

Transitions in diet and health: implication of modern lifestyles in Indonesia

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Indonesia is in the midst of major transitions in food intake and health patterns. These changes are predicated on economic growth, rising levels of education and globalisation of culture. Somehow retaining the food-health advantages of traditional Indonesian lifestyle and accommodating the advances which the West has made, especially in life expectancy, without their increasing health problems and costs, is required. From 1972 to 1992, mortality ranking for cardiovascular disease (CVD) in Indonesia had gone from the 11th most common to the most common. The Jakarta Monica studies (1988 and 1993) provide prima facie evidence that similar cardiovascular risk factors to those in industrialised countries are operative for the emergent CVD problem - positive energy balance with obesity, increased animal fat consumption and decreased intake of plant-derived foods, with their many biologically active components, both nutrient and non-nutrient. Nutrition surveys show that the contribution of fat to energy intake has doubled from 1974 to 1992 (10.4% in 1974 to 20.5% in 1992). Effort is now required to enable consumers to overcome prejudice against plant foods, for whatever reason, to use low fat animal-derived food and for food products and their promotion to favour healthy choice.

Key words: Diet, cardiovascular disease risk factors, animal fat consumption.

Introduction

In Western industrialised countries there have been many studies on the relationship between diet and health. These studies reveal that a high intake of energy and fat, together with a low intake of fibre and antioxidants are contributory to the increasing prevalence of degenerative diseases, such as heart disease, hypertension, non-insulin-dependent diabetes and cancer. In the United States, where heart disease is the number one cause of death, the amount of energy derived from fat is about 40%¹. In developing countries, the dietary pattern is mostly low in fat and high in fibre or, at least, resistant starch along with other biologically important components of plant food. However, wealthier people in developing countries are now tending towards a dietary pattern higher in fat and lower in fibre. They are consuming less food of plant origin and more food of animal origin.

Analysis of studies from 43 countries shows that when the cause of death by infectious diseases is lower than 15 per 1000 and life expectancy is 55-60 years, cardiovascular disease (CVD) becomes a major problem. Indonesia has now reached this level thus, transitions in diet and health in Indonesia is of current interest. Diet itself is influenced by the availability of foods, purchasing power, food habits, nutrition knowledge and globalisation.

Availability of macro nutrients

In line with Indonesia's economic growth, the availability of food has increased steadily over time. Table 1 clearly shows

the increase in the availability of energy, protein, fats and oils, and the percentage of energy derived from fat between 1974 and 1992.

The Indonesian nutrition guidelines recommend that the maximum intake of fat be 25% of energy intake⁴. It is estimated that 9-10% of the population consumes more than 25% of their energy as fat and is therefore at higher risk of getting degenerative diseases.

Table 1. The availability of foods in relation to energy, protein and fat (per person per day).

Nutrient	1974	1979	1984	1990	1992
Energy (Kcal)	2,248	2,443	2,516	2,701	2,968
Protein (g)	45.8	47.1	54.1	60.3	67.9
Fats and oils (g)	26.1	34.4	45.4	56.2	67.3
% energy from fats	10.4	12.7	16.2	18.7	20.5

Sources: References 2 and 3.

Dietary pattern

The dietary pattern of Indonesian managers (n=96) and their staff (n=355) has been studied⁵. The group consisted of 182 women and 269 men of which about 23% had a body mass index (BMI) of more than 25.

Their dietary pattern could roughly be divided into three groups: traditional foods; traditional foods and imported foods; traditional foods, trendy foods and imported foods. Those that had a normal body weight mostly consumed traditional foods, whilst those that consumed trendy foods had higher grades of obesity.

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No relationship was observed between the kinds of fat consumed and obesity, but the risk of CVD and stroke was related to the kinds of fat consumed. Saturated fatty acids were more strongly related to CVD than unsaturated fatty acids.

These results stress the importance of sticking to a traditional dietary pattern, low in fat with a predominant consumption of unsaturated fatty acids in order to minimise the risk of suffering from degenerative diseases.

Nutrient consumption and income

In Table 2, the increased concentration of energy, protein and fat with an increase in income is evident.

Table 2. Nutrient consumption by income.

Income/ person/ mo (rupiah)	Nutrient consumption			
	Energy (Kcal/d)	Protein (g/d)	Fats and oils (g/d)	Energy from fats (%)
< 8,000	1,392	28.4	19.9	12.9
8,000	1,453	31.8	21.5	13.3
10,000	1,585	35.1	25.9	14.7
15,000	1,742	40.4	33.5	17.3
20,000	1,935	47.6	42.1	19.5
30,000	2,066	55.8	51.4	22.2
40,000	2,134	63.6	59.4	25.0
60,000	2,192	72.2	68.8	28.2
80,000	2,251	80.3	77.8	31.0
100,000	2,351	90.4	81.9	31.3
150,000	2,320	82.1	91.2	35.4

Source: Reference 2.

Table 3. MONICA study - Jakarta Project

Variable	Male	Female
Smoker (%)	60	6
Hypertension (%)	14	16
Systolic BP (mmHg)	123 (22)	125 (24)
Diastolic BP (mmHg)	79 (13)	78 (13)
Lipid profiles		
Serum cholesterol (mg/dL)	200 (42)	207 (44)
Serum triglycerides (mg/dL)	140 (68)	144 (102)
HDL-cholesterol (mg/dL)	48 (19)	55 (17)
Hypercholesterolaemia (%)	11	15
Blood glucose (mg/dL)	94.5 (30.3)	98.5 (30.7)
Alcohol drinker (%)	4.8	0.8
Regular exercise (%)	31.2	14.7
BMI	24.2	25.3
Body weight (kg)	57.9 (15.9)	52.6 (18.1)
Body height (cm)	160.0 (5.9)	148.7 (5.8)
BMI > 30 (%)		4.9
ECG finding of myocardial infarction (%)		2.7
Stroke sequelae (%)		0.5

Source: reference 6.

Degenerative diseases

The national prevalence of CVD is not known, but based on the results of the household health surveys from 1972 to 1992, it can be concluded that CVD has become a more important cause of death. In 1972 it was the eleventh cause of death; by 1986 it was number three, and in 1992 it had

become number one, accounting for 16% of the total death. Although this value is lower than that of industrialised countries, where CVD accounts for 50% of the death, there are indications that the prevalence of CVD in Indonesia is escalating. Table 3 shows the results of the MONICA Study (international studies of heart disease risk and events under the auspices of WHO).

Dyslipidaemia, will increase the risk of coronary heart disease (CHD). The results of MONICA studies in Jakarta in 1988 and 1993 revealed that the percentage of people with cholesterol concentrations higher than 250 mg/dl. (6.6 mmol/L) (dyslipidaemia) increases (Table 4).

It has been reported that a 1% decrease of cholesterol concentrations would reduce the risk of coronary heart disease by 2%. Table 4 shows that cholesterol values increased 2-3% within 5 years.

Some studies showed that high intakes of vitamin C, E and β -carotene could lower risk of coronary heart disease⁷. Which again signals that maintenance of high plant food intakes as sources of these and other factors might counter the increased CHD risk.

Table 4. Five-year mean serum cholesterol changes 1988-1993.

Finding	MONICA I MONICA II	
	(1988)	(1993)
Cholesterol (mg/dL)		
Male	200	205
Female	207	213
Cholesterol > 250 mg/dL (%)		
Male	11	14
Female	13	16

Discussion

The following conclusions can thus be drawn :

- In 1992 CVDs were the number one cause of death in Indonesia.
- The higher the income, the higher the percentage energy intake from fat. It is estimated that 9-10% of the population consumes more than 25% of energy as fat.
- Some people, especially managers, tend to consume trendy foods and imported foods besides their traditional foods with implications for potentially deleterious trend-setting. This happens at a time when socio-economically advantaged individuals in industrialised countries often seek to avoid such dietary patterns.

The percentage of people with high cholesterol levels (hypercholesterolaemia) in 1993 was higher than in 1988, indicating an increase in the number of people at risk of suffering from coronary heart disease.

A diet containing fewer foods of plant origin might also contain less anti-oxidant nutrients such as vitamin E, β -carotene, vitamin C and selenium. But, an increased consumption of animal foods increases the intake of bioavailable iron and zinc.

The Indonesian dietary guidelines were advanced in 1995. These will be gradually made public through social marketing. Wealthy individuals should decrease their fat consumption to less than 25% of energy, for example by reducing their consumption of animal foods, especially fatty

meat. It should be noted that in some countries the recommendation for increased intake of vegetables, fruits and cereals seems to have had little effect. This may be due to several factors, such as⁸:

- Consumers preference and convenience
- Concern that an overly vegetarian diet may be nutritionally inadequate
- Some food industry groups, whose product sales could be adversely affected by the recommendation engage in counter-advertising.

With advancing age illness and disease increase. But there are opportunities from fetal life, through childhood and adult life by lifestyle means to prevent or slow the onset of illness and disease with advancing age. Morbidity may be compressed towards the later years, and life expectancy prolonged⁹. These efforts may be still worthwhile in middle or older age.

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膳食改變與健康：印尼現代生活方式的影響 摘要

印尼人的膳食攝取和健康模式在轉變中。這些轉變是以經濟增長、教育水平的提高和文化普及為基礎的。以某種方式保留印尼人傳統生活方式，如食物——健康的有利條件，並提供西方已建立的先進經驗是需要的。從 1972-1992 年，印尼人的心血管疾病死亡率從第 11 位升至最普遍。雅加達 (Jakarta) Monica 研究 (1988-1993) 提供了主要的証據，指出了工業化國家心血管的危險因子對心血管病問題是起作用的，如能量正平衡和肥胖症，動物脂肪消耗增加和植物性食物和營養素，非營養素的許多生物活性成份攝取減少。營養調查顯示由脂肪供給的能量從 1974 到 1992 增加了一倍 (1974 為 10.4%；而 1992 為 20.5%)。現在需要努力使顧客們克服以任何理由抗拒植物食品的偏見，食用低脂的動物性食物和食物製品來改善他們的健康。

TRANSISI DIET DAN KESEHATAN: IMPLIKASI DARI POLA HIDUP MODERN DI INDONESIA

Pola hubungan antara diet dan kesehatan di Indonesia mengikuti negara maju. Penyakit kardiovaskuler menjadi penyebab kematian utama di Indonesia sejak tahun 1992. Ada indikasi kuat bahwa transisi epidemiologi ini berhubungan dengan gizi. Hasil survei nasional menunjukkan bahwa kontribusi lemak terhadap asupan energi telah meningkat dua kali lipat dari tahun 1974 hingga 1992 (10.4% pada tahun 1974 menjadi 20.5% pada tahun 1992). Pertumbuhan ekonomi yang cepat di Indonesia juga menyebabkan perubahan pola hidup dan kebiasaan makan yang mengarah pada tingginya konsumsi lemak. Prevalensi hiperkholesterolemia (sebagai salah satu faktor resiko penyakit jantung koroner) cenderung meningkat. Hal ini terbukti dengan studi MONICA I pada tahun 1988 yang kemudian dilanjutkan dengan MONICA II pada tahun 1993 di Indonesia.

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