration, nutrition education and community nutrition, and business management. In addition, 12 weeks are allotted for a dietetic practicum to integrate theory with "on-the-job" practice in an approved area. A research paper is submitted upon completion of the practicum.

Undergraduate Programs

Table 3 shows dietetic programs leading to a bachelor's degree or a diploma in 6 Asian countries. Most of the programs are 4-year courses. All coun-

tries require completion of primary and secondary education which usually runs for 12 years. Prospective students are required to pass a university entrance examination to gain admission to the dietetic program in all countries except one.

The SDA/DDA questionnaire categorized different subjects in the dietetics program into 5 major headings. These are basic science, food and nutrition sciences, foodservice administration, nutrition education and community nutrition, and miscellaneous. The last heading includes research, foreign languages, and other studies.

Table 4 indicates the specific subjects and categories of subjects offered in the dietetics programs of Indonesia, Japan, Malaysia, the Philippines, and Thailand. On the whole, the programs do not differ very much in terms of the curricular offerings. For example, under

Table 3. Undergraduate Programs for Dietitians

Country	Institution Type	Number	Training Length (years)	Graduates (approximate number per year)	Title
Indonesia	Academy	23	3	400	Diploma III (equivalent to a bachelor's Degree)
Japan	University	66	4	15,000	Bachelor's Degree in Home Economics or Nutrition
	College	208	2 to 3		Associate Degree
Malaysia	University	No response	4	7 to 10	BSc (Dietetics)
The Philippines	College/ University	50	4	250 to 300	Bachelor of Science in Nutrition/ Dietetics or Community Nutrition
Taiwan	College/ University	7	4	200 to 300	Bachelor of Food and Nutrition
Thailand	University	7	4	15 to 20	Bachelor of Science in Nutrition and Dietetics or Public Health Nutrition and Dietetics

the category of Basic Sciences, all of the programs offer physics, chemistry, biochemistry, physiology, mathematics, and statistics. Japan also includes pathology and exercise physiology, and Malaysia also includes histology.

Five of the 6 subjects included in the SDA/DDA questionnaire under Food and Nutrition Sciences are common to the countries. These are nutrition, diet therapy, food science and technology, microbiology, and techniques of food preparation.

Although the questionnaire listed very specific subjects under the category of Foodservice Administration (management, equipment, purchasing, legislation, and economics), it appears that these subjects are not taught separately but are included in one or more general subjects called foodservice management or foodservice systems. Japan offers a course on food economics and another on food hygiene. The program in the Philippines includes a course on accounting and another one on personnel management.

The common subjects included in Nutrition Education and Community Nutrition are sociology, physiology, teaching methods/nutrition education, and community/public health nutrition. Additional subjects included are counseling, health anthropology, and epidemiology in Malaysia and health

management and public health science in Japan.

All programs require a foreign language. A course on research is required in four countries.

All curricular programs include theoretical and practical components. Like the subjects offerings, the practicum components of dietetics programs differ in both coverage and credit allocation. In Indonesia, the 660 hours of practical studies is divided into three parts: hospital dietetics (38% of total time), municipal health office work (35%), and community work (27%). In the Philippines, the 576 hours of supervised field experience is composed of public health nutrition (42%), hospital dietetics (33% of total time), and foodservice (25%). The practicum counts as 12 credits, about 8% of the total number of credits required in the 4-year curriculum. In Malaysia, the practical experience (called posting) accounts for 18% of total credits in the curriculum. Malaysian students spend a total of 46 weeks in practical training: 8 weeks in foodservice posting, 8 weeks in community posting, and 30 weeks in 3 kinds of clinical postings (12 weeks in a university hospital, 10 weeks in a major hospital, and 8 in a hospital chosen by the student).

None of the six countries with dietetic programs has an obligatory internship after graduation.

Two countries have set provisions for authorization and registration. To be able to practice, a dietetic

Table 4. Subjects in Undergraduate Dietetics Programs

	Indonesia	Japan	Malaysia	The Philippines	Thailand
Basic Sciences					
Physics	✓	✓	✓	✓	✓
Chemistry	✓	✓	✓	✓	✓
Biochemistry	✓	✓	✓	✓	✓
Biology	✓	✓	✓	✓	✓
Physiology	✓	✓	✓	✓	✓
Anatomy	✓	✓	✓	✓	✓
Mathematics	✓	✓	✓	✓	✓
Statistics	✓	✓	✓	✓	✓
Others:					
Pathology		✓			
Exercise physiology		✓			
Histology and embryology			✓		
Nutrition Education and Community Nutrition					
Sociology	✓	✓		✓	✓
Psychology	✓	✓	✓	✓	✓
Teaching Methods/					
Nutrition Education	✓	✓	✓	✓	✓
Communication	✓	✓	✓	✓	✓
Community/Public					
Health Nutrition	✓	✓	✓	✓	✓
Others:					
Counseling			✓		
Epidemiology	✓		✓		
Health anthropology			✓		
Health administration/					
demography	✓				
Health management		✓			
Public health science		✓			
Miscellaneous					
Research	✓	✓	✓	✓	✓
Foreign Language	✓	✓	✓	✓	✓
Food and Nutrition Science					
Nutrition	✓	✓	✓	✓	✓
Diet Therapy	✓	✓	✓	✓	✓
Medicine	✓	✓	✓	✓	✓
Food Science and					
Technology	✓	✓	✓	✓	✓
Microbiology	✓	✓	✓	✓	✓
Techniques of					
Food Preparation	✓	✓	✓	✓	✓
Foodservice Administration					
Production,					
Management,					
Equipment,					
Purchasing,					
Legislation	✓	✓	✓	✓	✓
Others:					
Accounting				✓	
Food economics		✓	✓		
Food hygiene		✓	✓		
Personnel management				✓	

graduate in Japan must obtain a license from the governor of a prefecture. The eligibility qualifications for the national examination for registered dietitians vary depending on the length of dietetic education and experience. Those who graduated from a school with a 4-or-more-year course of study and subsequently had 1 or 2 years of experience as a licensed dietitian providing nutrition education and guidance at a facility appointed under the ordinance of the Minister of Health and Welfare are qualified to take the national examination. As of 1990, Japan had almost 532,000 dietitians; about 10% of them are registered dietitians.

In the Philippines, applicants who hold a bachelor's degree in nutrition/dietetics are eligible to take the licensure examination. After passing the examination, the applicant becomes a registered dietitian with a license to practice. Regular renewal of the professional license is required; to renew the license, a registered dietitian must comply with the requirements for continuing professional education as set by the country's Professional Regulations Commission.

Further Education of Dietitians

After obtaining an undergraduate degree or a postgraduate diploma in dietetics, dietitians in all eight countries have opportunities to further their

education by way of in-country graduate programs at the diploma, master's, and doctoral levels (Table 5).

Areas of specialization at the master's and/or doctoral levels are in nutrition, health science, public health, hospital administration, and foodservice management.

Conceptual Considerations Related to Dietetic Education

Table 6 lists some factors that are important for dietetic educators to weigh and consider.

Table 6. Considerations Related to Dietetic Education

- Autonomy – Commonality
- Multiskilling – Distinctiveness
- Revolutionary – Conventional approach/Tools
- Need to retool
 - variations/transitions in nutrition problems
 - families in development
 - information technology
 - trade liberalization

Table 5. Further Educational Programs for Dietitians

Country	Degree	Number of Students per Year (approximate)
Australia	M/MS	No response
	PhD	3 to 4
Indonesia	S1 (Bachelor of Science)	No response
	S2 (Master of Science)	80
	S3 (Doctorate)	20
Japan	MS	50 to 60
	PhD	20 to 30
Malaysia	MSc	6
	PhD	2
New Zealand	MSc	2
	PhD	3
The Philippines	MS	20 to 30
	PhD	3 to 6
Taiwan	MS	27
	PhD	2
Thailand	Diploma in PH	5 to 10
	MS in PH	10 to 15
	DrPH	1 to 2

M = Masters degree
MS or MSc = Master of science
PhD = Doctorate
PH = Public health

Autonomy-Commonality

Universities must retain their academic freedom and independence. It is the right of educational centers to develop their curricula as they see fit, given their specific situation, objectives, and philosophy. There should, however, be common core fields of study to ensure that all those who enter the dietetic world of work possess a base level of knowledge and competence and have shared perceptions of and approaches to the profession, its clientele, and its environment. Table 7 is an example of essential core fields of study that the Dietitians Association of Australia suggests as guidelines for curriculum development.

Multiskilling-Distinctiveness

Dietitians can occupy a wide range of positions, just as others have increasing access to positions that are usually considered "for dietitians". Multiskilling is necessary in today's complex and ever-changing world, but flexibility and versatility must not blur the unique attributes of dietitians and the distinctiveness of the dietetic profession.

Table 7. Core Fields of Study to Assist Curriculum Development

Core Knowledge

- Human nutrition science and dietetics
- Food use in society
- Food science
- Nutrition education and behavioral science
- Nutrition assessment
- Community health
- Organization and management
- Nutrition research and evaluation

Application of Knowledge and Skill at Professional Level

- Interpreting nutrition science as practical information
- Nutrition assessment
- Management of nutrition care in clinical and community settings
- Management of nutrition programs in the community
- Ensuring a safe and nutritious food supply
- Research and evaluation
- Management and professional development

Source: Dietitians Association of Australia, 1993.

Revolutionary-Conventional Tools

Technological advancements have brought the so-called learning revolution and, with it, multichannel teaching, interactive learning, etc. We need to use technology, not because it is there, available, and convenient but because it could be useful in making us better teachers and in making our students better learners. Education must include training in the use of new technology; management of technology and change; considerations of equity, access, and quality; and cost-effectiveness of educational technologies, both traditional and modern. In terms of access, let us not forget that the information highway is better paved in some parts of the world, even in some parts of a country, than in others. As educators, we must constantly ask ourselves, "What problem is answered by the information highway and who benefits from its use?"

Retooling

The challenges of the present and those posed by the future require that we prepare ourselves to meet them adequately. Several elements in today's society and certain images on the horizon make it necessary to reexamine our thrusts in dietetic programs, training, education, and research. Among these factors are variations in nutrition problems, families in development, information and data explosions, and free trade.

Variations in Nutrition Problems

For years, we have focused on the problems of protein-energy malnutrition and nutrient deficiency diseases. In some places, the importance of one or more of these problems remains; in other places, they have become less important; still in other places, the problems are compounded by the emergence of obesity and noncommunicable chronic degenerative diseases (NCCDs).

For communities with protein-energy malnutrition and/or nutrient deficiencies as their primary problem, how do dietitians help reduce these problems and, at the same time, prevent the emergence of NCCDs? For communities with emerging NCCDs, how do dietitians help prevent the problem from increasing? For communities with relatively high prevalence of NCCDs, how do dietitians help reduce the problem?

The pace, nature, and extent of nutrition transition are not predetermined nor homogeneous for all groups and subgroups; neither are its associated or

underlying factors. We need to have a full understanding of the undernutrition-overnutrition situation and its geographical variations in the country and map out different strategies deemed appropriate given the specific problems, resources, and potentials of the people in a given place.

A consideration of the variations in nutrition situations in the country suggests that we improve our understanding of the biosocial and medical aspects of NCCDs, the role of diet in preventing or reversing disease, and what some have referred to as "successful aging," in the sense of postponing, decreasing, or addressing disabilities that tend to be more prevalent as life span increases.

To address all these variations in nutrition problems, dietitians need increased competence in assessment and analysis of nutrition situations, particularly of food intake; greater sensitivity to local conditions, experiences, and potentials; and expanded knowledge about the choice, implementation, and timing of specific nutrition interventions.

Families in Development

Nutritionists advise individuals and families. But there is little in the training and education of dietitians which helps them understand the changes in family structures and functions.

The World Declaration on Nutrition/Plan of Action for Nutrition (1) and the Report on the Cairo Conference on Population and Development (2) underline the crucial role of families in development and the need to strengthen and promote the family as the basic unit of society. Governments are called to formulate family-sensitive policies in the field of housing, work, health, social security, and education in order to create an environment supportive of the family, taking into account its various forms and functions. They are also enjoined to develop systems to monitor the impact of social and economic decisions and actions on the well-being of families, status of women within families, and ability of families to meet the basic needs of their members.

Nutrition program documents are not lacking in rhetoric about a family-focused approach or the child as entry to the family. We need to design these approaches thoughtfully and, when we do this, take into serious account the many differences and similarities in composition, organization, and function of families.

The importance of families will not diminish. Alvin Toffler says that as the Third Wave sweeps in,

there will be a flowering of a multiplicity of family forms, a resurrection of the expanded family, and a return to a home-centered society (3).

Information/Data Explosion

The Third Wave has been described as a civilization driven by knowledge, power, and high technology. There will be vast amounts of information and these will be more accessible through high-speed machine intelligence, a global information super-highway as some have called it.

Already, the existence of a vast array of data and information overwhelms us. We need a mechanism in place to provide institutions involved in education, research, and other activities quick and easy access to local and foreign materials, both print and nonprint. Alternative ways must be found to speed up the flow of information and, at the same time, facilitate understanding of the comparability or noncomparability and uses of such information. Competence in screening, understanding, and using secondary data has to be upgraded.

As dietetics is oriented to action and practice, we ultimately have to respond to questions from individuals and families about what to eat to meet various objectives. In the face of increasingly conflicting information on many aspects of nutrition, these kinds of questions are not easy to answer. We need to take into account empirical correlations, causal theories, value considerations, and life situations.

The first two items require adequate skills in applied statistics, particularly in risk or likelihood assessment. The second two items require cultural sensitivity: memorizing textbook assertions or giving ready-made advice is not appropriate. In order to have a better understanding of the behavior being studied, knowledge and skills in both qualitative and quantitative methods of research are necessary.

Trade Without Barrier

Trade liberalization and global trade competitiveness have been the subject of much debate in terms of who loses and gains and short-term versus long-term effects. We need to consider the effects of trade liberalization and global trade on the food and health situation of those who may be displaced and their families and make sure that safety nets have a food and nutrition component.

The lowering of trade barriers will open up the market to a large variety of goods and services. Consumer education will be very important. How will consumers choose, or do they have to? Is it better

to produce or simply buy? Is it better to engage in a do-it-yourself activity or to pay for someone else's services? What do the labels say or the advertisements mean?

Trade liberalization would lead to renewed emphasis on the role of dietitians as educators and linkages among international, national, and local happenings and among the commercial, technological, informational, and psychosocial spheres of life.

With the increasing prospect of a free flow of services among countries, it may be desirable to develop a minimum entry-level competence for dietitians and a system for monitoring and evaluating dietetic education programs in the Asia Pacific Region, or in subgroups of countries in the Region.

As a result of the World Declaration and Plan of Action for Nutrition, countries around the world have been actively engaged in formulation of a national food and nutrition policy. The World Health Organization Regional Office for the Western Pacific reported that 19 of 25 member states in the region have a food and nutrition policy document (4). Under the section on "the strategy," the report identifies extensive education of the public, health professionals, and policy makers as necessary.

If we are to depict our country's nutrition plan as a homunculus, where will we find the education of professionals in nutrition and dietetics? How prominent is the education of professional nutritionists or dietitians in national food and nutrition policies?

Again and again, mention has been made in this International Congress of Dietetics of the need for educators and educational programs to change. The context of the call for change is primarily the technological sphere. There is another equally important sphere. I close by recommending to this

body a consideration of the need for change in the context of greater attention to human rights (5).

Robert E. Robertson asked (6):

"Nutrition and human rights — why aren't they the most obvious couple? Why aren't the two ideas fused in everyone's mind?"

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