FACTORS INFLUENCING MALNUTRITION IN CHILDREN FIVE YEARS AND BELOW IN SERIAN DISTRICT IN SARAWAK

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FACTORS INFLUENCING MALNUTRITION AMONG CHILDREN AGED FIVE YEARS AND BELOW IN SERIAN DISTRICT UNDER SAMARAHAN DIVISION IN SARAWAK

ABSTRACT

Malaysia has been progressing well in both socioeconomic status and health care services; however, malnutrition is still prevalent in rural areas among the poor households. The aetiology of childhood malnutrition is complex involving interactions of multiple factors at individual, family and community levels. This study aimed to determine the prevalence of malnutrition and factors influencing malnutrition among children aged five years and below in Serian District in Sarawak. It was a cross sectional study. The children's weights and heights/lengths were measured. Socio-demographic information, factors influencing malnutrition, 24-hour diet recall and food security was gathered through a structured interview with the mothers/caretakers of the children. A total of 177 children and their mothers/caregivers were recruited from all the health clinics in Serian District. There were 20.9% of underweight, 11.9% of stunting and 10.2% of wasting. Using logistic regression, the significant factors found to be contributing to underweight were birth weight, frequency of child visit to the clinic, child's appetite and individual insecure; for stunting, duration of breast feeding, age when complementary diet were introduced, type of house and duration of family planning; and for wasting were individual insecure and duration of family planning. In conclusion, malnutrition is still prevalent in Serian district. The findings indicate the need for appropriate public health promotion and socio-economic improvement interventions towards improving the nutritional status and health of children in Serian District.
INTRODUCTION

1.1 INTRODUCTION

This chapter will provide an overview of the nature and conceptual framework of this study. The research problems which have been identified will be described in detail as well as the justification of this study. At the end of this chapter, the objectives of this study will be elaborated.

1.2 FOOD AND NUTRITION

Food is one of the fundamental human needs in life. Food gives energy and supplies the essential nutrients required by the human body to obtain the most optimum level of human development especially during early life. Abraham Maslow developed the Hierarchy of Needs model in 1940-50s, where food was categorised as a biological and physiological needs as shown in the diagram below (Wahba, et al., 1976). Biological and physiological need are those required to sustain life, thus without food, one is unable to sustain life. Sufficient food and household access to it, assures good nutrition.
Nutrition is defined as food or nourishment to keep an organism growing, healthy and viable. It also refers to the process of providing or receiving food or other life-supporting substances (WHO, 1995). Good nutrition in childhood reinforces lifelong eating habits that contribute children's overall wellbeing and help them to grow up to their full potential and a healthy life.

The availability and adequacy of food are influenced by many factors; individual factors, family factors and community factors. Insufficient food, poor nutritional intake and food insecurity will greatly affect the children; they will be more susceptible to have health problems, poor nutrition, unhealthy development and poor school readiness and performance (Murphy et al, 2008).
1.3 BACKGROUND OF THE STUDY

Malnutrition is a never ending problem and it is still a major health problem in developing countries. Like many other developing countries, Malaysia had a history in which malnutrition was prevalent (Khor et al, 2003). However, ever since after independence, the government has carried out various programmes to combat hunger and malnutrition (MOH, 2005). These efforts had led to the significant improvement of the nutrition and health status of the children in this country. Despite of the great progress in both socioeconomic and health care situation which had improved the nutritional status of the population, malnutrition is still common among children in poor rural communities (Che Asiah et al., 2004).

The National Plan of Action for Nutrition of Malaysia to improve the nutritional wellbeing of the Malaysian population in the country was planned by the Ministry of Health and implemented together with the Ministry of Social Welfare and Rural Development, the Ministry of Education as well as the Non-Governmental Organisations (MOH, 2005)

Currently, The National Plan of Action for Nutrition of Malaysia II is ongoing. It is a 10-year plan for the period of 2006 to 2015, which include alleviation of macronutrient and micronutrient deficiencies, nutrition promotion and improving the household food security.
1.3.1 The Food Basket Programme

The Food Basket Programme was started in June 1989, for the rehabilitation of malnourished children. The objectives of the programme are to improve health and nutritional status through food and micronutrient supplementation, through provision of sanitary facilities and clean water supply and providing education on health and nutrition.

The criteria for being recruited into the Food Basket programme are children’s age (six months to less than six years), underweight (weight-for-age less than -2SD of the median) and family income (less than half of the poverty line income). The eligible children are given foods and multivitamins supplements every month until they are well on the road to recovery. The health staff will closely monitor the children by monthly assessment in the clinic, nutrition education and home visit. Nutrition counselling will be provided as well as the instructions and demonstrations on the preparations of nutritious meals using items from the food basket. Families without water supply or sanitation facilities will be assisted.

The children will be given food basket for a minimum period of 6 months and the food supplements will be continued until the child’s weight for age achievement shows sustained improvement. Other malnourished children who are not eligible for the ‘food basket’ are given one kilogram of full cream milk per month as food supplement through the health care service.
1.3.2 Nutrition Promotion

The effort to protect, support and promotion of breastfeeding started in 1979 with the publication of Malaysian Code of Ethic for Infant Formula Products. The promotion of breastfeeding is reinforced when the MOH launched the Baby Friendly Hospital Initiative (BFHI) in August 1993, an initiative adapted from WHO.

This initiative ensures that the maternity facilities in the baby-friendly hospitals fully practice all ten steps of successful breastfeeding. Malaysia was recognised by WHO for having all 110 government hospitals as baby friendly in March 1998. In 2005, all 114 government hospitals are recognised baby-friendly including four private hospitals.

1.3.3 Improving the Household Food Security

The food available to the household must be shared accordingly to individual need; the food must be sufficient in variety, quality and safety; and each member must have good health status in order to utilize the food consumed.

Household Food Security could be achieved by incorporation of nutritional objectives, considerations and components into the national policies and programmes. The Ministry of Agriculture and Agro Based Industries need to strengthen their technical capabilities to integrate nutrition in agricultural and development projects.
research to improve food production, utilization and distribution and research on cost-effective indicators to measure household food security.

1.3.4 Poverty Alleviation Programmes

There are other programmes which are listed in NPANM II such as – The Poverty Eradication Programme, Programme for the Hard-core Poor and the Social Welfare Programme.

Recently introduced programmes by the Government to help the poor which indirectly increase the standard of living of the people are the E-kasih and 1Azam Programme under the Ministry of Women, Family and Community Development. E-kasih programmes are database system created at the national level to collect data of poor family in order to plan, implement and monitor poverty programs. It is specifically designed to enable aid agencies to select those who are truly eligible to receive assistance. The 1Azam programme is to create job and giving assistance for those with low-income to increase their income.
1.4 RESEARCH PROBLEM

Malnutrition is associated with about half of all child deaths worldwide. Malnourished children have lowered resistance to infection; they are more likely to die from common childhood ailments like diarrhoeal diseases and respiratory infections; and for those who survive, frequent illness saps their nutritional status, locking them into a vicious cycle of recurring sickness, faltering growth and diminished learning ability (Ergin et al, 2007).

The World Food and Agriculture Organisation in 2010 estimates that up to 13% of the world population are malnourished (FAO, 2004) and approximately 70.0% of the world's malnourished children live in Asia, resulting in the region having the highest concentration of childhood malnutrition (Khor et al., 2003). UNICEF (2006) reported, the highest levels of underweight prevalence are found in South Asia, where almost half (46%) of all children under five are underweight.

In 1990s, the global rate of child malnutrition improved, as measured by declines in the prevalence of both stunting (34 – 27%) and underweight (27 – 22%) (de Onis et al, 2003). However, in Africa, the numbers of stunted and underweight children are reported increasing from 40 to 45 million and 25 to 31 million, respectively (de Onis et al, 2003). Large improvements were achieved in Eastern and South-eastern Asia, while South Central Asia continues to suffer very high levels of malnutrition.
In Malaysia, progress in both socioeconomic and health care has greatly improved the nutritional status of children. Various studies had been conducted extensively concerning the nutrition status of children in Malaysia. Since Malaysia had attained her independence in 1957, there had been a dramatic decline in the infant mortality rate and the toddler mortality rate (Tee, 1999). The infant mortality rates had declined from 73 in 1960 to 7 in 2003, while the toddlers mortality rates has decline from 105 in 1960 to 7 in 2003 (UNICEF, 2005). The principal outcomes of under-nutrition affecting young growing children are underweight and stunting. According to the MOH/UNICEF Survey that was undertaken nation-wide in 1998 – 2000 among children less than 6 years, 19.2% were underweight (<-2SD weight for age) and 16.7% stunted (<-2SD height for age) (MOH, 2005). Based on surveillance data of the Ministry of Health (MOH) Malaysia, the overall prevalence of underweight among children below 5 years was 17.3% in 2004 compared to 25% in 1990. In contrast, research studies often report prevalence of underweight and stunting in children of similar ages from poor households exceeding 25% and 30% respectively.

Studies all over the world have shown that nutritional problems shared many similar factors in their aetiology (Griffiths et al., 2004). Past studies in Malaysia also reported similar patterns of relationship between socio-demographic factors and nutritional status of children from rural communities (Chee et al., 2002). Most of the factors are interrelated including biological, social, cultural and economic aspects. The influences of these factors can originate and manifest at different levels of the child’s environment for example in the family, household, community and national level (Griffiths et al., 2004). Therefore, to plan and deliver an effective preventive
intervention programme for the children targeting at their risk and the factors contributing to their malnourished condition should be systematically or well planned or the efforts in eradicating malnutrition would be redundant and wasteful (Rice et al., 2000).
The aetiology of childhood malnutrition is complex involving interactions of multiple determinants that include biological, cultural and socio-economic influences (Khor et al., 2003). One of the established frameworks in explaining the causes of malnutrition is the framework by UNICEF 1991 as shown below (Figure 2).

Figure 1.2: Conceptual Framework for the Causes of Malnutrition

(Source: UNICEF, 1991)
In the above framework, malnutrition is viewed as a manifestation of a multi-sectoral development problem that can be analysed in terms of the immediate, underlying and basic causes. The immediate causes are inadequate dietary intake and infectious disease; the underlying causes are household food insecurity, inadequate maternal and child care and inadequate health services and health environment; the basic causes include formal and non-formal institutions, political and ideological superstructure, economic structure and potential resources (UNICEF, 1998).

For the purpose of this study, the contributing factors would look into the individual, family and community factors and its relationship to child malnutrition as shown in Figure 1.3.
INDIVIDUAL FACTORS
1. Age
2. Gender
3. Birth Order
4. Birth Weight
5. Birth Interval
6. Duration of Breast Feeding
7. Complementary Feeding
8. Illness
9. Total Calorie Intake Per day

FAMILY FACTORS
1. Mother's Age
2. Mother's Education level
3. Mother's BMI
4. Father's Occupation
5. Food Insecurity
6. House Hold Size
7. Total House Hold Income

COMMUNITY FACTORS
1. Health care services
2. Water supply
3. Electricity supply

Figure 1.3: Conceptual Framework for Factors Influencing Malnutrition Among Children Aged Five years and below in Serian District
1.6 OBJECTIVES

1.6.1 GENERAL OBJECTIVES

To determine factors influencing malnutrition in children aged five years and below in Serian District.

1.6.2 SPECIFIC OBJECTIVES

1.6.2.1 To determine the prevalence of malnutrition at Serian District

1.6.2.2 To assess the socio-demographic characteristics of the children and the household

1.6.2.3 To determine the health profile of the participants

1.6.2.4 To identify the individual factors, family factors and community factors contributing to malnutrition

1.6.2.5 To determine the relationship between individual, family and community factors with malnutrition
1.7 RESEARCH HYPOTHESIS

Null Hypothesis

There is no relationship between individual, family and community factors with malnutrition.

Alternative Hypothesis

There is a relationship between individual, family and community factors with malnutrition.