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A Qualitative Study on Malnutrition in Children from the Perspectives of Health Workers in Tumpat, Kelantan

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ABSTRACT

Underlying causes of most nutrition related problems are diverse, including biological, social, cultural, and economic factors. Qualitative approaches complement quantitative methods in identifying the underlying meanings and patterns of relationships involved in managing malnutrition. This study examined perceptions regarding malnutrition among health workers from 7 clinics (community and health clinics) in Tumpat, Kelantan. A total of 18 nurses and 2 doctors, who were involved in monitoring child health and nutrition, were included in the study. These health workers were interviewed using a semi-structured questionnaire adapted from Sastry's framework on malnutrition (Sastry, 1996). The questionnaire included biological, behavioral and environmental factors that influence child health and nutrition. All the health workers perceived that mothers/caregivers play the main role in improving the health of malnourished children. The quality of childcare was rated as moderately satisfactory by the health workers. Most of the affected families who were given the Food Baskets did not fully use all the items for the malnourished child. Child feeding practice was based on the needs of the whole family rather than according to the target child's needs. Most of the mothers preferred processed cereals than rice porridge because the former is easier to prepare for the child. Although they were from a low socio-economic background, most of the mothers were not earning additional income for the family. The qualitative methodology provided information that can be used as a basis for the designing of quantitative questionnaires to assess malnutrition among children. The induction characteristic of qualitative methods was used to gain an understanding of the underlying reasons or phenomena such as behaviours that are directly observable.

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INTRODUCTION

Malnutrition is the direct result of inadequate dietary intake, the presence of disease, or the interaction of these two factors (WHO, 1995). The risk of dying from a disease is twice as high for mildly malnourished children, five times as high for those moderately malnourished, and eight times greater for children classified as severely malnourished when compared to normal children (UNICEF, 1996).

Despite appreciable worldwide improvements in life expectancy, adult literacy and nutritional status, about 780 million people in developing countries or 20% of their combined population, still do not have access to enough food to meet their basic daily needs for nutritional well-being (Latham, 1997). The highest levels of underweight prevalence are found in South Asia, where almost half (46%) of all children under five are underweight (UNICEF, 2006).

Many studies have shown that nutritional problems all over the world shared many similar factors in their etiology (Kikafunda *et al.,* 1998; Griffiths *et al.,* 2004; Heaton & Forste, 2003). In Malaysia, past studies also reported similar patterns of relationship between socio-demographic variables and nutritional status in children from rural communities (Zamaliah *et al.,* 1998; Norhayati *et al.,* 1997; Chee *et al.,* 2002). These factors are interrelated but diverse in nature, including biological, social, cultural and economical aspects. The influences of these factors can originate and manifest at different levels of the child's environment – family, household, community and national (Griffiths *et al.,* 2004). Therefore, to plan and deliver an effective preventive intervention programme, the children at risk and the factors contributing to their malnourished condition should be identified. Otherwise, efforts in eradicating malnutrition would be redundant and wasteful (Rice *et al.,* 2000).

However, efforts in promoting better growth and health of children may be hindered by the complex causality involving political, environmental and social factors, which are difficult to prevent and controlled by isolated vertical approaches (Wagstaff *et al.,* 2004; James, 2006). Many health promotion implementers are looking at comprehensiveness as the key element of successful child health programmes, especially in dealing with behavioral aspects. Health workers are no longer perceived as screening and referral tools for identifying children to be referred for nutrition rehabilitation only, but rather as partners with mothers in combating malnutrition (Tchibindat *et al.,* 2004). The quality of care provided by health workers, such as nurses, may be affected by their attitude towards malnourished children and their mothers. Lack of awareness of the profound physiological changes that take place in malnutrition will affect the quality of nursing care delivery and support. Often, lack of proper maternal care was seen as a major causal factor in the development of malnutrition and can engender reproachful attitudes and resentment towards caregivers (Puoane *et al.,* 2006).

A study was undertaken with the aim of exploring the perceptions of health workers regarding the contributing factors of malnutrition in children seen at the clinics at Tumpat, Kelantan. The present report focuses on results obtained using qualitative research methodology.

METHODS

Study background

The state of Kelantan in Malaysia was chosen for this study because past research has indicated that Kelantan has the highest prevalence of moderate malnutrition (24%) and severe malnutrition (5.9%) (Zulkifli, Khairul & Atiya, 1999).

Between 1999 and 2000, Kelantan was placed as one of the top five states that received the most assistance in the Food Basket Programme, between 800 and 1600 cases per year (MOH, 2000). In 2004, a baseline survey was carried out by the authors in the district of Tumpat in Kelantan, which revealed that there were 1434 children (20.1%) under the age of 5 years old, who were classified as moderately underweight (below –2SD) and 721 children (10.1%) with severe underweight status (-3SD).

Study respondents

A semi-structured questionnaire was used to collect qualitative data. Respondents were chosen from the doctors and nurses working in the child health clinics in Tumpat. A total of 18 nurses and 2 doctors who were directly in-charge of looking after malnutrition cases and doctors who have treated these cases were included in the study. All the respondents were interviewed on a one-to-one basis. The nurses visited these cases weekly. During the visits, they usually assessed the condition of the household, observed food preparation and child feeding practices.

Description of the interview

The one-to-one interviews were conducted in the Malay language using a semi-structured questionnaire developed based on Sastry's framework on malnutrition (Sastry, 1996). During the interviews, the conversations were recorded in a mini portable cassette recorder, while essential information was written so that important points were not left out. The interviews were usually conducted after the clinic hours. Each interview usually lasted for 40-60 minutes. Prior to an interview, members of the Nutrition and Dietetics Programme of Universiti Sains Malaysia collectively assessed the content validity of the questionnaire used in the study based on the approach adopted by Haynes, Richard and Kubany (1995). The semi-structured questionnaire consisted of three major parts:

a) Biological
   - Siblings shared
   - Gender
   - Age
   - Birth weight

b) Behavioral
   - Health & diet
   - Shared preference for food
   - Childcare practice
   - Health practices
   - Feeding practices
   - Maternal factors
   - Status of children in the household
   - Family food preference
   - Birth intervals
   - Breastfeeding/Weaning

c) Environmental
   - Location
   - Economic
   - Development
   - Community
   - Infrastructure
   - Health services
   - Education facilities
   - Household socioeconomic status
   - Sanitation
   - Food availability
   - Disease
   - Intra-household resource allocation

Written consent was obtained from each of the respondents before the interview. The respondents were informed that the conversations were recorded and transcribed to assist the researcher in understanding the causes of malnutrition among the children in Tumpat, Kelantan. They were also informed that all information disclosed shall be treated with confidentiality.

Data analysis

The notes taken from the interviews were transcribed into a qualitative software called NVivo. This program used in qualitative data analysis "allows import and code textual data, edit the text; retrieve, review and recode coded data; search for combinations of words in the text or patterns in coding; and import or export data from and to quantitative analysis software" (QSR La Troble, Australia 2000). In order to verify the accuracy and completeness of the data collected, the main author listened to all recordings at least twice.

Ethics

Ethics approval was obtained from the Ethics Committee of Universiti Sains Malaysia. All participants who consented to the study were informed of their rights to refuse participation or withdraw from the study without having to give reasons. Participants were guaranteed anonymity and all information provided would be treated with confidentiality.

RESULTS

A total of seven clinics (community and health clinics) with 18 nurses and 2 doctors were interviewed. The breakdown of the respondents according to location and type of clinic is shown in Table 1.

All the nurses and doctors interviewed were directly in-charge of the malnutrition cases in their respective areas. All the nurses interviewed were community nurses (*jururawat desa*). They normally visited the affected children at least once a month and were in charge of disbursing the Food Basket to the parents of the malnourished child. No doctors were available for the community clinics. They were only available to the malnourished children in the health clinics. In the case of an emergency, the malnourished child would be referred to the nearest health clinic or hospital for treatment.

The average age of the malnourished children was 24.8 months, while the mean age of the mothers was 37.46 years. Table 2 shows the socio-demographic background of the families involved in the study.

The key topic areas with their individual findings and examples of responses are shown in Table 3.

Biological Aspects

Out of the items identified under biological aspects, gender was not considered important in determining the malnourished children. There was no perceived difference in gender among the malnutrition cases reported. According to the reports, most of the malnutrition cases started when the child was given complementary food.

Table 1. Information on the respondents

No.	*Name of the clinic*	*Clinic category*	*With doctors*	*Numbers interviewed*
1.	Tumpat	Health clinic	Yes	2 nurses, 1 doctor
2.	Wakaf Baru	Health clinic	Yes	2 nurses, 1 doctor
3.	Bunohan	Health clinic	Yes	2 nurses*
4.	Pengkalan Kubur	Community clinic		2 nurses
5.	Delima	Community clinic		3 nurses
6.	Cabang Empat	Community clinic		2 nurses
7.	Morak	Community clinic		3 nurses

*Doctor on duty was not available during the interview

Table 2. Socio-demographic information on households

	No.	*%*	*Mean*	*Range*
Age of the malnourished children (months)				
<10	80	27.1		
11-20	64	21.7		
21-30	43	14.6	24.8	1-60
31-40	34	11.5		
41-50	41	13.9		
51-60	33	11.2		
Age of head of household (years)				
<30	58	19.7		
31-40	138	46.8	37.46	19-66
41-50	80	27.1		
>50	19	6.4		
Educational Qualification				
Never been to school	6	2		
Primary school	44	14.9		
Secondary school	234	79.3		
Diploma and above	11	3.7		
Status of occupation				
Employee	177	60		
Self-employment	112	38		
Pensioner	2	0.7		
Not working	4	1.4		
Monthly income (RM)				
1-250	1	3.4		
251-500	124	42		
501-1000	104	35.3	809.97	0-3500
1001-1500	25	8.5		
>1500	31	10.5		

Table 3. Individual findings and responses from the respondents

Theme	*Risk factors*	*Findings*	*Anecdote*
Biological	a) Gender	- No specified number that can be distinguished between gender	"No. Girls or boys are not different"
	b) Age	- Common onset is when weaning starts	"Most of the cases start during the transition from milk to solid food"
	c) Birth weight	- Not significant	"Most of the children were born with normal weight"
Behavioural	a) Childcare practice	- Quality of care is not so satisfactory	"Attitude of 'could not care less'"
	b) Health practice	- modern medical treatment is preferred	"Most of the parents will send their child to the clinic for minor illnesses"
	c) Feeding practices	- Less creativity and effort in feeding	"The child will eat based on the convenience of his/her parent"
	d) Maternal factors	- Role of mother is vital	""If the mother has better attitude, regardless of education level and income, the child would have better health status"
	e) Child illness	- The child will lose weight if he/she is always unwell	"If the child often falls sick, it will be difficult to maintain weight."
	f) Food basket	- Food basket is not consumed by the child only	"Food Basket is shared by the whole household"
	g) Birth intervals	- Birth is not planned	"Birth interval is very close. Some mothers do not use any contraceptives at all"
	h) Breastfeeding	- Commonly practiced up to 2 years of age	"Most of the mothers will breastfeed up to 2 years"
	i) Weaning	- Weaning was introduced at the right timing but processed rice cereal is preferred	"Most mothers will provide complementary food when the time was appropriate; but natural rice porridge was not first choice of food given"
	j) Sharing among siblings	- A common practice	"Almost everything is shared"
Environmental	a) Socio-economic status	- Poverty is one of the problems faced by the villagers	"Income per capita is below RM50. Average income per household is RM400 only"
	b) Government support	- *BAKAS* was formed to improve the toilet and water facilities at the village level	"If the toilet or water facilities are not sufficient, the clinic will notify the *BAKAS* unit under the District Health office to help out"
	c) Community infrastructure	- Overall the community infrastructure is good	"Most of the villages are equipped with schools, commu nity hall, and health facilities"
	d) Clinic location	- Clinics are located in the community	"Clinic is located near to most of the households"
	e) Initiative in generating household income	- Overall the initiative of generating extra income is rather poor	"Only a minority will plant vegetables, make craft work or *kueh, kerepek or keropok* to generate income"
	f) Land suitability for planting	- Most of the available land is not suitable for planting or gardening	"Land for planting is not available. Mostly is sand. Distance from house to house is too close for planting"
	g) Sanitation	- Most of the houses are quite clean	"Majority of the houses are properly taken care of"

Behavioral Aspect

Majority of the children were taken care of by his/her own mother but the quality of care was not considered by the health care providers as satisfactory. This was attributed partly to the families having many children to take care of. Most of the mothers prepared food for their family members at the same time. No special preparation was made for the affected child, who thus had to eat the same food as other family members. As a result, the food might not be suitable for the malnourished child, as the food may be too spicy or unappealing to the child. It is a common practice for all to share food in the Malay community.

Some parents leave the responsibility of feeding the malnourished child to older siblings. Other unsatisfactory factors reported by the health care providers included the observation that meal times were not regular and depended on the convenience of the mother. Also, the child may be given unhealthy foods, such as crackers, and sweets before meal times. The child may be fed while he/she was busy playing. However, there were some mothers who would make the extra effort to prepare food separately and feed the malnourished child themselves.

In terms of health practices, most of the mothers send their children to the nearest clinics/hospital for treatment. Traditional medicine man (*bomoh*) was not a preferred choice of treatment. Complaints of common illnesses like fever, sore throat and flu were the main reports made at the clinics.

The Food Baskets were provided monthly to those families with malnourished children. The basic food items in the Food Basket include rice, wheat flour, anchovies, green gram, cooking oil, biscuits, full-cream milk and eggs. The procedure requires the mother to bring the malnourished child for assessment before the Food Basket is given. The main objective of providing the Food Basket is to supplement food intake of the child. However, the items in the Food Basket are usually shared among the family members. There were cases when the mothers sold the items for money, and the reasons given being that they did not know how to use the items, especially wheat flour and green gram.

Most the malnourished cases came from a large family with close birth intervals. Birth interval plays an important role in making sure the mothers are healthy enough to conceive the next child. Furthermore, it will also allow the mother to take care of the existing children better.

Breastfeeding was well accepted in the community. Most mothers breastfed their children up to 2 years old. Sometimes the process was prolonged when introduction of complementary food was delayed. Bottle feeding was preferred compared to breastfeeding among some of the mothers because they considered it as being more convenient. As for complementary foods, processed rice cereal was introduced before rice porridge.

Environmental Aspects

Poverty is often the underlying issue in most of the malnutrition cases. When the income is low, the family cannot provide sufficient food for the members. However, support in the form of cash is available under the "zakat" or through the school for helping out in buying school uniforms and stationeries. BAKAS (Water Supply and Environmental Sanitation Programme) was formed to improve those households with poor toilet and water facilities. BAKAS assistance is provided under the District Health office. Overall, community infrastructure is satisfactory with sufficient number of schools, community halls, kindergartens and health facilities. In some areas, electricity and water supply are still unavailable. Rubbish collection is carried out regularly by the local council in most of the areas.

DISCUSSION

The most prominent finding from the study is the perceived importance of the role of mothers/caregivers in improving the health of malnourished children. Numerous activities have been undertaken at the clinic settings to assist mothers to better understand the importance of nurturing and creating the most conducive environment for their children. However, the outcomes were often poor. This finding was based on the perception of the health workers and therefore, may be biased. A study done by Puoane *et al.* (2006) showed that nurses tend to assume that caregivers had been negligent and that malnutrition was a direct consequence of this neglect.

A total of RM6.1 million was spent to help 5,186 children across the country in the year 2000 (MOH, 2000). Most of the funds were spent in the form of supplementary feeding, Food Baskets and food assistance. A study was conducted in 2002 to evaluate the Food Basket Programme. The report showed that several weaknesses were found, such as the delay in the delivery and unsuitability of food items, being inadequate in calcium and iron (MOH, 2005).

Some past studies on malnutrition might not have accorded sufficient importance on the influence of socio-cultural issues when designing the appropriate tools for assessment, and intervention programmes (Nandi, 2000). Increasingly more researchers have included the use of qualitative research approach in addressing the roles of socio-cultural factors in malnutrition in children. Many researchers have integrated "*emic*" beliefs and practices in the design and implementation of interventions. If the mothers could not appreciate the health education conducted at the clinics, or the food items in the Food Basket, it may be due to lack of nutrition knowledge. Understanding mothers' perceptions and attitude towards food, nutrition and health is essential for the health care providers. Study by Tchibindat et al (2004) showed that most interventions tend to focus on educating mothers and getting them to share the viewpoints of health workers, but did not place sufficient emphasis on the importance of communication skills of both the health workers and mothers. As a result, many health intervention efforts failed to bring about satisfactory results.

Based on the feedback from the health workers, the childcare practices by most of the mothers were only moderately satisfactory. Most of the malnourished children were not given special attention at home. For example, their food was not prepared specially for their condition. Perhaps the mothers could not afford to prepare separate meals for the malnourished child.

Based on feedback from the health workers, the clinics have conducted cooking sessions to educate the mothers on how to prepare food items in the Food Basket, in order to overcome the problem of food items not being used or sold for money. However, the response has not been overwhelming and only a minority of the mothers practised what was taught.

Many of the families involved were from low socio-economical background. The Welfare Department provides a monthly allowance of RM50 to each person from very poor families. This amount is not enough to feed the entire family over a month. Many of the mothers were full-time housewives and did not generate any additional income. The responsibility of earning money for the family was left to their husbands. Past studies have shown that while mothers generate more income for the family to purchase more food, there were negative effects in terms of lost time for child care resulting in less breastfeeding and decreasing child nutritional status (Buvinic, 1990). Even when mothers participated in the job market, they were still needed to carry out housework. Factors

like amount of time spent at work, the conditions under employment, control of income generated, and the quality and cost of childcare affect the well-being of the women and their children (UNICEF, 2007).

As a conclusion, using qualitative methodology provided information that can be used as a basis for designing quantitative questionnaires in assessing malnutrition among children. The induction characteristic of qualitative methods was used to gain understanding of the underlying reasons or phenomena such as behaviours that are directly observable. This approach will also help to produce and evaluate the quantitative instruments and methods that would provide data on how causes of malnutrition among children can be determined. Within this context, a more in-depth understanding of the influence of cultural and beliefs on behaviours towards malnutrition can be obtained (Mullens, 1996). This process further strengthens the validation of quantitative questionnaires that are used later in a bigger population.

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