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Nutritional Status of Children of Various Orang Asli Communities in Peninsular Malaysia*

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ABSTRACT

An anthropometric study of 566 Orang Asli children aged 10 years and less was conducted in 28 villages in 7 separate areas in Peninsular Malaysia. Using the National Council for Health Statistics (NCHS) reference as a standard, it was found that 56% of these children were underweight and 65.7% were stunted. Using the reference mid-upper arm circumference values of Wolanski, it was found that 41.8% had low mid-arm circumference. The data in each of the areas visited varied.

ABSTRAK

Suatu kajian anthropometrik yang melibatkan seramai 566 kanak-kanak Orang Asli yang berumur 10 tahun dan kurang telah dijalankan di 28 kampung di 7 kawasan yang berlainan di Semenanjung Malaysia. Dengan menggunakan statistik National Council for Health *sebagai piawai, kajian mendapati bahawa 50% kanak-kanak itu kekurangan berat badan dan 65.7% terbantut. Menggunakan pula lilitan lengan yang telah ditentukan oleh Wolanski, didapati pula 41.8% mempunyai lilitan yang lebih kecil. Data untuk satu-satu kawasan yang dilawatinya berbeza-beza.*

INTRODUCTION

Few studies have documented the health status of the aboriginal (Orang Asli) children in the various parts of Peninsular Malaysia. Khor G.L. (1985) showed that the nutritional status of the children of the Semais (n = 1535) in the state of Perak is very unsatisfactory. Her findings were worse than those found by Chong et al. in 14 poverty Malay villages in Peninsular Malaysia.

It has also been the experience of Medical and Health workers that many Orang Asli children are admitted to the wards with a variety of health

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problems associated with severe nutritional problems. Anthropometric studies to verify the nutritional status of those children were carried out by the mobile health team clinics of the department for the welfare of the Orang Asli. This paper presents the results of the study.

METHOD

A total of 28 aboriginal villages in 7 separate areas in Peninsular Malaysia were chosen for this study. These areas were chosen because the mobile health teams and the Aboriginal Flying Doctor Service (AFDS) of the Department of Orang Asli were programmed to visit them from the months of February to August, 1986. The areas are made up of the villages:

1. In the district of Cameron Highlands – accessible by 4-wheel drive vehicle.
2. Around Post Jernang, Sungkai, Perak – accessible by 4-wheel drive vehicle.
3. In the DARA project in South-East Pahang – accessible by road.
4. In Western Pahang – reachable by helicopter.
5. In the Land Development Scheme in Betau, Pahang which is a resettlement area for the Orang Asli.
6. In interior Kelantan – a smattering of 3 villages – accessible only by helicopter.
7. In Sungai Temuan, South Johore reachable by boat.

The selection of these areas provided a sufficient variety of environment and tribes so that a better interpretation of the results could be made as to the overall health and nutritional problems faced by the Orang Asli children.

Only children aged 0-10 years were considered for this study, as pubertal changes would cause problems of interpretation in the older children. Ages of the children were obtained from the parents or from their birth certificates. Where neither was available, estimates of the age were made by the senior author.

Body weights were measured by means of an infant beam balance up to weights of 15 kg. Even though these were cumbersome to carry into the deep jungles, they were difinitely more reliable. For children weighing more than 15 kg a portable bathroom spring balance (Seca), recording to the nearest 0.5 kg was used. For children less than 2 years old, length of the body was taken with the child lying flat in the supine position. Height for those more than 2 years was measured using a tape fixed to the wall and recorded to the nearest 0.5 cm. Techniques of measurement were based on WHO 1988 guidelines. The left mid upper arm circumference was measured to the nearest 0.1 cm, using unstretchable measuring tape.

The data obtained for body weight and length/height were then compared to the NCHS Standards (1976). Values of left mid-arm circumference were compared to the reference values of Wolanski modified by Burgess and Burgess (1969). It should be pointed out that the mobile clinics were held in the most unusual places such as classrooms, sheds in jungle clearing close to helicopter landing pads or even in private homes. However, careful attention to the above measurement were made.

RESULT

A total of 566 children below the age of 10 years were included in this study. Two hundred and seventy six were boys and 290 girls. Three hundred seventy out of 566 (56%) of the Orang Asli children are underweight as defined by 2 standard derivations (SD) below the mean of the NCHS reference (Table 1). One hundred and twenty four (21.9%) were severely underweight (i.e. less than - 3SD). These results were quite different from those among the Malays. Thirty seven per cent of children in Malay poventy villages were underweight as reported by Chong et al, 1984. For children less than 6 months, only 7 out of 57 (12.3%) were underweight compared to the older children.

Of the 566 children whose length/height were measured (Table 2), 372 (65.7%) were stunted as defined by < 2 SD below the mean NCHS reference

TABLE 1. Weight of 566 Orang Asli children against age

Age (months)	Weight						Underweight Children (%)	
	> -2SD		< -2 to -3SD		< -3SD			
	M	F	M	F	M	F	M	F
6	23	27	3	2	1	1	14.8	10
6 < 12	8	15	7	9	6	2	61.9	42.3
12 < 24	3	17	19	13	10	7	87.9	52.9
24 < 48	17	19	12	20	18	23	62.5	68.2
48 < 72	16	20	25	15	16	10	70.7	54.3
72 < 96	15	23	18	19	9	6	62.8	64.1
96 < 120	23	33	20	11	2	3	47.8	29.2
Sub-Total	105	144	104	89	62	52	61.5	48.8
Total	249		193		124		56%	

standard. In contrast, 43% of Malay children in the Malay poverty villages were stunted. (Chong et al. 1984).

TABLE 2. Height/length of Orang Asli children against age (n = 566)

Age (months)	Weight/Length						Stunted Children (%)	
	> -2SD		< -2 to -3SD		< -3SD			
	M	F	M	F	M	F	M	F
0 < 6	18	20	3	5	1	4	18.2	31.0
6 < 12	9	15	3	4	12	8	62.5	44.4
12 < 24	10	12	4	13	18	13	68.8	68.4
24 < 48	12	17	9	19	25	28	73.9	73
48 < 72	19	9	17	15	26	25	68.9	81.6
72 < 96	10	11	11	10	25	21	78.3	73.8
96 < 120	19	13	15	17	16	5	62	62.9
Sub-Total	97	97	62	83	123	104	65.6	65.8
Total	194		145		227		65.7%	

TABLE 3. Values of midarm circumference

Age (months)	Left Mid-arm				Low Mid-arm Circumference (%)	
	> 85%		< 85%			
	M	F	M	F	M	F
0 < 6	23	21	4	8	14.8	27.5
6 < 12	13	15	8	11	38.1	42.3
12 < 48	15	14	18	21	54.5	60.0
24 < 48	25	35	21	27	45.6	43.5
48 < 72	27	28	25	12	48.1	30
Sub-Total	103	113	76	79		
Total	216		155		41.8%	

Table 3 shows the values of the mid-arm circumference. Less than 85% of the standard reference values of Wolanski (modified by Burgess and Burgess) coresponding roughly to - 2SD below the mean was taken as low mid arm circumference. Only 22% of poor rural Malays had low mid-arm circumference (Chong *et al.*).

According to anthropometric data of the various areas visited (Table 4), Cameron Highlands and interior Kelantan are the best in terms of nutritional status. The other areas have a very high level of malnutrition.

It is noteworthy that the children at the resettlement scheme at Betau have all worst nutritional status.

TABLE 4. Anthropometric data of various areas

	Underweight		Stunted		Low Mid-arm Circumference	
	Number	%	Number	%	Number	%
Interior Kelantan	10/37	27%	11/37	29.7%	4/26	15.4%
Cameron Highlands	31/94	26%	47/94	50%	9/63	14.2%
Post Jernang Perak	32/58	55%	34/58	58%	24/51	47%
DARA S.E. Pahang	64/99	64.6%	69/99	69.7%	27/70	39%
AFDS Pahang	122/89	64.5%	150/189	79.3%	59/94	62.7%
RPS Betau	38/59	64.4%	41/59	69.5%	35/55	63.6%
Sg. Temuan Johore	8/30	26.7%	20/30	66.7%	4/23	17.4%

CONCLUSION

From this study, it can be concluded that the prevalence of severe malnutrition is very high among the aborigines of Peninsular Malaysia, much higher than children in the poor Malay villages described by Chong *et al.* The better nutritional status of children less than 6 months of age is probably due to the predominance of breast feeding. However, more and more mothers are turning to sweetened condensed milk for their babies as early as the first month. This practice stems from ignorance regarding breast feeding and financial constraints which restrict their ability to buy infant formulae. This problem is especially rampant in communities situated in the peripheries of towns.

Aboriginal children become severely underweight immediately beyond 6 months. This is probably due to low calorie/low protein diet consisting mainly of tapioca. A number of food taboos will have to be overcome before any change in the dietary habits of the Orang Asli can be instituted effectively.

Certain areas, if studied singly and separately, may give a false impression of the real situation amongst the Orang Asli eg. the highland areas of Cameron Highlands and interior Kelantan. The better figures for Cameron Highlands may be due to the lower incidence of chronic infections like malaria.

Resettlement of the Orang Asli has not improved the nutritional status of their children as seen in the resettlement area of Betau. It may even have contributed to a deterioration in their health and nutritional status.

This study has shown the high prevalence of malnutrition among the Orang Asli of Peninsular Malaysia. There is need to coordinate the various units in the Department of Orang Asli so that there are greater interactions and exchange of information for the betterment of the aborigines as the health of the community stems from the preventive aspects of health and nutrition rather than the curative aspects.

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REFERENCES

Burgess H.J.L. & Burgess A.P. 1969. The arm circumference as a public index of calorie malnutrition of early childhood. *Journal of Trop. Pediat.* **15**: 189–92.

Chong, Y.H. *et al.* 1984. State of community nutrition in poverty kampungs. *Institute for Medical Research Malaysia Bulletin*, No. 22.

Khor, G.L. 1985. A Study on the nutritional status of the Semai. Ph.D. Thesis, University Pertanian Malaysia.

United States Public Health Service, Health Resources Administration. 1976. *NCHS Growth Charts.*

World Health Organisation. 1983. Methods of taking measurements. In *Measuring Change in Nutritional Status*, 12–13.

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