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Literature Review of Food Security and Health Among Indigenous People in Malaysia

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Abstract

This article will discuss about domestic and international research on food security and health. Based on the discussion in the past review of the work, there are various factors that affect the discomfort of food. These include physical, social and economic aspects. Threats to the discomfort of these food will ultimately affect the physical and mental health of humans, thereby affecting human capital productivity. Therefore, the risk factors of food disorders should be controlled and overcome to ensure a healthier and better quality of life especially among indigenous people.

Keywords: Food Security, Food Insecurity, Health, Indigenous People.

Introduction

Food and Agriculture Organization (FAO, 1996), defines food security as a situation in which all people at all times, have access economically and physically to sufficient, nutritious and safe food to meet the needs and tastes of nutrition for an active and healthy life.

Despite our progress and understanding of protecting human rights, food security problems continue to affect hundreds of millions of people around the world. FAO estimates that one out of eight people in the world (870 million) suffers from chronic malnutrition in 2010-2012 (FAO, 2012). This is due to social inequalities from household level to international level. In addition, there are various other factors that contribute to this problem such as climate change, high demand for (biofuel) and price fluctuations that have worsened this situation.

Many studies have shown that the prevalence of chronic diseases is high and alarming among aborigines around the world (Anand et al., 2001 et al., 2001 et al., 2001; In fact, according to Colin, N. et al. (2010), although Malaysia as a whole has experienced a significant increase in population health since 1957 (independence), the overall health of the Indigenous is far behind compared to other ethnic groups. Indigenous still suffer from malnutrition, high infection rate, including malaria and tuberculosis.

Compared with three other ethnic groups (Malays, Chinese and Indians) in Peninsular Malaysia, the Indigenous people health and nutrition level is still at an unfavorable level (Khor 1988; Ismail et al., 1988). Che Noriah Othman et al. (2012), also states that the process of modernization has also brought a change in the habits and lifestyles of the Indigenous which contribute to new-era illnesses such as obesity and heart problems. Surprisingly, there is a high percentage of Indigenous patients suffering from Osteo (joint inflammation) which is one of the common diseases among Malaysians.

According to Suki Mee (2015), chairman of the Indigenous People Foundation in his speech stated that the change in Indigenous diet is a non-natural change, where the development of the urbanization process has had a major impact on the changes in food intake which eventually affects the health. In addition, low income factors, lack of knowledge and limitation in the selection of balanced and nutritious food further expose them to the risk of getting sick. Based on the given statement, the health status of Indigenous has become increasingly alarming and should be addressed by the relevant parties.

Problem Statement

Studies on food security and their health impacts are more widely practiced outside of the country. In fact, a study on food security and health for Indigenous people in Malaysia is far behind compared to Indigenous socio-economic and cultural studies.

According to Ismail (2002), in Malaysia, developments in socioeconomic development over the past two years have brought about changes in dietary habits, food purchases, usage patterns and lifestyles. During the same period, there was also an increase in patients with diabetes, heart disease, high blood pressure and cancer. Ki Phua (2015); Yusof et al. (2007), argued that the lack of food and nutrition practices that were unhealthy and balanced had caused health problems and substance abuse among Indigenous communities. Among the many health problems faced due to malnutrition are anemia, lack of iodine, vitamin A deficiency and mumps.

According to Ki Phua in the Malaysian Journal of Public Health Medicine (2015), unhealthy eating habits also cause overweight or obesity problems among Indigenous patients that can cause illnesses such as diabetes. Furthermore, worm infections among the Indigenous will have a greater impact on health if they suffer from malnutrition. For example, anemia can arise from the hookworm as the worm will suck up the blood and may cause internal bleeding. Additionally, worm related diseases such as *Ascaris*, *Trichuris* and the hookworm continue to be faced by Indigenous in Malaysia. They may also be infected with other parasites, such as malaria parasites, microsporide parasites and *Cryptosporidium* parasites due to unhealthy eating habits.

The researchers have also found some recent studies on the Nutritional and Health Levels of the Indigenous and are summarized in the form (Table 1.1) below. Consequently, intake of food that is not balanced and sufficient has influenced human health and growth.

Table 1.1: Summary of studies Indigenous nutrition and health level

Researchers, publication year, place and sample study	The main formulation related to nutrition level
Hayati et al. (2007) Lembah Belum, Gerik 58.7% Jahai dan 41.3% Temiar	63.2% body weight 26.7% less weight 10.1% overweight 40% nutritional deficiencies 0.8% over nutrition
Haemamalar et al. (2010) Che Wong 26 households consisted of 29 males and 28 females	Men (72.4% normal body weight, 13.8% less body weight, 10.3% body weight and 3.3% obesity). Female (46.4% body weight, 25% body weight and 28.6% body weight) berlebihan).
Che Noriah Othman et al. (2012) Kg Kuala Boh, Selangor 35 Orang Semai	45.7% body weight 8.6% less weight 37.1% overweight 8.6% obesity
Yi Xin Cheng et al. (2014) Kg Air Bah, Perak 45 Orang Lanoh	37.8% normal body weight 26.7% were pre-obese 15 respondents had high blood pressure 5 people have high blood glucose

Based on several examples of the results of the above study, the mean of weight in both Indigenous sex is lower than that of the Malaysian population. Although there has been an increase over the years, the statistics of underweight (underweight in relation to age) and stunted in growth (underheight in relation to age) Indigenous children remain significant. The average weight of the Malaysian population is (55 kg for men and 50 kg for women) as reported by Teoh (1975). The Indigenous people are lighter compared to the Malaysian population in general with a mean weight of 52 kg and 46 kg for males and females.

In conclusion, nowadays Indigenous is also more susceptible to diseases such as heart, hypertension and diabetes due to unhealthy eating habits. Hence, the question of why health problems among the Indigenous are increasingly worrying. Studies show that there is a link between nutrition and health. Healthy and adequate nutrition practices can reduce the risk of illness and vice versa.

Indigenous Backgrounds in Malaysia

According to Hasan Mat Nor (1988), it has been stated that the Indigenous people are defined according to the legal classification of which there are two indigenous groups in Malaysia namely Bumiputera and Indigenous. The racial groups classified as bumiputera include the Malays in the Peninsular; Malays, Iban, Bidayuh, Kayan, Kenyah, Kelabit, Melanau, Murut and other natives in Sarawak; And the Malays, Kadazan, Dusun, Bajau and other natives in Sabah. While the Indigenous also include three major ethnic groups known as Negrito, Senoi and Malay-Proto.

The Indigenous community is a Native minority community living in Peninsular Malaysia. Most of them live in forest areas and still practice traditional ways of life that are heavily influenced by the environment and ancestral inheritance practices. The Malaysian government has given a new title, the Indigenous, to recognize this community as the earliest Indigenous Peoples in the country (Rosley, N. A., 2009).

According to Mee, S. & Ibrahim, Y. (2008), the Indigenous community also practices a diverse range of cultures, abstinence, beliefs, health practices and their unique living values. The Indigenous community also has a harmonious life value among their people and their natural environment. Hence, their relationship with humans and the environment affects their lifestyle and economic resources. The Indigenous usually settle in three major settlements, namely in the interior, periphery and municipality.

According to the Indigenous Development Department (2015), the Aboriginal Peoples Act 1954 (Act 134) under Aboriginal Peoples Ordinance No. 3, 1954 which was amended in 1974, setting the terms and qualifications to be regarded as the Indigenous communities has been described in detail. Based on Section 3 of the Indigenous Act 1954 (Act 134), Indigenous is defined as follows:

- i) Any person whose father is a member of the Indigenous ethnic group, who speaks the Indigenous and lives according to the Indigenous way of life and follows the Indigenous customs, and includes a descendant of the man;
- ii) Any person from any race taken as an adopted child by the Indigenous and who has been raised as an Indigenous, usually speaks the Indigenous language, lives according to the Indigenous way of life and indigenous customs, and becomes members of an Indigenous community; or
- iii) A child from any union between an Indigenous girl with a man of another race, provided that the child normally speaks the Indigenous and the Indigenous beliefs and is still a member of an Indigenous community.

According to (JAKOA, 2013) total number of Aboriginal in Malaysia is 178,197. Table 4.1 shows the Indigenous population by state, in 2013.

a) Table 4.1: Indigenous people by state, in 2013

State	Population			Group of races			
	Male	Female	Amount	Senoi	Melayu Pruto	Negrito	Jumlah
Pahang	35,323	32,183	67,506	29,439	37,140	925	67,504
Perak	27,716	25,583	53,229	50,281	605	2,413	53,299
Selangor	9,254	8,333	17,587	5,073	12,512	3	17,588
Kelantan	7,140	6,317	13,457	12,047	29	1,381	13,457
Johor	6,702	6,437	13,139	55	13,084	1	13,140
N.sembilan	5,461	5,070	10,531	96	10,435	0	10,531
Melaka	778	737	1,515	28	1,486	1	1,515
Terengganu	474	419	893	818	41	34	893
Kedah	155	115	270	19	0	251	270
Jumlah	93,003	85,194	178,856	97,856	75,332	5,009	178,197

Source: Indigenous people Development Department, 2013.

Post-Food Security and Health Review Overseas Study

i. Global Food Security Scenario

According to FAO (2015), a total of 72 countries from 129 developing countries or more than half of the monitored countries have achieved the Goal Development Goal 1 targets (MDG 1). 2015 marks the end of the monitoring period for the World Food Summit (WFS) and the Millennium Development Goal (MDG). Overall, for developing areas, the population with malnutrition decreased to 12.9% compared to 23.3% in 1990-1992. For some areas such as, Latin America, eastern Asia, Southeast and Central Asia, as well as areas in north and west Africa have made rapid progress. Progress has also been recorded in southern Asia, Oceania, the Caribbean and eastern Africa, but at a slow pace of growth to achieve MDG 1 targets to reduce chronic malnutrition.

According to FAO (2015), the latest estimates show about 795 million people in the world, including 780 million in developing countries are experiencing hunger problems. This means one out of nine people suffers from food discomfort and malnutrition. This figure shows a decrease of 167 million compared to the past decade and 126 million, lower than 1990-1992. The growth of the global population showed a decrease in malnutrition ie 10.9% in 2014 compared to 18.6% in 1990-1992. However, South Asia and sub-Saharan Africa still show high levels of food discomfort and lack of substances.

Economic growth is essential to sustain progress in reducing poverty, food discomfort and malnutrition. For developing countries and rural populations, the percentage of food discomfort and malnutrition is high. Hence, efforts to promote growth in agriculture become an important component in strategic efforts to promote inclusive growth and improve food security and nutrition. Inclusive growth encompasses the provision of employment opportunities to improve the economy as well as opportunities to increase knowledge and skills (FAO, 2015).

According to Kirang Kim, Mi Kyung Kim, Young Jeon Shin (2008), over the last two decades, the problem of food disasters and hunger does not only occur in backward or developing countries but also in many developed countries, the West. In fact, many studies have been carried out by outside countries such as Canada and America to determine and measure the extent to which this problem affects the country's growth and human health.

ii. Threat Factor of Food Insecurity

Lack of food is also a concern for countries rich in food sources such as the United States as well as poor countries around the world (Maxwell and Frankenberger 1993, USDA and USDHHS 1994). Morris, Neuhauser, and Campbell (1992) examined three factors that could limit the finding of food sources which led to the disincentives of food in rural areas, limited number of supermarkets, lack of food availability and high cost of living.

While according to Wood (2001), food disorders can occur at individual or community level. Factors that indicate the risk of food discomfort to the community include:

- i. No access of clean water sources.
- ii. No food supply (within 2.5km or walk).
- iii. No personal transportation and public transportation are inadequate or inaccessible.

- iv. Less diversification of food sold in the store (food selection is limited).
- v. Difficult to get food (no access).
- vi. Behavioral changes are addictive (drugs, alcohol, drugs and gambling).

Wood (2001) also emphasizes that factors affecting food disadvantages are the same throughout the world, whether they live outside Australia or in metropolitan cities. Additionally, according to Wood (2001), an important way to improve the public's food security is to increase access to food in the community. Food access has been defined as access to good quality, safe, affordable, nutritious and culturally acceptable food and provides healthy food choices. It should be easy to find whether within walking distance and frequent and affordable public transport facilities. People are at risk for food disorders when they have limited access due to economic, physical and social factors.

According to Santich (1992), economic access means having sufficient financial capability to purchase nutritious and adequate food for households. Low income is one of the main obstacles in adopting a healthy diet. The main component of expenditure for low-income residents is housing and bills. This is followed by personal costing expenses including cost of drugs, alcohol, clothing, cigarettes and the rest of the balance for food purchase (Northeast F.A. 1992).

According to Booth (2001), in Australia, the groups of people who are at risk of food discomfort are those who are living in remote areas, Australian Aborigines, homeless, low-income, disabled, elderly and single mothers. In addition, food shortages combine many of the more sophisticated social factors affecting access to food - housing, transport, education, government policies and cultural / religious factors also affect food selection.

iii. Food Security and Climate Change

Climate change opens a new global perspective especially in relation to food security issues and the adverse impact of rural populations (FAO, 2008a). This phenomenon refers to the changing world climate that impacts both humans and ecosystems either directly or indirectly. United Nation (1992), describes climate change arising from human activities that directly or indirectly alter the composition of the global atmosphere. Global warming since 1850 following the increase in greenhouse gases has had a significant impact on food security (FAO, 2008a). Climate change not only changes temperatures and rains, but also affects food production in most countries of the world (FAO, 2005a) and affects the living standards of world residents involved in the agricultural sector.

Global climate change has resulted in other productivity of agriculture, fisheries and other human activities. The world conference on food security in Rome in 2008 has stated that developing countries will be affected by uncertain weather conditions (FAO, 2008b).

In addition, climate change also implies other factors such as human health. A person needs to get enough nutrients to maintain health. If individuals suffer from low nutrients due to inadequate food intake, the potential for health problems occurring resulting from nutrient deficiency is high such as metabolic disorders and skin disorders (James et al., 2011).

In addition to the implications for health disorders and food productivity, studies by Gregory et al. (2005), also explained that the effects of climate change have affected the results of hunting and fishery activities in Europe. According to Swaminathan (1996), countries in Asia and Southeast

Asia will have the impact of severe weather changes due to population surplus. This is because the excess of population will put pressure on the use of food sources. Limited food sources will cause health problems because humans do not get enough food and nourishment to survive.

iv. **Impact of Food Insecurity on Health**

According to the Yarra Food Insecurity Demonstration Project (2002), food disorders can lead to poor physical and mental health problems, especially among disadvantaged groups such as low income and homeless people. Improving food security can ensure the health and well-being of individuals, communities and the entire population.

There is a strong relationship between dietary quality and socio-economic status (Dowler, 2001). The quality of the diet is also affected by the lack of food sources. Those who suffer from food discomfort tend to consume less food and food with low diet quality (Kendall et al 1996. This indirectly affects health and quality of life (Campbell, 1991).

Food insecurity among the households has implications for the three main groups - children, women and parents. The study by (Gundersen, 2007, US Census Bureau, 2010; US Department of Agriculture, 2011), has shown that food discomfort is associated with low academic performance, unsatisfactory emotional and health problems among children. Food disorders in the first three years of life have had a significant negative impact on the development of physiology, behavior and cognitive development among children (US Census Bureau, 2010). Additionally, children who are suffering from food disorders are more likely to see the doctor more often despite not having health insurance (US Department of Agriculture, 2012).

Food insecurity also affects the elderly. The inadequacy of food among the elderly will increase the risk of unsatisfactory health and unbalanced nutrition through low nutrient intake. Lack of nutrients among the elderly will increase the risk of illness, infection, disability and tendency to stay in hospital (Lee and Frongillo, 2001).

Generally, the elderlies are at risk of having a nutritional problem because they live in poverty and are inadequate in terms of quantity and quality of health and food services. Older people also often eat inadequate quantities due to marginalization of the community, poor sense of function, digestive problems, lack of physical activity, lack of effort, and habits of taking non-nutritious foods (Rousset, Droit-Volet, and Boirie, 2006).

Studies in Malaysia

i. **National Policy Scenario on Food Security**

According to Noorfazreen and Asmak Ab Rahman (2010), food security policy has long been implemented in Malaysia since before independence through the State Rice and Rice Policy. Its emphasis has been on paddy crops which are the main source of food for the country. However, the policy was not exhaustive to all aspects of the main foodstuff until 1984, the Malaysian government had implemented the First National Agriculture Policy (NAP1). Then, from 1992 to 1998, the government launched the Second National Agriculture Policy (NAP2). Subsequently, in 1998, the government launched the Third National Agricultural Policy (NAP3) for the period 1998 to 2010.

The National Agriculture Policy places more emphasis on existing agricultural practices. As the world food crisis will have a negative impact on the country's food supply, the National Food Supply

Guarantee Policy has been enacted. This policy has been approved by the government on 2 May 2008. In RMK 9, this policy focuses on food security assurance at an adequate level in meeting the country's needs. This is a reaction to the government's concern about the future of the agricultural sector to the people and the country. These policies have been implemented through the Five Year Malaysia Development Plan.

ii. **Food Security and Poverty**

According to Norhasmah Sulaiman (2004), food discomfort can occur when humans do not get enough food all the time for a healthy and active life. At household level, food disorders occur due to low socioeconomic status, imbalance in diet and low nutritional status. Low socioeconomic status is often attributable to low monthly income, low per capita income, low education status and lack of regular employment among adult family members.

While according to Asmak Ab Rahman (2009), the inability to get food, either for a long time, or at a certain time, is closely related to individual or household income. Sufficient income enables individuals to purchase food even at high prices. Therefore, direct food security is closely related to one's income. Lack of income and poverty cause a person to be less able to purchase a diet that has a balanced diet sources of protein, carbohydrates, energy, minerals and vitamins which are important for growth and health.

iii. **Food Security and Climate Change**

Food security issues became a global concern including in Malaysia, especially when food prices, especially rice, increased dramatically in 2008. The increase in food prices was seen through the increase in the Consumer Price Consumer Price Index from 100 in 2005 to 124.1 in 2010 (MOA 2011). This issue is expected to be more challenging as a result of climate change, limited production factors, input price increases, competition for consumption of foodstuffs for bio-production (fuel), food poisoning and lack of fertile soil and water resources (MOA 2011; Fatimah et al 2010).

According to FAO (2005), climate change not only changes temperature and rainfall, but also changes food production in most countries of the world. In the FAO report (2008), the impact of climate change has caused damage to infrastructure and housing, affecting food prices and increasing dependence on food and import aid.

In Malaysia, a study by Chamhuri et al. (2009), anticipating that paddy production in Malaysia will experience a decline in the occurrence of climate change. This problem arises because climate change causes water supply and other resources to decline, which in turn affects the level of soil fertility and the spread of pests and disease outbreaks. In addition, based on its findings, it also implies that states with high levels of poverty such as Kelantan, Terengganu, Perlis, Kedah and Perak are among the most vulnerable states to experience adverse effects due to climate change and crop deterioration.

Conclusion

According to FAO (2009), there are four main components related to food security: a) availability of food (food availability), referring to adequate food sources, b) food accessibility, which explains how food sources are obtained, c) food utilization, describing the benefits of food to humans and d) food

stability system which looks at the stability of supply and production of such food sources in meeting the needs of humans for a certain period of time to determine whether they are sufficient or otherwise. These four components are guidelines for assessing food security aspects that have impacts on human health. In addition, according to FAO (1999), good food security is dependent on the ability of individuals or a family to access adequate food sources in terms with nutrients and complete substances.

In conclusion, nutritional and health problems among Indigenous people in Malaysia are still at an alarming level. In fact, they are more susceptible to more dangerous diseases such as obesity, diabetes, hypertension and heart diseases. These diseases may penetrate due to unhealthy and unbalanced eating habits and lifestyle changes. Healthy, balanced and adequate nutrition is important for growth and body's health as well as mental development. Based on the above discussion there are various factors that cause the threat of food discomfort which can ultimately affect human health.

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