The Ecology of Health and Nutrition of "Orang Asli" (Indigenous People) Women and Children in Peninsular Malaysia

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INTRODUCTION

While there is no single accepted definition of indigenous peoples, these are social groups that share similar characteristics such as occupation within defined ancestral territories, maintenance of cultural, social, economic and political institutions within the territories that are distinct from those of the dominant societies and self identification of tribal groups (UNDP, 2006). There are estimated 300 to 350 million indigenous peoples worldwide or about 6% of the total world population with at least 5000 distinct indigenous groups in over 72 countries (WGIP, 2001; IWGIA, 2006). Many of these indigenous peoples live in remote areas of the world and depend substantially on the natural resources in the ecosystem for subsistence.

Globally, the health of indigenous populations varies in levels, patterns and trends. However, in most countries, large disparities in health exist between the indigenous and non-indigenous populations (Ring and Brown, 2003). In countries undergoing epidemiological and socio-economic transitions, the indigenous peoples not only experience communicable diseases but also lifestyle non-communicable diseases such as obesity, diabetes mellitus and cardiovascular diseases. These dual forms of diseases experienced by indigenous peoples is a challenging public health concern as the etiological factors and the strategies required to address the concern may be different than those observed in non-indigenous groups. Genetic vulnerability, socio-economic disadvantages, resource alienation and political oppression have been implicated in the current health status of the indigenous peoples (Durie, 2003). Thus, a discourse on the health of indigenous people needs to be set against past and current ecological perspectives.

Malaysia has undergone major demographic and socioeconomic changes since independence in 1957 that have led to significant improvement in the health of its general population. Despite progress in economic development and continuous efforts by the government, the health of "Orang Asli", the indigenous peoples of Peninsular Malaysia, continues to lag behind that of the general population. These health differentials are particularly pronounced among the nutritionally vulnerable groups such as women and children. Thus, this paper will focus on the health and nutrition of the Orang Asli women and children from ecological perspectives.

ORANG ASLI – BACKGROUND

Demography

Orang Asli (translated as "original peoples") are the indigenous inhabitants of Peninsular Malaysia. They constitute a minority group making up approximately 0.6% of the total population of Malaysia (22.2 million in 2000). The figure for the total Orang Asli population differs somewhat depending upon the source. The 1991 national census recorded 98,494 Orang Asli (Department of Statistics, 1997) while the more recent 2000 census recorded 132,486 Orang Asli (Department of Statistics, 2006). The Department of Orang Asli Affairs or JHEOA reported the total population of Orang Asli to be 91,317 in 1992 (JHEOA, 1992), 106,131 in 1997 (JHEOA, 1997) and 149,723 in 2004 (JHEOA, 2004).

Orang Asli are not a homogeneous people but they are officially classified into three main ethno-linguistic groups namely, the Senoi, Proto-Malays or Aboriginal Malays and the Negritos, each consisting of several dialectic sub-groups (Table 1). The Senoi, located mainly in the central states of Perak and Pahang, is the largest group with a population of about 55% of the total Orang Asli. The second largest group of Orang Asli is the Proto Malays forming 42% of the Orang Asli population. They are found largely in the central and southern states particularly Pahang, Johor, Negeri Sembilan and Selangor. The Negritos are predominantly found in the northern region of the peninsula in the states of Kelantan, Perak and Pahang. They constitute the smallest group comprising approximately 3% of the Orang Asli population. The proportion for each of these

major ethnic groups has somehow remained constant throughout the decades.

Table 1: Major and sub-groups of Orang Asli and population distribution

Major groups	*Sub-groups*	*Population N (%)*	
		1992	*2004*
Senoi	Semai, Temiar, Che Wong, Jah Hut, Semoq Beri, Mah Meri	49,562 (54.3)	80,972 (54.1)
Proto Malay	Jakun, Temuan, Semelai, Orang Kanaq, Orang Seletar, Orang Kuala	39,054 (42.8)	63,900 (42.7)
Negrito	Bateq, Kensiu, Kintaq, Jahai, Lanoh, Mendriq	2,701 (3.0)	4,845 (3.2)
Total		91,317 (100)	149,723 (100)

Source: JHEOA (2006)

There are gradual shifts in the rural-urban distribution of Orang Asli in Peninsular Malaysia since 1970. The 1991 census showed that the majority of Orang Asli lived in rural areas (88.7%) and small towns (2.4%) with a small percentage (9%) in urban areas (Department of Statistics, 1997). By 2000, 11.3% of Orang Asli had settled in urban areas.

The Orang Asli population has been growing at a relatively high rate in recent decades. Between 1950s-1970, the average annual growth was about 2% and this increased to 2.3% in the 1970s and further accelerated to 3.5% in the 1980s (Table 2). The average annual growth rate of Orang Asli population was slightly reduced to 3.3% for the period of 1991 – 2000, however, it is still higher than the national population growth rate of 2.4% (Department of Statistics, 2006). As a consequence, the Orang Asli population has a median age of 16.7 years and a large proportion of young population. In 2000, 46% of the Orang Asli was below 15 years of age compared to 34% for the total population in Malaysia. Concomitantly, the proportion of the working age group (15-64 years) for the Orang Asli population is lower than that for Malaysia as a whole (52% and 62% respectively in 2000). Hence, the Orang Asli population carries a much higher child dependency ratio (ratio of children aged 0-14 years per 100 persons aged between 15-64 years) than the general population (87% and 55%, respectively) (Table 3). The large proportion of Orang Asli children has implications on needs for social care including education, health and nutrition.

Table 2: Growth rate of Orang Asli population, 1947 – 2000

Year	*Population*	*Period*	*Average annual growth rate (%)*
1947	34,747		
1957	41,360	1947-1957	1.8
1970	53,379	1957-1970	2.0
1980	67,014	1970-1980	2.3
1991	98,494	1980-1991	3.5
2000	132,486	1991-2000	3.3

Source: Department of Statistics Malaysia (1997, 2006)

Table 3: Comparison of age indicators of Orang Asli population and total population of Peninsular Malaysia, 1991 and 2000.

Age indicator	*Orang Asli population*		*Population of Peninsular Malaysia*	
	1991	*2000*	*1991*	*2000*
Median age	16.4	165.7	22.2	22.4
Dependency ratio	96.6	91.2	67.7	61.4
Child dependency ratio	92.6	87.2	61.0	55.0

Source: Department of Statistics Malaysia (1997, 2006)

Administration

Before the Second World War, there was no specific administration for the Orang Asli. The general attitude of the British colonial officials towards the Orang Asli then was "one of patronizing benevolence" and the task of the government was to "protect and preserve them from the ravages of modern life" (Carey, 1976). At the end of World War II, in the face of communist insurgency in Malaya, the British Military Administration (BMA) established in 1951 a Department of Aborigines under an Adviser on Aborigines Affairs, whose primary task was to win over the Orang Asli from providing support to the insurgents. This was partly achieved through the provision of concrete forms of help including medical treatment to the Orang Asli.

The Department of Aborigines in 1955 became the Department of Orang Asli Affairs (Jabatan Hal Ehwal Orang Asli or JHEOA) housed in the Ministry of Home Affairs. Obviously, the concern for the welfare of the Orang Asli then still stemmed from the country security considerations. The end of the communist threat saw the move of JHEOA out of the Home Affaires in 1964 to the Ministry of Lands and Minerals.

Subsequently, the JHEOA was housed in five different ministries, perhaps reflecting the ambiguous stand of the administration towards the Orang Asli. Since 2001, the JHEOA has been in the Ministry of Rural and Regional Development.

The first legislation that affected directly the Orang Asli was the Aboriginal Peoples Ordinance in 1954 and amended in 1967. This ordinance was deemed a "milestone as the government for the first time, officially accorded recognition to the right of the Orang Asli to follow their own way of life" (Carey, 1976). The Aboriginal Peoples Ordinance 1954 (Akta Orang Asli, Akta 134) states that it is "an Act to provide for the protection, well being and advancement of the aboriginal peoples of West Malaysia". The Act provides for the definition of "Orang Asli", the appointment of the Commissioner of Orang Asli and deals largely, in almost half of the 19 Sections, with the issue of lands inhabited by Orang Asli. Basically, the Act grants Orang Asli the rights to their inhabited land and land where they forage and cultivate but only upon due declaration by the state government of these lands as Orang Asli reserves or areas. Unfortunately, the Act does not make it a duty for the state government to declare all these lands as Orang Asli reserves or areas. Thus for example as of 1996, only 18,600 hectares have been gazetted as Orang Asli reserves out of the 132,000 hectares that JHEOA had requested from the state governments (only 14%) (Nicholas, 2000). On the other hand, the Act permits already gazetted Orang Asli reserves or areas to be degazetted by the State Authority upon notification. Therefore, it appears that the Act only confers the right of occupancy to Orang Asli as if they were tenants to lands that they and their ancestors have been occupying for thousands of years.

Another important regulation that bears on the lives of the Orang Asli was the Statement of Policy regarding the Administration of the Aborigine Peoples of the Federation of Malaya, published in 1961. This document reaffirms the rights of Orang Asli to their own traditional way of life, and that they should be encouraged to integrate with the mainstream population but without coercion. To the administration, integration means bringing the Orang Asli out of their interior habitats and be assimilated with the modern lifestyles of the other ethnic groups. In its website (www.kempadu.gov.my/jheoa), the JHEOA stated its vision is "to ensure that the Orang Asli community achieves a level of socio-economic well-being at par with those of other communities in this country, and imbued with ethical values while at the same time maintaining their identity". It is argued however, that this ideology would invariably allow the state to appropriate and control the land and other resources of the Orang Asli purportedly for public interests. Eventually, this apparently noble goal of integration could lead to the demise of, not only the economic and ecological spaces of the Orang Asli, but also the cultural and spiritual fabric of their society (Nicholas, 2000).

SOCIO-ECONOMIC STATUS

The socio-economic status of the Orang Asli is addressed here with respect to poverty, education attainment, employment status, housing, and basic amenities (lighting, toilet facility, water supply). Such information serves as a benchmark to gauge the progress of development on the livelihood and living conditions of the Orang Asli.

Poverty

The various five-year Malaysia development plans have identified the Orang Asli as one of the most impoverished groups in the country. The incidence of poverty and hardcore poverty is higher among the Orang Asli than that of the Malaysian population. In 1999, while the national figures for poverty and hardcore poverty were 7.5% and 1.4% respectively, 50.9% and 15.4% of the Orang Asli were identified as poor and hardcore poor respectively (Malaysia 2001). In the 9th Malaysian Plan (Malaysia, 2006), various strategies and programs have been planned to increase the income and improve the quality of life of the Orang Asli. Economic projects that will benefit the Orang Asli as well as resettlement and development of human capital will be implemented to address the high incidence of poverty and hardcore poverty among the Orang Asli.

Education

Until the past decade or so, the majority of Orang Asli children did not attend school. For those living in the forest interior, there were

schools in sporadic locations that provided primary 1-3 levels, but the condition of the resources was often deplorable. Orang Asli children living outside the forest were expected to attend national schools, with some providing boarding facility. However, only a small percentage of Orang Asli children attended or completed primary schooling. The reasons are varied principally grounded in economic and cultural context, including "too poor", "children are needed to help parents", "parents unwilling to leave young children in outside schools", "children do not like the school", and "high failure rates" (Khor, 1985).

Gradually, the education attainment of the Orang Asli has improved with a reduction of the percent with no schooling from 66% in 1980 to 39% in 2000 for both sexes (Table 4). The percentages of Orang Asli who completed primary, secondary and tertiary education levels have increased gradually throughout the years. Although the reduction is equally noteworthy for both sexes, more females (43.2%) than males (35.3%) have no formal schooling, and this sex differential in education attainment persists throughout primary schooling. However, there was no marked difference between both sexes in secondary and tertiary educational attainment.

Table 4: Percentage distribution of Orang Asli population aged 6 years and above according to educational attainment and sex, 1991 and 2000.

Educational attainment	*Total*		*Male*		*Female*	
	1991	*2000*	*1991*	*2000*	*1991*	*2000*
No schooling	51.4	39.2	46.3	35.3	56.6	43.2
Primary	37.8	44.5	41.7	47.6	33.8	41.3
Lower secondary	7.8	11.3	8.7	12.2	6.8	4.3
Upper secondary	2.4	4.2	2.6	4.1	2.1	4.3
Tertiary	0.6	0.8	0.7	0.8	0.6	0.9

Source: Department of Statistics Malaysia (1997, 2006)

There is a wide gap in educational attainment between Orang Asli in urban and rural areas (Department of Statistics, 1997). While 24% of Orang Asli in urban areas had no schooling, more than half (54%) of rural Orang Asli population did not attend school. About 41%, 20%, 10% and 5% of urban Orang Asli had primary, lower and upper secondary and tertiary education, respectively. Although 38% of Orang Asli in rural areas had primary schooling, lower percentages completed lower (6.6%) and upper (1.6%) secondary and tertiary (0.2%) education. Living in the urban or town areas may have brought about the awareness on the importance of education to obtain better employment opportunities.

Despite the overall improvement in educational attainment, high drop-out rates especially at the secondary level still remain a major concern. For example, in 1980, about 45% of the Orang Asli population aged 6-9 years were attending school. This cohort would fall in the 15-19 age group in 1991. Only about 12% of this age group was attending school in that year. More than half (55%) of the children eligible for primary schooling failed to enroll, and out of those who completed primary education, a high proportion of the children did not enroll for secondary schooling or did not complete secondary education. In comparison, the drop-rate for primary school level in the general population during 1990-1995 was 4% (Malaysia, 1996).

The high drop-out rate is most likely linked to the high failure rates of the Orang Asli in the public examinations. Only 13% out of about 2000 candidates in 1998 passed the Primary 6 examination, while 28% of the 580 students passed the Secondary 3 examination in the same year (Department of Orang Asli Affairs, 1999). The appalling academic performance of the Orang Asli children underscores the critical need for more concerted development efforts towards ensuring that all Orang Asli children have access to schooling, and be able to make use of school facilities (e.g. library, computers). Tuition or special remedial classes may be necessary to help them bridge the gap towards reducing the drop-out rates among Orang Asli children.

Employment

The majority of male and female Orang Asli workers are engaged in agriculture, forestry, fishing and related occupations as shown by the 1991 census. Approximately 75-96% of the total employed is involved in this category, varying with age and gender. A high proportion of them are employed as workers in rubber and oil palm plantations. Some 7-15% of Orang Asli aged 10-44 years of both sexes are employed in production (e.g. factory assemblers), as transport equipment operators and labourers. The percentage of Orang Asli workers employed in the professional and technical category is very

small with female workers aged 25-44 years showing the highest level (2.7%). It is patent that most of the Orang Asli workers are engaged mainly in jobs that require physical labour and manual skills.

Frequently, engagement in agricultural-based economic activities is manifested as own worker or family worker without wage. There was a significant increase in the percentage of own worker from 56.7% in 1980 to 65.7% in 1990, followed by a decrease to 56.9% in 2000. For family worker without wage, a dramatic decline was observed from 1980 (22.9%) to 1991 (6.6%) and a slight decrease in 2000 (5.8%). In males, there is a gradual increase in the percentage of employed workers from 22.6% to 33.4% during the period of 1980 to 2000. However, a more dramatic increase in female employment was observed during the same period, which reflected increasing participations of women in non-agricultural economic activities (Table 5).

Table 5: Percentage distribution of Orang Asli aged 10 years and above by employment status, 1991 and 2000.

Employment	*Total*		*Men*		*Women*	
	1991	*2000*	*1991*	*2000*	*1991*	*2000*
Employer	0.6	0.5	0.5	0.5	0.7	0.6
Employee	27.1	36.8	27.6	33.4	26.0	47.3
Self-employed	65.7	56.9	68.7	62.5	57.5	39.8
Unpaid family worker	6.6	5.8	3.2	3.6	15.8	12.3

Source: Department of Statistics Malaysia (1997, 2006)

A startling point about the labour force participation rates of the Orang Asli is the involvement of the young age groups. In 1991, 17.6% of the male and 13.6% of the female aged 10-14 years were in the labour force (Department of Statistics, 1997). The percent increased to 74.1% and 43.5% for male and female respectively in the 15-19 age group. Although the rate has decreased from 25.5% in 1980 for both sexes to 15.7% in 1991 for the 10-14 age group, the level is considerably higher than that for the general population in Peninsular Malaysia (2.4% in 1991). The participation rate for the age group of 15-19 years stayed at about 58% in 1980 and 1991. In a way, the employment status and labour force participation of young Orang Asli reflect their low level of education attainment highlighted above.

Housing and Basic Amenities

The government efforts to relocate Orang Asli into planned settlement scheme has seen increasing provision of basic infrastructure (housing units, roads, electricity, piped water supply), schools, child care centers and community centers. With regards to housing type, a majority (82%) of Orang Asli housing units surveyed in 2000 is of 'detached' houses. This is the typical traditional type of dwellings for the Orang Asli especially in the remote and rural locations with "nipah" palm thatched roof, bamboo planks for the floor, and thatched palm or wooden planks for the wall. This type of housing unit as well as makeshift hut is being replaced increasingly by housing units with zinc sheets for the roof and wooden planks for the wall and floor. In small towns and urban areas, Orang Asli occupy terrace or row houses and flats or apartments.

As many of the Orang Asli settlements are located in remote and rural areas, it is a challenging task to provide basic amenities such as piped water supply, electricity, toilet facility and garbage disposal service to these settlements. While electricity is provided to about 53% of the 28127 Orang Asli housing units surveyed in 2000, almost half of the housing units (47%), especially those located in the remote or interior areas of Peninsular Malaysia used oil lamps and other types of lamps (Table 6). In several rural areas, the Orang Asli housing units had their own generators or the generators were provided by JHEOA. Although there is an overall improvement in toilet facility in the last decade, 36% of the housing units still did not have proper toilet facility. Pour and flush toilets are available in about 58% of the housing units, an increment of

Table 6: Percentage distribution of Orang Asli housing units according to type of basic amenities, 1991 and 2000.

Basic amenity	*1991*	*2000*
Lighting		
Electricity	36.2	53.3
Others (e.g. kerosene lamp)	63.8	46.7
Water Supply		
Piped water	46.4	44.5
Others (e.g. river, well, rain)	53.6	55.5
Toilet		
Flush	13.4	18.4
Pour	31.4	39.2
Pit	5.7	3.7
Enclosed space over water	2.9	2.7
None	46.6	36.0
Total housing units surveyed	20,841	28,127

Source: Department of Statistics Malaysia (1997, 2006)

about 13 percentage points since 1991. As for water supply, treated piped water is available to less than half (44.5%) of the Orang Asli housing units in 2000 (Table 6). The housing units either get piped water inside the house or shared piped water outside the house. Other sources of water supply for drinking, cooking and washing include rivers, rain and deep wells. Only 12% of the housing units, mostly in the urban areas, are provided with garbage disposal service while a majority (81%) still use traditional disposal methods such as ground disposal and open burning.

HEALTH AND NUTRITIONAL STATUS OF WOMEN AND CHILDREN

Since the colonial era, many surveys and studies have been conducted on the medical and health aspects of the Orang Asli. Evidences of poor health and nutritional status of Orang Asli population have been documented over the decades (Baer, 1999). Health statistics succinctly showed that the Orang Asli is worse off than the general population. For example, in the 1980s, the median crude mortality rate and the infant mortality rate of the Orang Asli were respectively doubled and tripled that of the national population (Department of Statistics, 1997).

Satisfactory health and nutrition in women is a resource for adequate provision of care to their children. Women with poor health status may not able to adequately perform child care-giving behaviors. Consequently, these compromised care behaviors could adversely affect energy and nutrient intakes, health and cognitive as well as psychosocial development of children. In addition, as child health and nutrition starts even before conception, it is essential to consider the health of women prior to child health.

Poor Maternal Health

A high proportion in the Orang Asli community subsists on a level that is below the government's poverty line income[1]. For example, various studies have found that more than one third of Orang Asli surveyed were living in poverty or experiencing household food insecurity (Lim and Chee, 1998; Cheah, 1999; Zalilah and Tham, 2002). In poverty households, the mean energy intake of Orang Asli is often below the recommended energy and nutrient levels. Lim and Chee (1998) reported that the intake of energy and most nutrients of non-pregnant, pregnant and lactating Orang asli women were not satisfactory. Since these recommended levels were formulated for people living a sedentary lifestyle, and considering that Orang Asli women generally are involved in moderate to high levels of physical activity, therefore their low daily energy intake is seriously far below the level required for healthful maintenance of their active lifestyles. The long-term insufficient intake of energy and nutrients coupled with physically active lifestyle could explain the high prevalence of chronic energy deficiency in Orang Asli women (Osman and Zaleha, 1995; Lim and Chee, 1998). This condition could further undermine the women's health as well as reproductive and productive capabilities.

Pregnancy normally increases the maternal demand for energy and nutrients in support of growth and development for the unborn child. In the case of Orang Asli, studies have shown that the food intake of pregnant women are inadequate in providing energy, protein, calcium, iron and B vitamins to meet the needs of both mother and child (Lim and Chee, 1998; Cheah, 1999). Osman and Zaleha (1995) found over 95% of Semai women breastfed their infants for an average of 17.9 months, while Khor (1985) found the mean breastfeeding duration for 189 Semai women was 23 months. High parity, close spacing of pregnancy and prolonged breastfeeding can adversely affect the health status of the Orang Asli women.

The relatively higher rate of mortality among the female Orang Asli, especially from the age of 35 years onwards is illustrated by the distribution of sex ratio among Orang Asli (Table 7). In 1991, after the age of 35 years, the sex ratio for Orang Asli showed a much higher proportion of males. Between 35-44 years, the sex ratio was 108.6 for Orang Asli compared with 100.8 for the general population, and the differential widens between 45-54 years whereby the sex ratio for the two populations were 120.1 and 103.6 respectively. This trend in favour of the males continues into the older age groups that normally show a low sex ratio due to the higher life expectancy for females. However, for the Orang Asli, the opposite prevails whereby the sex ratio of 143.7 indicates a higher mortality levels for females (compared with 85 for the general population for the same age group). This pattern was shown in the 1980 Census when the sex ratio for the older persons

was even higher at 165.3. Unfortunately sex ratio data according to age groups is not available in the more recent census. In 2000, the overall sex ratio was 102.1 compared to 103.7 in 1990, 107.0 in 1980 and 108.9 in 1970. These data indicate an overall gradual declining trend in the proportion of males to females.

Table 7: Sex ratio among Orang Asli (male per 100 female)

Age group	*Orang Asli*		*Peninsular Malaysia*
	1980	*1991*	*1991*
0-14	104.9	103.6	105.2
15-24	96.5	95.4	98.9
25-34	102.0	97.8	96.9
35-44	116.6	108.6	100.8
45-54	121.3	120.1	103.6
55-64	138.3	120.0	94.9
65 and above	165.3	143.7	85.0

Source: Department of Statistics Malaysia (1997)

The higher sex ratio in the age groups of 15-54 years is likely to be associated with the relatively high maternal mortality rates among the Orang Asli. It was reported in a major English newspaper that there were 42 death cases arising from Malaysian women giving birth at home in 1994 (Sunday Star, 29th September, 1996). Out of these, 60% involved Orang Asli women. "Given that the Orang Asli community is only 0.5% of the national population, this means that an Orang Asli mother in 1994 was 119 times more likely to die in childbirth than a Malaysian mother" (Nicholas, 2000).

Pregnancy without adequate health and nutritional care in women already suffering from protein-energy malnutrition and anaemia can lead to poor pregnancy outcome for the mother and child. Anaemia is a common health problem amongst Malaysians from all ethnic groups including the Orang Asli and affects young children, females and the elderly in particular. A high prevalence of anaemia by haemoglobin level determination is often reported in Orang Asli women involving up to two-thirds of pregnant women. In a survey of Semelai women, Cheah (1999) found that 72% the pregnant women were anaemic, and less than half of these anaemic women were taking iron or folic acid supplements. Iron deficiency anaemia in pregnancy poses a major threat to safe motherhood and contributes to low birth weight in infants.

Besides anemia, another nutrition problem endemic among Orang Asli women is iodine deficiency disorders or IDD, especially among those residing in remote and interior areas of Peninsular Malaysia. Goitre is one indicator of IDD and serious consequences arising from IDD include neurological damage to the fetus resulting in miscarriage, stillbirth or a living child with deafness, cretinism, mutism or mental retardation. Since Polunin's survey (1951) that reported 41% of inland Orang Asli were goiterous, many reports have emerged on the existence of high levels of IDD in Orang Asli. The prevalence of palpable goitre has been found to range from half to almost all of the Orang Asli women studied. Similarly, a high prevalence of goiter was reported in Orang Asli children at all ages and of both sexes (Osman et al., 1993)

While IDD is attributable to inadequate consumption of seafood, the more likely causes for IDD in the Orang Asli community are the frequent consumption of cassava root and shoots and high dependence on sources of drinking water (e.g. river) that are low in iodine levels. Cassava has an anti-thyroid action that inhibits the uptake of iodine by the thyroid gland causing levels of thyroid hormones to be lowered. IDD however is easily and inexpensively preventable by the use of iodized salt or iodized drinking water, as it has been carried out quite successfully in IDD endemic areas world-wide.

Table 8 shows the high prevalence of anaemia and iodine deficiency disorders among Orang

Table 8: Prevalence of anaemia and iodine deficiency disorders among

Orang Asli	*N*	*% anemia*	*References*
Temiar	305	33	Khoo, 1977
Semai non-pregnant	105	40	Khor, 1985
pregnant	21	64	
Semelai	35	37	Cheah, 1999
		% iodine deficiency disorders	
Lanoh	163	54	Polunin, 1951
Semai	361	84	
Temuan	108	77	
Semai	616	64	Osman & Zaleha, 1995
Semai	507	51	Zaleha et al., 1998
Not mentioned	41	32	Cuthbertson et al., 2000

[1] Poverty income line (PLI) was RM460 for a household size of 4.6 in 1997

Asli women. The poor health and nutritional conditions of the women has been documented since the earliest medical records prior to 1950.

While chronic energy deficiency is still prevalent among the Orang Asli women, there are evidences to indicate that overweight and obesity is a rising nutritional concern in this population. Lim and Chee (1998) reported that 21% of Orang Asli women were overweight and obese. A recent survey of 149 Orang Asli women from 14 peri-urban villages found that almost half of the women were overweight (29%) and obese (21%). In addition, about 14% had at risk waist circumference (> 88 cm) (Wendy, 2004). The high prevalence of overweight and obesity may further put these Orang Asli women at risk of many health and nutritional problems.

Malnutrition in Children

Childhood malnutrition in Orang Asli has persisted over the decades at levels that are more serious than those reported for the other rural communities in Malaysia. The prevalence of underweight and stunting in Orang Asli young children are often found in one-third to three quarters of the population groups studied (Table 9). Such high levels of malnutrition are encountered not only in the less accessible locations but also in communities situated near to towns. Nutrition surveys by Mona Zaria (1998) and Mohd Faizal (1999) among the Semelai found that 27-33% and 42-55% of the boys and girls respectively to be underweight. Likewise, high percentages of underweight (45.3%) and stunting (51.6%) were found among Temuan children aged 3-6 years (Zalilah and Tham, 2002). This study also reported that more than half of the children of both sexes had intakes of energy, calcium and iron that were below two-thirds of the recommended levels. A recent study on growth status of 368 Orang Asli children (ethnicity unknown) found high prevalence (30-60%) of underweight, stunting and wasting in 2-15 year-old boys and girls, with higher percentages of malnutrition in younger age groups (Hesham et al., 2005). Shashikala et al. (2005) reported even higher percentages (86% underweight, 79% stunting and 53% wasting) of 1-3 year old Temuan and Mahmeri children with growth retardation. In general, the poor nutritional status of Orang Asli children can be attributed to various factors such as poverty, poor diet quality, inappropriate cultural beliefs, lack nutrition knowledge, poor hygiene practices, and high helminthic infestations.

Intestinal parasitic infections, especially soil-transmitted helminthes can compromise the growth and development of children (Simeon et al., 1995; Watkins and Pollit, 1996). Helminthic infestation is widespread in Orang Asli children and to a lesser extent among the adults (Polunin, 1953; Dunn, 1972; Mohamed Kamel et al., 1994). The latter study identified amoebiasis, cryptosporidiosis, giardia and intestinal worms in 82% of the Temuan community. Osman and Zaleha (1995) found Ascaris (21%), Trichuris (24%) and hookworm (5%) in Semai children aged 2-6 years. In a study among 2-15 year olds, the overall prevalence of ascariasis, trichuriasis and hookworm infection were 62%, 98% and 37% respectively and of these 18.9%, 23.5% and 2.5% experienced severe infection of the respective helminthes (Hesham et al., 2005). In this sample of Orang Asli children, intestinal parasitic infections were found to be significant predictors of malnutrition, particularly stunting and wasting. Severe worm infestation could also lead to hypochromic anaemia and this was identified in Temiar children below 12 years in Post Brooke, Kelantan (Tengku Ariff, 1997).

Malnutrition is often associated with iron deficiency due to low intake of heme iron from animal food sources. As such, malnourished

Table 9: Prevalence (%) of underweight and stunting among Orang Asli children

Sub-group	*N*	*Underweight %*	*Stunted %*	*Reference*
Semai				
Boys	234	53	73	Khor, 1985
Girls	201	49	63	
Semai				
Boys	243	65	71	Sham, 1987
Girls	256	52	62	
Semai	111	30	45	Ismail,1988
Semai	343	62		
Osman,1995				
Temuan				
Boys	42	45	50	Zalilah &
Girls	22	46	55	Tham, 2002
Temuan and Mahmeri				
Boys	51	78	82	Shashikala
Girls	41	95	76	et al., 2005
Boys	178	53	50	Hesham
Girls	190	47	50	et al., 2005

Source: WHO (1995) - Underweight: weight-for-age < -2SD NCHS/WHO median
Stunted: height-for-age < -2 SD NCHS/WHO median

subjects tend to be anaemic too. This condition is further aggravated by high helminthic infestations, malaria and other blood-destroying infections. The concern for anaemia in childhood is that it can lead to retardation in physical growth and cognitive development, and lowered resistance to infections. Among the Orang Asli children, iron deficiency anaemia indicated by hypochromic and microcytic red blood cells was found in 50% of 76 Temiar children aged 0-12 years (Tengku Ariff, 1997).

CONCLUDING REMARKS

The Department of Orang Asli Affairs (JHEOA) has drawn up an elaborate framework of objectives and strategies towards achieving its vision of raising the socio-economic status of the Orang Asli to be at par with that of the general population. For example, the JHEOA aims to reduce poverty among Orang Asli in rural and the interior through resettling them, expediting land ownership and increasing income through cash-cropping and commercial activities. The issue of land tenure is of paramount importance in any decisions on the development and economic advancement of the Orang Asli. Past experiences have rightfully instilled a sense of insecu-rity among the Orang Asli with regards to their lands and other resources. There have been several cases of their ancestral lands being alienated for projects that usually do not bring about direct benefits to them. On the contrary, these activities have led to detrimental consequences including depletion of food resources and environmental destruction, all of which, in turn results in poorer health status of the Orang Asli. The earliest documentation to this effect was in the case of the Temenggor Dam that was built in northern Perak in the early 1970s. Some 305 Temiar families were resettled to Fort Kemar. After one year of moving out, it was found that their dietary habits and nutritional status had deteriorated substantially (Khoo, 1977). Similar findings of inadequate food intake and poor health status of resettled Orang Asli groups have been reported (Khor, 1994). Thus, resettlement of Orang Asli may not necessarily lead to improvement in socio-economic status, and instead may have adverse effects on nutrition and health.

The JHEOA's objective of improving the quality of life of the Orang Asli are tied to the provision of physical support such as roads, electricity, water supply, houses, social and recreational facilities. Undoubtedly, the provision and maintenance of such basic services and amenities should be in place in all human habitats, as people have the right to a standard of living adequate for the health and well-being of himself and his family.

Serious attention should also be accorded to the poor schooling performance of the Orang Asli children. The Orang Asli children should therefore have access to proper schools with trained teachers and adequate teaching equipment and facilities. Without substantially increasing the number of Orang Asli children enrolled in primary schools and progressing into upper secondary schools, the prospect of socio-economic advancement of the Orang Asli appears bleak. They will remain trapped in the vicious socio-ecological cycle of low education and skills, poverty, poor diet and health. It is hoped that, with the change of the management of the schools from the JHEOA to the Ministry of Education, the low educational attainment of the Orang Asli children will be a thing of the past.

Equally important is the provision of affordable essential health services for the Orang Asli especially those residing in rural areas and the forest interior. In the context of improving health care, maternal health of the Orang Asli should be accorded high priority. Concerted efforts should be directed at understanding and addressing the determinants for the high maternal mortality rate among Orang Asli. Child malnutrition including protein energy malnutrition, micronutrient deficiency, intestinal parasitic infestations and skin problems should also be given its due place of importance.

Besides the major health and nutritional problems highlighted above, the Orang Asli community is also exposed to a myriad of diseases especially infectious and parasitic diseases. These diseases including tuberculosis, malaria, leprosy, filariasis, schistosomiasis, upper respiratory infections and skin problems, constitute nearly half of the admissions in the JHEOA Hospital in Gombak.

Health promotion, preventive and treatment measures aimed at the Orang Asli should be appropriate taking into consideration biological, cultural and social sensitivities. Understanding their health and nutritional needs as well as cultural practices and preferences could facilitate the development of intervention efforts that will

be accepted and adopted by the Orang Asli population.

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KEYWORDS Orang Asli; socio-economic status; nutritional status of women and children

ABSTRACT Orang Asli (translated as "original peoples") are the indigenous inhabitants of Peninsular Malaysia. They constitute a minority group making up approximately 0.6% of the total population of Malaysia. A high proportion in the Orang Asli community subsists on a level that is below the government's poverty line income. Despite progress in economic development and continuous efforts by the government, the health of Orang Asli continues to lag behind that of the general population. These health differentials are particularly pronounced among the nutritionally vulnerable groups such as women and children. The mean energy intake of Orang Asli is often below the recommended energy and nutrient levels. The long-term insufficient intake of energy and nutrients coupled with physically active lifestyle could explain the high prevalence of chronic energy deficiency in Orang Asli women. This condition could further undermine the women's health as well as reproductive and productive capabilities. Besides chronic energy deficiency, recent studies also showed that overweight and obesity has emerged among the Orang Asli women. Prevalence of anaemia and iodine deficiency disorders is also high among the women. Underweight and stunting in young children are often found in one-third to three quarters of the population groups studied. While efforts to improve the health and nutritional status of the Orang Asli community deserve serious attention, equally high priority should be accorded to the poor schooling performance of the Orang Asli children. Without substantially increasing the number of Orang Asli children enrolled in primary and secondary schools, the prospect of socio-economic advancement of the Orang Asli appears bleak. They will remain trapped in the vicious socio-ecological cycle of low education and skills, poverty, poor nutrition and health.

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