



UNIVERSITI PUTRA MALAYSIA

***CARE-GIVING BEHAVIORS AND OTHER FACTORS AFFECTING THE
NUTRITIONAL STATUS OF ORANG ASLI CHILDREN IN SELANGOR,
MALAYSIA***

SHASHIKALA SIVAPATHY

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MALAYSIA**

By

SHASHIKALA SIVAPATHY

**Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia,
in Fulfilment of the Requirements for the Degree of Master of Science**

August 2007

Abstract of thesis presented to the Senate of Universiti Putra Malaysia in
fulfilment of the requirement for the degree of Master of Science

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Chairman : Associate Professor Mirnalini Kandiah, PhD

Faculty : Medicine and Health Sciences

The purpose of this study is to determine the relationship between caregiving behaviors and other factors which affect nutritional status of Temuan and Mahmeri Orang Asli children aged 1-3 and 4-6 years old in Sepang and Kuala Langat districts.

This cross-sectional study was carried out among children aged 1-6 years old in Orang Asli villages in Sepang and Carey Island, Selangor. There were 173 children between the ages of 1 and six years, of these 92 children were from the age group of 1-3 years and 81 children were in the age group of 4-6 years. The care behaviours which were studied were feeding behaviours, hygiene behaviours and parental control on child feeding. Caregiving behaviour was assessed by questionnaire and qualitative method.

This study revealed high prevalence of malnutrition in Orang Asli children and supports the evidence in the literature. Prevalence of significantly underweight, stunted and wasting were 53.3%, 55.4% and 8.7% respectively among children 1-3 years old whereas prevalence of significantly underweight, stunted and wasting among children 4-6 years old were 38.3%, 51.9% and 6.2% respectively.

Caregiving behaviours that was associated positively with nutritional status of 1-3 years old was affectionate gestures. Behaviours that were associated negatively were shared plate and activities during feeding. Among children 4-6 years old, caregiving behaviours that were associated positively were food not prepared specifically for the child and food refusal while monitoring, negative social behaviours, and affectionate gestures were associated negatively with the nutritional status.

As a conclusion, this study has shown, that there were some caregiving behaviours which have positive influence on the nutritional status of child and others which was not associated with the nutritional status of the child. Different caregiving behaviours influences differently among younger and older children. With regards to hygiene behaviours, it was not found to influence nutritional status of both age groups.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Master Sains

**PERILAKU PENJAGAAN DAN FAKTOR-FAKTOR LAIN SEBAGAI
PENENTU STATUS PEMAKANAN KANAK-KANAK ORANG ASLI DI
SELANGOR, MALAYSIA**

Oleh

SHASHIKALA SIVAPATHY

Januari 2006

Pengerusi : Profesor Madya Mirnalini Kandiah, PhD

Fakulti : Perubatan dan Sains Kesihatan

Tujuan kajian ini adalah untuk mengenalpasti hubungan di antara sikap mengambil berat serta faktor-faktor lain dengan status pemakanan kanak-kanak Orang Asli Temuan dan Mahmeri yang berumur di antara 1-6 tahun di daerah Sepang dan Kuala Langat.

Kajian ini telah dilaksanakan ke atas kanak-kanak yang berumur 1-6 tahun di Kampung-kampung Orang Asli di daerah Sepang dan Pulau Carey. Seramai 173 kanak-kanak yang berumur di antara 1-6 tahun telah dipilih, di mana seramai 92 orang kanak-kanak berada di antara umur 1-3 tahun dan 81 orang kanak-kanak di antara umur 4-6 tahun. Sikap mengambil berat yang telah dikaji adalah amalan pemakanan, amalan penjagaan kebersihan dan pengawalan pengambilan makanan oleh ibu bapa. Sikap mengambil berat ini telah dinilai berpandukan borang soal selidik dan kaedah kualitatif.

Kajian ini mendapati prevalen malnutrisi di kalangan kanak-kanak Orang Asli adalah tinggi seperti yang disokong oleh sorotan literature. Prevalen kebantutan, kurang berat badan dan susut berat badan adalah 55.4%, 53.3% dan 8.7% masing-masing di kalangan kanak-kanak berumur 1-3 tahun. Manakala prevalen kurang berat badan, kebantutan dan susut berat badan di kalangan kanak-kanak berumur 4-6 tahun adalah 38.3%, 51.9% dan 6.2% masing-masing.

Sikap mengambil berat yang mempunyai hubungan yang positif dengan status pemakanan kanak-kanak yang berumur 1-3 tahun adalah sikap mengambil berat oleh ibu. Di antara kanak-kanak yang berumur di antara 4-6 tahun pula, penyediaan makanan yang tidak spesifik.

Pada keseluruhannya, kajian ini mendapati bahawa terdapat beberapa sikap mengambil berat yang dikaitkan dengan status pemakanan kanak-kanak. Manakala yang lainnya, tidak dikaitkan dengan status pemakanan kanak-kanak. Sikap mengambil berat ini mempengaruhi secara berbeza kedua-dua umur ini. Didapati amalan penjagaan kebersihan ini langsung tidak mempengaruhi status pemakanan kanak-kanak ini.

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I certify that an Examination Committee has met on 1st of August 2007 to conduct the final examination of Shashikala a/p Sivapathy on her Master of Science thesis entitled “Care-Giving Behaviors and Other Factors Affecting the Nutritional Status of Orang Asli Children in Selangor, Malaysia” in accordance with Universiti Pertanian Malaysia (Higher Degree) Act 1980 and Universiti Putra Malaysia (Higher Degree) Regulations 1981. The Committee recommends that the student be awarded the degree of Master of Science.

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DECLARATION

I hereby declare that the thesis is based on my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at UPM or other institutions.

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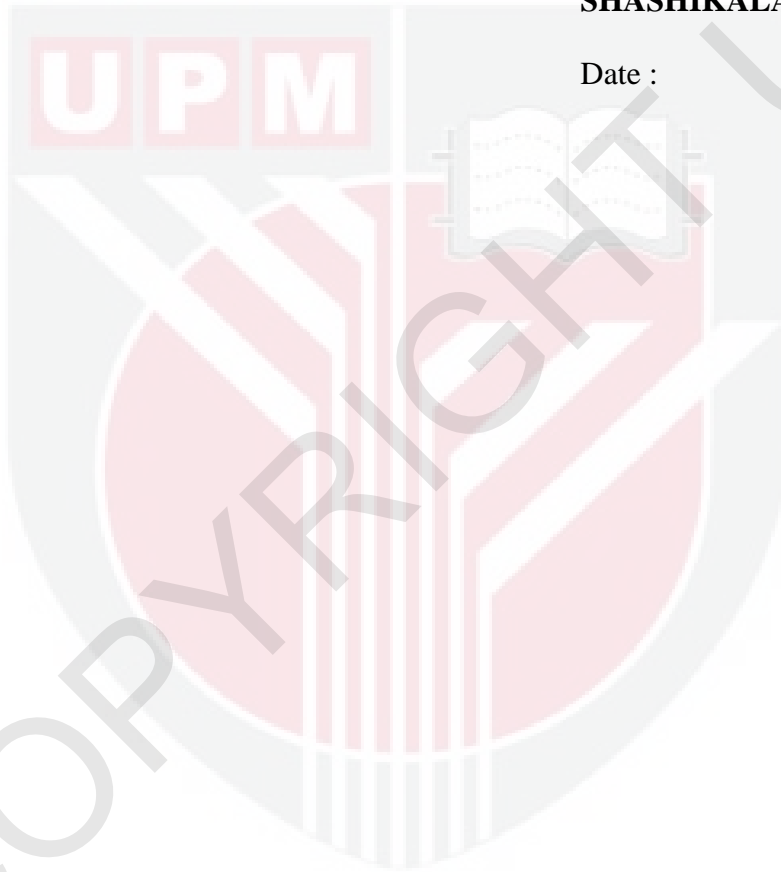


TABLE OF CONTENTS

		Page
	ABSTRACT	ii
	ABSTRAK	iv
	ACKNOWLEDGEMENTS	vi
	APPROVAL	vii
	DECLARATION	x
	LIST OF TABLES	xiv
	LIST OF FIGURES	xvii
	CHAPTER	
I	INTRODUCTION	1
	Problem Statement	8
	Importance of Study	11
	Objectives	15
	General Objective	15
	Specific Objectives	15
	Null Hypothesis	17
II	LITERATURE REVIEW	19
	Development of the concept of care	19
	Engle's Constructs of feeding behaviour	20
	Adaptation to psychomotor abilities for self-feeding	21
	Feeding responsively	22
	The feeding situation	26
	Parental control on child feeding	26
	Feeding practices and nutritional status of children	27
	Hygiene practices and nutritional status of children	27
	Other factors that influence nutritional status of children	34
	Nutritional status of the caregiver/mother	34
	Short stature	35
	Underweight	36
	Overweight and Obesity	37
	Anaemia	37
	Nutritional status mother and relationship with nutritional status of children	38
	Nutritional status of children	39
	Dietary Intake of the children	39
	Socioeconomic and demography factors	43
	Nutritional status of Orang Asli children	54
III	METHODOLOGY	59
	Background	59
	Research Location	59

Sampling Procedure	59
Research Design	61
Sample size calculation	62
Instruments	63
Pre-testing	78
Data Analysis	78
IV RESULTS	80
Sociodemographic characteristics of the households	80
Ownership of savings, house and land possessions	83
Basic amenities and waste disposal	83
Care behaviours of the mother	86
Distribution and mean scores of feeding practices of mothers	86
Parental control on child feeding	126
Hygiene practices of the mother	129
Nutritional status of the children	131
Anthropometry	131
Dietary Intake of the children	134
Food group intake	138
Nutritional status of the mother	139
Anthropometric indicators of the mother	139
Dietary intake of the mother	141
Mean difference in care behaviours	143
Bivariate Analysis	145
Relationship between care behaviours and nutritional status of the children	145
Relationship between nutritional status (Zscores) and household socioeconomic factors	148
Relationship between nutritional status of mothers and nutritional status of the children	150
Relationship between dietary intake and nutritional status of the children	152
Multivariate Analysis	155
Relationship between socioeconomic and demography, hygiene practices, feeding practices of the mother, parental control over child feeding, resources for care of the mother and dietary intake of the child with nutritional status of children (weight for age) aged 1-3 years old	155
Relationship between socioeconomic and demography, hygiene practices, feeding practices of the mother, parental control over child feeding, resources for care of the mother and dietary intake of the child with nutritional status of children (height for age) aged 1-3 years old	156
Relationship between socioeconomic and demography, hygiene practices, feeding practices of the mother, parental control over child feeding, resources for care of the mother and dietary	157

	intake of the child with nutritional status of children (weight forage) aged 4-6 years old	
	Relationship between socioeconomic and demography, hygiene practices, feeding practices of the mother, parental control over child feeding, resources for care of the mother and dietary intake of the child with nutritional status of children (height forage) aged 4-6 years old	158
V	DISCUSSION	159
	Socioeconomic and demography characteristics of the households	159
	Nutritional status of the mother	163
	Dietary intake of the mother	163
	Anthropometry of the mother	167
	Caregiving behaviours	
	Hygiene behaviours	168
	Feeding practices	169
	Parental control on child feeding	172
	Dietary intake of the children	173
	Prevalence of malnutrition	177
	Relationship of care behaviours with nutritional status of children aged 1-3 years old (height for age)	179
	Other factors with nutritional status of children aged 1-3 years old (height for age)	180
	Relationship of care behaviours with nutritional status of children aged 1-3 years old (weight for age)	183
	Other factors with nutritional status of children aged 1-3 years old (weight for age)	184
	Relationship of care behaviours with nutritional status of children aged 4-6 years old (height for age)	185
	Relationship of care behaviours with nutritional status of children aged 4-6 years old (weight for age)	186
	Other factors with nutritional status of children aged 4-6 years old (weight for age)	188
VI	CONCLUSION AND RECOMMENDATIONS	190
	Conclusion and Recommendations	190
	Study Limitations	193
	REFERENCES	194
	APPENDICES	201
	BIODATA OF THE AUTHOR	247

LIST OF TABLES

Table		Page
2.1	Developmental stages and recommended feeding behaviours for 12-15 months old infants	22
3.1	Number of households in Orang Asli villages of Sepang district	60
3.2	Number of households in Orang Asli villages of Kuala Langat district	61
3.3	Classification of BMI (WHO, 1995)	73
3.4	Classification of Z scores based on the NCHS (WHO, 1995) reference	75
3.5	Serving size according to food group for children and mothers	76
4.1	Socio-demographic characteristics of the household (n=137)	65
4.2	Savings and ownership of house and land possessions	67
4.3	Availability of basic amenities	68
4.4	Waste disposal methods used by households	68
4.5	Anthropometric indicators of the children aged 1-6 years old (n=173)	69
4.6	Distribution of anthropometric indicators of boys and girls aged 1-3 years old	70
4.7	Distribution of anthropometric indicators of boys and girls aged 4-6 years old	71
4.8	Mean intake of energy and nutrients and percentage of RNI	72
4.9	Mean intake of energy and nutrients and percentage of RNI of boys and	74

and girls aged 1-3 years old

4.10	Mean intake of energy and nutrients and percentage of RNI of boys and girls aged 4-6 years old	74
4.11	Food group intake according to age groups	76
4.12	Comparison of food group intake between boys and girls (mean serving size)	76
4.13	Distribution of responses and mean scores for factors in parental control on child feeding in children aged 1-3 and 4-6 years old	79
4.14	Distribution of observed hygiene behaviours of mothers (n=137)	81
4.15	Feeding observations scores for children 1-3 and 4-6 years old	83
4.16	Anthropometric indicators of the mothers (n=137)	89
4.17	Mother's intake of energy and nutrients and percentage of RNI	91
4.18	Number of servings of food groups consumed by the mother	92
4.19	Correlation between nutritional status (Z scores) and household socioeconomic factors	95
4.20	Correlation between anthropometry indicators of the mother and nutritional status of the children	97
4.21	Correlation between parental control on child feeding and nutritional status of the children	101
4.22	Correlation between hygiene and nutritional status	101
4.23	Correlation between feeding observation and nutritional status of the children	102
4.24	Correlation between food and nutrient intake of the children and	103

nutritional status

4.25	Correlation between diet quality of the children and nutritional status	104
4.26	Relationship between socioeconomic and demography, hygiene practices, feeding practices of the mother, parental control over child feeding, resources for care of the mother and dietary intake of the child with nutritional status of children (weight for age) aged 1-3 years old	106
4.27	Relationship between socioeconomic and demography, hygiene practices, feeding practices of the mother, parental control over child feeding, resources for care of the mother and dietary intake of the child with nutritional status of children (height for age) aged 1-3 years old	107
4.28	Relationship between socioeconomic and demography, hygiene practices, feeding practices of the mother, parental control over child feeding, resources for care of the mother and dietary intake of the child with nutritional status of children (weight for age) aged 4-6 years old	108
4.29	Relationship between socioeconomic and demography, hygiene practices, feeding practices of the mother, parental control over child feeding, resources for care of the mother and dietary intake of the child with nutritional status of children (height for age) aged 4-6 years old	109

LIST OF FIGURES

Figure	Page
1.1 The UNICEF Conceptual Model	2
1.2 Research Conceptual Framework adapted from UNICEF	12
2.1 Stunting in adult women 1980s (Women 15-49 years old)	36
3.1 Food guide Pyramid for children	77
4.1 Serving behaviour subscales : Serving meals without being asked for 1-3 and 4-6	79
4.2 Serving behaviour subscales : Ask child first and then serves meals for 1-3 and 4-6	79
4.3 Serving behaviour subscales : Child ask for food at meals for 1-3 and 4-6	80

CHAPTER I

INTRODUCTION

It is now well established that inadequate food intake and poor health care in the first few years of life are responsible for most of the stunting and underweight among children in developing countries. According to the United Nations Administrative Committee on Coordination, Sub Committee on Nutrition (ACC/SCN) 2000, malnutrition remains as a major health problem in developing countries especially among the poorest children of the community. In 2000, it was estimated that 32.5% of children under five in developing countries were stunted. By 2005, it is estimated that the prevalence of stunting would decrease to about 29%. Underweight due to wasting or chronic under nutrition or both affect fewer children compared to stunting. It was estimated that 26.7% of preschool children in developing countries were underweight in 2000 while the prevalence in 2005 was estimated to be 24.3%. About 70% of these children live in Asia.

Dietary quality and quantity are important for nutrient intake but they do not explain all of the variance observed in the prevalence of under nutrition in children. Even in the midst of poverty with resulting food in availability and limited healthcare, proper caregiving practices can optimize the promotion of good health and nutrition of women and children. In 1990, UNICEF proposed a conceptual framework which suggested that not only food availability and healthcare services are necessary for child survival but care for children and women are as important (Figure 1.1).

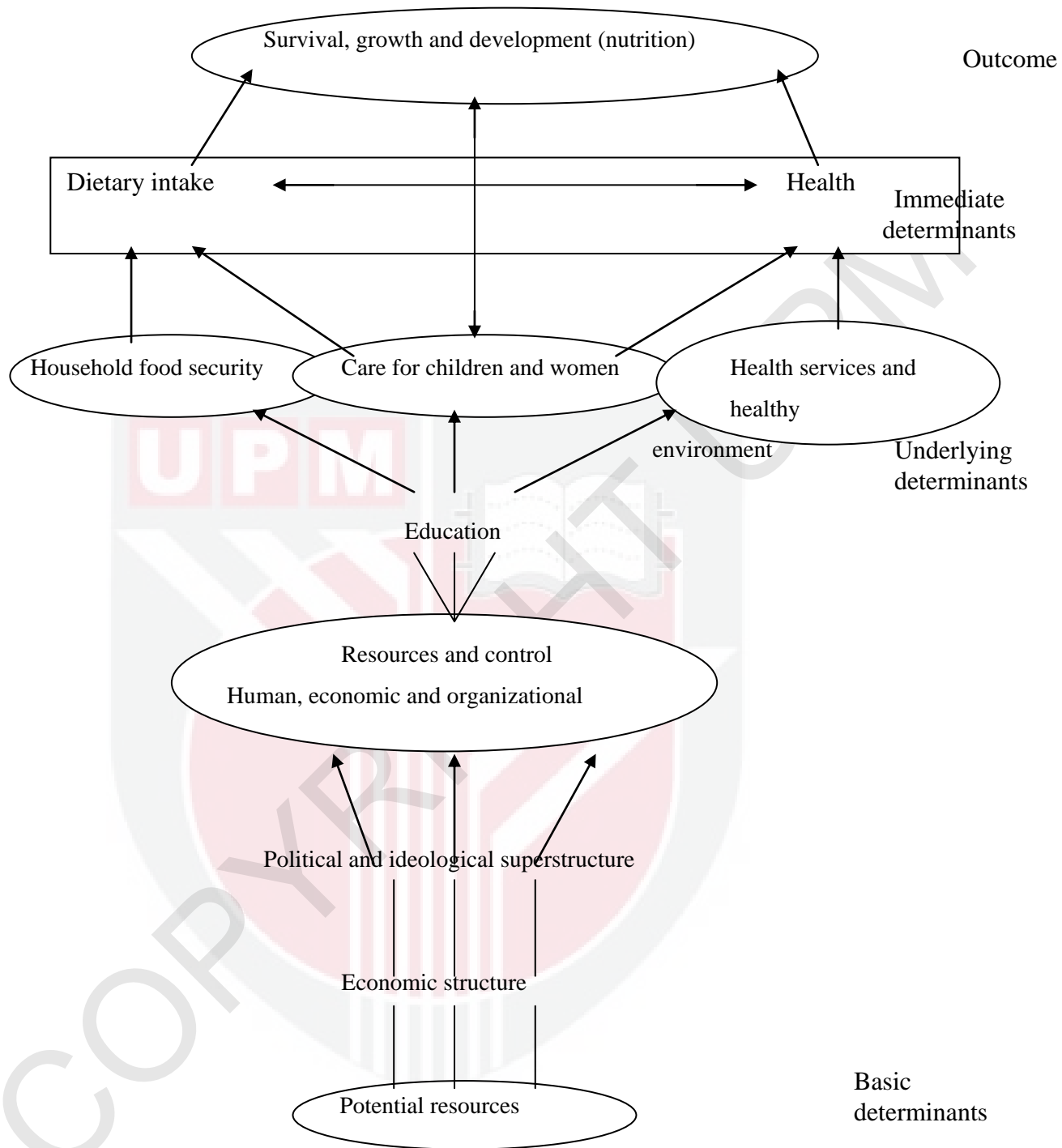


Figure 1.1: The UNICEF Conceptual Model (1990)

UNICEF's conceptual model identified several factors involved in a child's survival, growth and development. These factors are categorized as immediate

determinants, underlying determinants at household/family level and basic determinants in the society. The immediate determinants of good nutrition and survival are adequate dietary intake and health. These in turn are determined by underlying factors at the household/family level, which are household food security, health services and the care of women and children. Food, health and care are in turn determined by basic factors, which are political, ideological, historical and economic structures

The identification of care as an important determinant of child nutritional status in the UNICEF model was recognized at a policy level as one among the fundamental components for the nutritional well being of children (International Conference on Nutrition, 1992). The major care practices that were identified in the UNICEF Model, are care for women, breastfeeding and feeding of young children, psychosocial stimulation of children, food preparation and food storage practices, hygiene practices and home health practices. In order to perform good care practices, the caregivers need sufficient resources at the household, economic and organizational level. The major categories of resources that caregivers need are education, knowledge and beliefs, health and nutritional status, mental health and stress control, autonomy and control of resources, workload, time and social support (Engle, Lhotska and Armstrong, 1997).

The United Nations Sub Committee on Nutrition (1995) defined the term care as the provision of time, attention, support and skills to meet the physical, mental and social needs of socio-economically deprived and nutritionally vulnerable groups in the household and community. The growing child is the most vulnerable of these groups

which include in addition, women, the elderly and the mentally, physically and sensory disabled. Among the socio economically deprived are orphans and children who are victims of difficult circumstances such as war and natural disasters. Individuals most at risk of malnutrition are those who are both physiologically vulnerable and socio economically deprived.

Engle et al. (1997) further expanded the concept of care as proposed by UNICEF and defined care as the practices or behaviors performed by caregivers (mothers, siblings, fathers and childcare providers) that affect nutrient intake, health and the physical and cognitive development of the child. The provision of food, healthcare, stimulation and emotional support are all necessary for children's healthy growth and development. Examples of care practices or behaviors are breastfeeding, diagnosing illnesses, stimulating language (cognitive development), emotional support such as encouragement, coaxing, keeping food safe, health promoting behaviors such as the use of latrines hygienically and health seeking behaviors. The ways through which these practices are performed by example with affection, and responsiveness are critical to a child's growth and survival.

Studies have identified caregiving behaviors such as feeding practices, hygiene practices and knowledge of the mothers that result in good growth among children of uneducated mothers from poor households, and in families with limited access to food and health services. According to Zeitlin et al. (1990) outcomes for children depend on both the characteristics of the child and on maternal competence; very healthy children may grow well and thrive even in the absence of good care, while extremely good care is very important for the smallest and the weakest of children.

In a study done in Ghana, Africa, care practices were strong determinants of child nutritional status particularly among children three years and below from poorer families and among children whose mothers had less than secondary school education (Ruel et al., 1999). Better maternal care practices brought the height for age Z-scores of children to the same level as that of children from wealthier families or of more educated mothers, by approximately one half of a Z-score higher. Poor maternal schooling and low income were found to have a negative effect on children's height for age Z-score only if mothers were poor caregivers. Thus in this population, good care practices compensated for low maternal education and insufficient income

Non-optimal feeding practices such as lack of encouragement to eat, even for those children who refuse to eat when combined into a care index, were found to be strong determinants of poor nutritional status in children of 4-36 months of age in Accra, Ghana. The prevalence of stunting among children whose mothers were in the lowest tertiles of care practices was more than three times higher than among children whose mothers were in the highest care tertiles (7 % compared to 24 %). Thus the adoption of optimal child feeding practices is likely to have a significant effect on child nutritional status (Ruel et al., 1999).

Mothers who were directly responsible for child feeding had children who were taller than children of mothers who have less influence over child feeding particularly in the youngest children from the age of 12 through 71 months as found in a study in rural Chad (Begin et al., 1997). Caregiver influences on child feeding decisions were

associated with children's height for age in a study in Ghana. Begin, Frongillo and Delisle, 1999). This might be because of greater autonomy and caregivers are most likely to be involved and influential in decisions on household food expenditures, The nutritional status of preschool children is better than primary school children because it is influenced by their food preferences and the level of parental control on their food intake as shown in a study in La Trinidad among children aged 3-6 years and 7-12 years old (Blijham et al., 2006).

Hygiene practices of the caregiver are also important determinants of child nutritional status. Caregivers of children aged 12-18 months were less likely to be observed washing their hands in families with working mothers as observed in Managua, Nicaragua. Children whose hands were washed had significantly higher weight for height than children whose hands were never washed (Lamontagne, Engle and Zeitlin, 1998). Limited household resources such as poor housing quality, few assets and limited access to water, sanitation and garbage collection services, on the other hand are constraints only for hygiene practices (Klemesu et al., 2000).

The quantity of water available in the household plays an important role in influencing stunting among children less than 5 years in Hakra, Pakistan. The quantity of water available in the household was a strong predictor for stunting among children aged less than 5 years in Pakistan where people depend on irrigation water for all their domestic water needs. The households, which have larger storage of water, had lower prevalence of diarrhea and stunting. Besides the availability of adequate water supply and its effect on diarrhea and resultant growth, the existing

environmental conditions and presence or absence of other related factors also influence exposure to pathogens (Van der Hoek et al., 2002).

Most of the studies on care behaviours used qualitative methods. Ruel et al. (1999) and Klemesu et al. (2000) reported hygiene practices using spot check method. Field workers were trained to observe and grade a list of predetermined hygiene related aspects of the caregiver, index child, house and compound where the caregivers live. These observations usually serve as proxies for good or bad behaviours rather than providing information on the behaviours themselves. Van der Hoek et al. (2002) used a structured observation checklist for getting information on hygiene behaviours and sanitary practices. Direct observations on the household compound focused on presence of faecal material, availability of soap, food storage practices and general cleanliness of the compound.

In Malaysia several studies have reported varying prevalence rates of malnutrition particularly in rural poor and underserved communities including the Orang Asli, the indigenous minority people of Peninsular Malaysia. Soon and Khor (1995) reported that 14.3% of the children aged 1-6 years old in FELDA Sungai Koyan, Pahang were underweight, 10.5% were stunted and 2.9% were wasted. Sameeha (2001) reported that the prevalence of stunting was 31.4%, while 15.1% were underweight and 3.5% overweight among Orang Asli Semelai children in Sungai Sampo, Negeri Sembilan. In another more recent study by Zalilah and Tham (2002) the prevalence of significant underweight, stunting and wasting were 45.3%, 51.6% and 7.8% respectively among Temuan children aged 3-6 years old in Hulu Langat, Selangor.

None of these studies examined the impact of care practices particularly feeding behaviour and hygiene practices on the nutritional status of the children.

The Orang Asli community in Malaysia is relatively isolated from the other communities and therefore they are often perceived as a less developed group compared to other ethnic groups with over 65% of them living way below the poverty line. (Nicholas, 1997). Based on his in depth study of Orang Asli, Nicholas concluded that this community lags behind other communities in several aspects of development such as education, health and nutrition status.

While nutritional studies in other rural communities in Malaysia have reported the relationship between care practices, such as breast-feeding and complementary feeding practices to the nutritional status of children, similar data is not available for the Orang Asli. As malnutrition continues to be a major problem in Orang Asli children, it is important to investigate the contribution of care practices in terms of child feeding and hygiene behaviours to the nutritional status of Orang Asli children.

Problem Statement

In recent years studies have reported that malnutrition remains an unsolved problem in indigenous minority populations in Peninsular Malaysia. In a study by Heng (2001), 86% of boys and 80% of girls aged 2-6 years old in an Orang Asli community in Pekan, Pahang were found to be underweight. In addition 18.8% of the boys were wasted, while 62.5% of the boys and 80% of the girls had MUAC (mid-upper-arm-circumference) less than the 5th percentile. According to Kassim et

al. (1989) 56% were underweight and 65.7% were stunted among children aged 10 years and less in 28 villages. Ismail et al. (1988), reported that 4-6 years old pre-schoolers in Betau, Pahang, were stunted (60%) and wasted (80%). About 40 % of pre-schoolers in this study consumed less than 2/3 RDI for protein. Sameeha (2001) reported that the prevalence of stunting was 31.4%, while 15.1% were underweight and 3.5% overweight among Orang Asli Semelai children in Sungai Sampo, Negeri Sembilan.

Factors that have been shown to affect the nutritional status of OA children include low socioeconomic status, health status and poor care practices in terms of child feeding. In Malaysia, there are some published data on care behaviours such as infant feeding, breast-feeding practices and complementary feeding among children (Wan Manan 1995, Lim 1997, and Kam 2000). Most of these studies have been descriptive studies in rural Malay population. There are not much reported qualitative studies in Malaysia on feeding and hygiene practices as well as published data on parental control on child feeding.

The recognition of the importance of care for the development of the child is still relatively new among nutritionists because prior to 1990, much of the research which had focused on child nutrition and survival ignored the role of the care component. Several lines of evidence have lead researchers to emphasize on the role of care practices. Intervention studies that improved availability of food and income often showed little or no impact on child nutrition. This raised the issue about other constraints on child nutritional status and further studies were suggested to identify

the role of ill health and the role of intrahousehold factors particularly care (Arimond and Ruel, 2002).

Care as it relates to breast-feeding and complementary feeding has been reported for some rural communities in Malaysia. However very few studies have been conducted to examine feeding behaviours in the Orang Asli population. Past nutritional studies were mostly quantitative and most determined anthropometric and blood parameters (Khor 1988; Osman et al., 1992; Osman and Zaleha, 1995 and Ariff et al., 1997; Cuthbertson et al., 2000). As prevalence of malnutrition remains high in Orang Asli children, this study examined the problem from the perspective of maternal care behaviors, using both quantitative and qualitative approaches. This study was undertaken to determine whether maternal caregiving behaviours influence nutritional status of the children. Care practices with regard to feeding and hygiene practices and their relationship to the children's nutritional status of Orang Asli children (1-6 years old) from Sepang and Kuala Langat district were studied. The research questions addressed in this study were as follows:

- (i) Do care giving behaviors in relation to child feeding practices, parental control on feeding and hygiene behaviors influence the nutritional status of the child and dietary intake of the child?
- (ii) To what extent maternal nutritional status affect care behaviours of her children and nutritional status of the child?
- (iii) To what extent sociodemography factors affect care behaviours?
- (iv) Are there any differences in care behaviours in younger and older children?

Importance of Study

In Malaysia, there is little published information on the influence of care behaviours from the aspect of hygiene behaviours, feeding behaviours and parental control on child feeding on nutritional status of children (Shashikala et al., 2005). Furthermore the qualitative method of direct structured observation was used in collecting data on hygiene and feeding behaviours. Structured observation has been used in research on behaviour and its association with health. The use of quantitative and qualitative methods in determining the care practices will give a better understanding on the importance of care practices on determining nutritional status. This will also provide other researchers with a starting point for future research on factors contributing to nutritional status among Orang Asli children.

The research conducted so far among orang asli population in Malaysia have focused mainly on the major tribal groups for eg. Semai, Temiar, Jakun etc. Not many studies however have been conducted on the Mahmeri and Temuan tribes. The studies done on Temuan tribes were mainly on socioeconomic, social behaviour , dietary patterns, prevalence of goiter and food security and child nutritional status (Osman et al., 1991, Osman et al., 1992 and Zalilah and Tham 2002). While there are no studies done on Mahmeri tribe. From this study the Temuan and Mahmeri tribe will have baseline data on nutritional status of young children and at the same time provide a basis for comparison for future research on nutritional status of the Orang Asli children.

The results of this study will contribute to greater awareness of health and nutritional status of Orang Asli children. It will also provide guidance to Department of Orang Asli Affairs (JHEOA), Ministry of Health and Non-governmental agencies (NGO) in implementing policies or interventions to improve the Orang Asli childrens' health and nutritional status. Programs or policies specific to their culture can be designed and implemented to improve care practices and its consequences on the health and nutritional status of the Orang Asli children.

Objectives

General Objective

To determine the relationship between caregiving behaviors and nutritional status of Temuan and Mahmeri Orang Asli children aged 1-6 years old in Sepang and Kuala Langat districts.

Specific Objectives

1. To determine the caregiving behaviors of the mother or caregiver which are:
 - a) Child feeding practices (caregiver child feeding behaviors, intrahousehold food behaviors and other child care behaviors)
 - b) Parental control on child feeding practices (restriction, pressure to eat and monitoring)
 - c) Hygiene practices (mother's, child's, domestic and overall hygiene)
2. To determine the nutritional status of the children through:

- a) Anthropometry of the children (weight, height, height for age, weight for age and weight for height).
 - b) Energy and nutrient intake
 - c) Diet quality
3. To determine the nutritional status of the mother or caregiver which are:
 - a) Nutritional status (body mass index, waist circumference, hip circumference and waist hip ratio)
 - b) Energy and nutrient intake
 - c) Diet quality
 4. To assess the demography and socioeconomic factors of the households, which include, child's age, mother's age, mother's education, father's education, household size, number of children, father's income, mother's income, monthly household income, income per capita, household expenditure, food expenditure, number of rooms/space in the house, ownership of vehicles/money/land /house and availability of basic facilities.
 5. To determine the difference in care behaviours between mothers with 1-3 and 4-6 years old.
 6. To determine the relationship between caregiving behaviours and nutritional status of the children.
 7. To determine the relationship between maternal nutritional status, socioeconomy and demography factors and dietary intake of the child with nutritional status of the children.

Null Hypotheses

1. There is no significant association between care behaviours and the nutritional status of the children.
2. There is no significant difference in care behaviours between mothers with 1-3 and 4-6 years old children.
3. There is no significant association between nutritional status of the mother and the nutritional status of the child.
4. There is no significant association between socio-demography, dietary intake of the child and the nutritional status of the child.
5. There are no significant association between care behaviours and dietary intake of the children.

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