

KERTAS SIMPOSIUM

FUNCTIONAL FOODS FROM THE DIETETIC PERSPECTIVE

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ABSTRACT

Foods and beverages, which are beneficial to health, are referred to as functional foods. In Malaysia, the definition of functional food is still inconclusive. However, direct selling outlets throughout the nation is flooded with these food items since they are distributed under the food supplement category and not covered by the Food and Drug Act 1983. In trying to control the quality and safety of these products, the Ministry of Health of Malaysia has assigned three bodies to participate in the implementation of laws for functional foods. The three bodies are the Department of Food Quality, Malaysian National Codex Committee and The National Pharmaceutical Bureau. The area of nutraceuticals and functional food is still under active research and justifications. As scientists, dietitian require, results from clinical trials before health claims can be made regarding a particular product. The issue of dose and strength of the food component used for therapy is also questionable. Currently we have to protect the consumers on false claims and high costs made by direct sellers. At the same time we have to be more assertive promoting healthy eating and lifestyle campaigns to educate the public. Malaysia has officially launched and implemented its dietary guidelines. However, functional food claims are not incorporated in the guidelines. It is implicit to encourage the consumption of many functional food ingredients such as dietary fibers, antioxidants, carotenoids, phytochemicals, vitamins and minerals. At the same time we should curb the consumption of too much fat, sugar, salt and alcohol in our goal towards the promotion of health. Concurrently, it must be highlighted that there is no one single health food. The key issue is variety based on our food pyramid. Other risk factors such as family history, gender, age, smoking, inactivity, stress aside from high fat, cholesterol, salt, sugar and low fiber intake will have to be incorporated in the maintenance of health. As nutritionists and dietitians, we do not advocate the act of popping pills or tablets or other forms of therapy since it is costly and an unhealthy way of ensuring health. We advocate healthy eating via natural foods and ingredients and the practice of healthy lifestyle.

INTRODUCTION

Malaysia has achieved an economic and political stability during the past thirty years. This has resulted in affluence, change in lifestyle and food habits and rapid population growth. Figure 1 shows the population pyramid, which is still broad, based indicating that a large percentage of the population comprised of young children and adolescents.

However, the middle age, young elderly and old elderly are rapidly increasing. The population has grown at a rate of 2.3 million in the year 2000 to 25.8 million in the year 2005. Adolescents, aged 10-19 years represented 34.5% of the population in the year 2000. However, the older population aged 60 years and above is rapidly increasing due to many factors including the quality of care and the increase in life expectancy for males, which are now 69 years and females 72 years. Concurrently, adults aged 35-65 years approaching economic years represent about 50% of the population. This group is in the phase of economic stability and experiencing change in lifestyle. The majority of them may be having some form of health problems and risk factors towards chronic diseases such as Cardiovascular

Disease (CVD), Diabetes Mellitus (DM), hypertension, gout, osteoarthritis and cancer. Their health treatment behaviour may range from modern medical care to alternative therapy. Since medical care requires them to make a special effort to see the doctor or specialist which may be inconvenient for them, they may prefer to wait until they are really sick before they do so. This is the great opportunity for direct sellers going door-to-door making health claims to the vulnerable targets. The problem arises when these direct sellers who are not health professionals making false health claims to quickly dispose their products. The target groups are made to believe that these functional foods or health food can cure their disease and the problems arise when they suffer complication. It is only right that the consumers arising from this issue food are given paper information.

DEFINITION

Nutraceuticals means food or ingredients, which offer consumers increased health benefits, reaching beyond those obtained from general nutrition (Strategic food solution 1998). Foods and beverages, which are beneficial to health, are referred as functional foods. In Malaysia, the definition of nutraceuticals and functional foods are still

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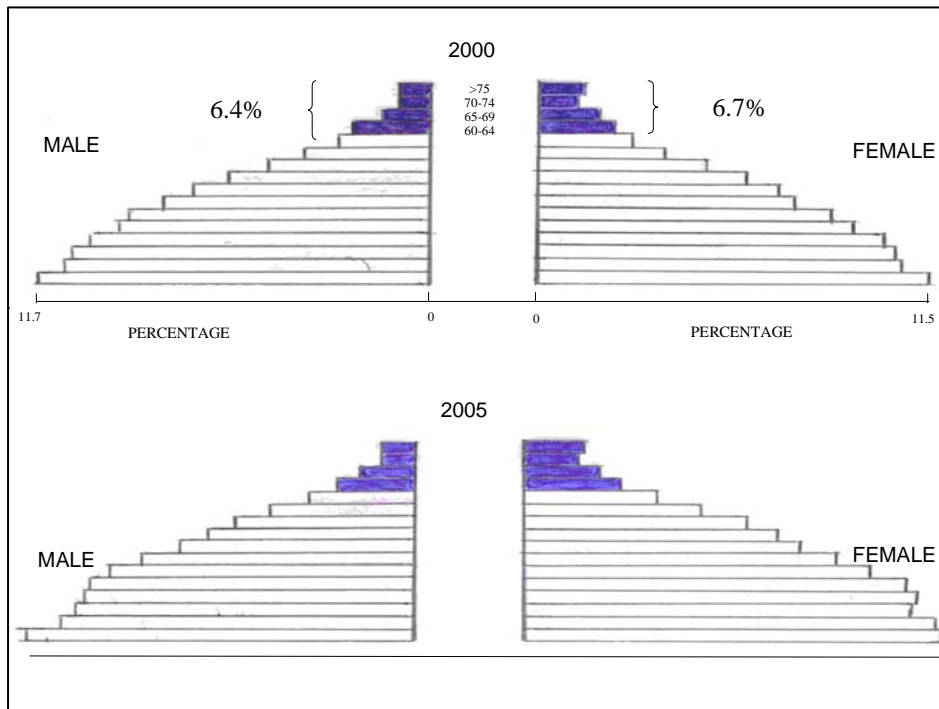


Figure 1: Population structure, Malaysia 2000 and 2005

inconclusive. However, direct selling outlets throughout the nation currently distribute these food items. These nutraceuticals and functional foods have flooded the Malaysian market since they are distributed under the food supplement category and not covered by the Food and Drug Act 1983. In trying to control the quality and safety of these product to the consumers, the Malaysia government under the justification of Ministry of Health Malaysia has assigned three bodies to participate in this implementation of law for nutraceuticals and functional foods. The three bodies are:-

- a. Department of Food Quality Control, Ministry of Health
- b. Malaysian National Codex Committee
- c. National Pharmaceutical Bureau

The distributor in the Department of Quality Control, Ministry of Health, should make registration for nutraceuticals and functional foods substances. Only nutraceuticals and functional foods in their original substrate form can be registered. The others such as in dose form, tablets and others should be put under the National Pharmaceutical Bureau, which are highlighted in the Drugs and Cosmetic Act, 1984. Department of Food Quality Control will check the label of the product to determine its composition. Acts and regulations used in this confirmation are the Food Act 1983 and Food Regulation 1985. Any claims made are for the nutrient substance in the product. Thus, they will not accept a product which is unknown in nutrient composition and that is hazardous to health. A manufacturer can be accused with compound, which

is written in section 13-28 Food Regulations 1983. The amount is subject to the type of product. The exact amount will be decided by the committee.

COUNTRIES PROFILE ON USAGE OF FUNCTIONAL/HEALTH FOODS

Functional foods have limited and vague claim made on foods and products. Examples of foods containing lactobacillus, oligosaccharide, dietary fibre, phytochemicals were seen advertised in Japan. Foods help maintain good GIT condition, whereas health claims are made to functional foods with a disorder or disease, like in America where calcium is associated with bone health, dietary fibre and cancer. In Japan, the term functional has a similar meaning to nutraceuticals. They are different from health foods. In 1984 the scientists and their team coined the word functional and outlined three functions of food, namely:-

- The primary function = nutrition
- The secondary function = sensory satisfaction (flavor, aroma, taste)
- The tertiary function = fortification and modulation of physical systems

It is the third function that they decided to coin the term 'functional foods'. The country has the most experience as early as 1947 on health foods or functional foods. Regulations were made under foods for special dietary uses. They categorized these special dietary uses for five vulnerable groups namely :

1. Foods for medical purpose

2. Foods for pregnant women
 3. Foods for infants
 4. Foods for the elderly
- Foods for specified health use (FOSHU). This is further illustrated in figure 2. The purpose of manufacturing FOSHU is to maintain and promote health, improving the nutritional status and the quality of life.

They are end products and not isolated nutrients or ingredients. FOSHU products contain

certain ingredients such as oligosaccharides and dietary fibers. The examples of end products of foods are drinks, yogurt, cereal, cooking oil, table sugar and noodles. The claims are limited and most of the time are very vague. For example, 90% of the approved food product are gut related and carry a claim saying, 'these food help maintain a good gastro-intestinal condition'. It is therefore not confined to any specific functions.

Table 1: Countries making claims for food and ingredients

| | |
|---------------------------------|---|
| America | Claims for food & ingredients: Calcium & bone health Dietary fiber & cancer Fruits and vegetables & cancer Sodium (salt) & hypertension Folate & Nods Soy protein & cholesterol |
| Australia | Health claims not allowed, folate and nods are under trial |
| China | Health claims based on scientific data in China |
| Taiwan | Health claim – case by case |
| Europe | The new novel foods regulation. A health claim must be sustained |
| Japan | Food registered under FOSHU provide scientific evidence regulations include claim made |
| Philippines | Regulation on health claims similar to USA |
| Singapore & Malaysia | Food products are not allowed to make any health claims |
| Thailand | Any claim made must be sustained |

Source: Foods Facts Asia: Current Topics Food Safety & Nutrition 1999



Figure 2: Food for Specified Health User (FOSHU)

THE MARKETING OF FOSHU PRODUCTS IN JAPAN

Japan has really gone all the way out to promote their FOSHU products. They have 50% of sales in

supermarkets and 24% door to door. They have 100 products approved in 1999. Their distribution are about 50% in supermarkets, 24% in door to door sales convenient stores and even mail orders as shown in Figure 3. Japan has gone as far as

promoting diacyl glycerol as cooking oils. The health food industry is really a multimillion-dollar industry.

Over 90% sales of FOSHU products are related to the improvement of gut functions. They are as follows:-

- a. 83% for lactobacteria
- b. 4% for oligosaccharide
- c. 5% for dietary fibre.
- d. Other products are less than 5%

NEW STRATEGIES FOR DIETITIANS AND NUTRITIONISTS IN MALAYSIA

After analyzing the actual scenario in Japan, we have to really sit back and think as to whether we will follow suit and join the Japanese. Malaysia has spent a lot of money to prepare and launch its Food Pyramid. Healthy lifestyle together with healthy eating propaganda has reached almost all sectors of

the population. If we now pursue to market functional foods as a multimillion-dollar health food industry, what will happen to our healthy campaign to promote healthy eating for the nation since the last two years. Our Food Pyramid is dietary based.

The food pyramid stressed on a variety of foods representing all nutrients that is required for health. They include eating cereals and grains that are not processed as the broad base of the pyramid to provide energy from complex carbohydrates and fibre. Taking three to five servings of fruits and vegetables especially green leafy vegetables and fruits follows this. This is to provide multiple vitamins and minerals and fibre. The next level is to include two small to moderate servings of fish, chicken, lean meats, beans, and tofu as the source of protein, vitamins and minerals including a glass of milk. The top most level is fats, oils, salt and sugar whereby it is advocated to cut down on these food items.

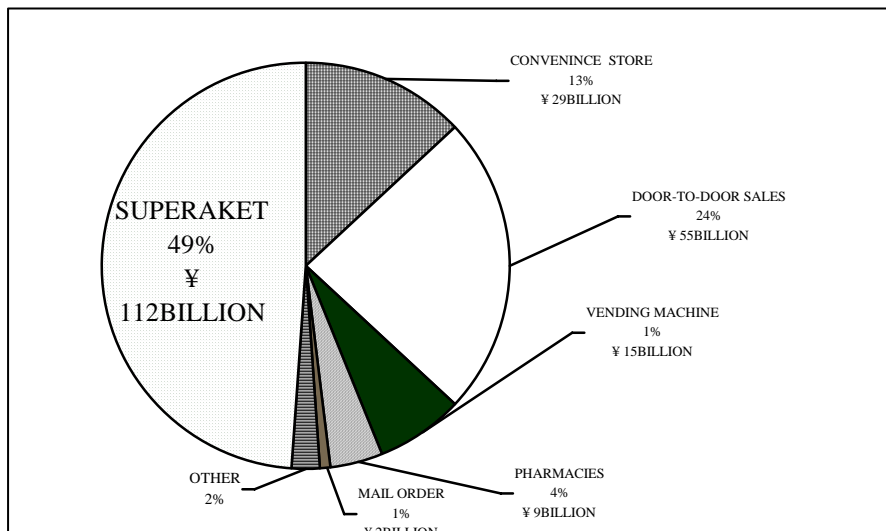


Figure 3: Percentage of FOSHU sales amount per sales route

The Malaysian emphasized food pyramid on variety of foods to ensure health and not on one single food item or food ingredient as advocated by the health food industry to ensure health. Therefore we have to inform the public on how to set mentally to provide balance nutrition for health, to give satiety value and to prevent chronic disease conditions, once diagnosed, pharmaco-nutrition therapy is the recommendation, not to rely solely on functional foods or health foods. If this is allowed by starting our own functional food and health food industry the public will probably forget the actual thrust of healthy eating and totally rely on foods for health. This will lead to a very dangerous situation whereby to uninformed public is at risk to wrong health management and can be very hazardous to their health, at the same time it ends up being more costly.

INCORPORATION OF FOODS BENEFICIAL TO HEALTH INTO OUR FOOD BASED DIETARY GUIDELINES

To overcome the problems of confusion to the public, dietitians have to they are foods or end products of foods and not drugs or medicine and they are part of a normal diet. They should be presented in actual form or as ingredients and no claims made on health. The only claim that should be made is, to ensure health, the Malaysian population should take a variety of foods based on the Malaysian food pyramid. Health foods or functional foods are expensive and dietitians do not advocate ensuring health especially when it is consumed one off and the dosage is not known. Therefore no health or medicinal claims should be made.

Various researches, either local or international are done on the health benefits of ingredients or foods known effects on disease prevention and health are actively underway. The foods that have been identified as to be beneficial are foods containing phytochemicals, fibre, minerals and vitamin containing foods, Table 2 shows the example of foods containing phytochemicals in plants and foods with good source of fibre.

As dietitians and nutritionists, all these foods that have been indicated through research to contain other benefits aside from providing nutrition and

organoleptic properties can be incorporated in the diet of an individual. As an example, in planning a diabetic reducing diet of 1 200kcal/day, the element of fibre in oats, beans and vegetables can be part of the healthy diet as shown in Table 2.

Oats, beans, vegetables and papaya are easily available. Provide fiber, mineral, vitamin, minerals, protein and energy. At the same time they also provide phytochemicals and when eaten with the other food items in a daily diet will ensure weight loss and health.

Table 2: A reducing diabetic diet of 1,200/kcal/day with 31g dietary fibre

| Low fibre diet (1200kcal) | Fibre Content (g) | High Fibre diet (1200kcal) | Fibre Content (g) |
|---|-------------------|---|-------------------|
| Breakfast | | | |
| 1 Slice white bread | 0.8 | 1 oz oats | 5.3 |
| 1 hard boiled egg | | 1 hard boiled egg | |
| ½ cup skimmed milk | | ½ cup skimmed milk | |
| ½ cup strained unsweetened orange juice | | ½ orange | 2.0 |
| Lunch | | | |
| 600 g cooked rice | | 60g noodles | |
| 100 g Chinese cabbage | 1.4 | 40g lady's finger | 2.0 |
| 1 tbs chilli sauce | | 60g kangkong | 2.0 |
| 1 slice papaya | 2.5 | 3 fishballs (plain) | |
| 1 tsp oil | | 2 tofu triangles | |
| | | 1 tbsp chilli sauce | |
| | | 1 slice papaya | 2.5 |
| Snack | | | |
| 2 plain crackers | 0.8 | 1 bowl red bean soup with artificial sweetener | 6.0 |
| ½ glass skimmed milk | | | |
| Dinner | | | |
| 60 g cooked rice | 2.3 | 60g unpolished rice | 2.0 |
| 100 g spinach | | 120g mixed vegetables (peas, carrots, snow peas) | 6.0 |
| 60 g chicken (no skin) | | 1 small apple | 3.2 |
| 1 small apple | 3.2 | 1 tsp oil | |
| 1 tsp oil | | | |
| Snack | | | |
| ½ glass skimmed milk | | ½ glass skimmed milk | |
| Total | 11.0 | | 31.0 |

FOOD BELIEFS

The presence of food beliefs in our culture is still prevalent especially among sick individuals postpartum women and subjects having certain diseases conditions. This presents the vulnerable groups to a more restricted intake. The consumption of certain health food can co-exist with the food avoidance making the patient more at risk towards complications. The approach towards this practice is either to substitute the food items avoided with a food containing nutritional content and at the same time to advise the patients to improve their nutrient intake by adding more variety based on the Malaysian Food Pyramid. The practice of taking

health foods or functional foods distributed by direct sellers or purchased with all the health claims should be stopped since the claims made may be false and patients would stop seeing a doctor at the same time. It is more important for a dietitian to assess the nutritional status of the patient and tries to modify the food intake and incorporate the other daily diet foods that are perceived as beneficial using the food pyramid as a guide to ensure health.

TO COMBAT AGAINST FALSE CLAIMS TO PROTECT THE SAFETY OF CONSUMERS

Treatment is the right of the individual. However informed consent is required. Even though we

advocate healthy eating to ensure health, towards the end of the day the choice whether to follow or not is up to the individual. It is therefore very important that dietitians should convince them by being more assertive in their nutrition education and to be role models in advocating healthy eating and lifestyle. In some circumstances, there are medical professionals including dietitians who themselves either consciously or subconsciously are promoting these health foods or products. It is therefore very important that the public is not confused as to whether to listen to direct sellers and advertisement or to follow the food pyramid which may be too cumbersome for some very busy individuals. They rather skip meal and swallow a supplement or take a functional foods or health foods instead of taking a balance of nutrients in their daily activities.

CONCLUSION

In summary, Malaysia is currently not making the move to make health claims on food or food products. However, various preparations either in the form of foods, capsules, powder under the food supplement category making health claims are still being marketed in the country. It is very important that these products are reported to Ministry of Health to be removed from the market. At the same time dietitians have to be more assertive in promoting healthy eating and healthy lifestyle. As far as foods and ingredients that have beneficial effects via some research are concern, they can be incorporated in our food pyramid as part of our balance diet.

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