

A Qualitative Study on Coping Strategies among Women from Food Insecurity Households in Selangor and Negeri Sembilan

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ABSTRACT

Understanding the experiences of household food insecurity is essential for better measurement and assessment of its nutritional, physical and psychological consequences. This qualitative study explored coping strategies and their perceived severity in relation to household food insecurity. Women (n=57; 20-50 years old) from rural and urban areas in Selangor and Negeri Sembilan participated in this study. These women were interviewed using a semi-structured questionnaire. The questionnaire was divided into two parts, that is, demographic and socio-economic information and women's experiences of coping with household food insecurity. Women were chosen since they were primarily responsible for food acquisition and preparation for all household members. Thematic analysis was utilised in data analysis. Thematic analysis is a method for identifying, analysing and reporting patterns and themes of the qualitative data. Themes capture something important related to the study objectives and describe an integrating as well as relational idea from the data. Results showed that households displayed a variety of non-food related coping strategies and food-related coping strategies. Women's descriptions of non-food related coping strategies to food insecurity were categorised into five themes i.e. cloth purchasing behaviors, reduce school-going children's expenditure, delay the payment of bills, adjust lifestyle and increase cash and income earning. Food-related coping strategies were categorised into four themes i.e. food stretching, food rationing, food seeking and food anxiety. Food stretching is a strategy of food insecurity that affects the quality of diet. Food rationing comprises coping strategies of food insecurity related to the quantity of food available for household's consumption. Food seeking is a strategy of acquiring food through socially unacceptable ways and food anxiety is a strategy that indicates households allocating money to buy staple food in order to prevent food insecurity. Each coping strategy showed a different level of perceived severity, that is, less severe, quite severe, severe and very severe. In conclusion, the qualitative data provide valuable information for understanding the experiences of food insecurity that can be used as a basis to develop direct indicators that can capture the core behaviours and their level of severity to measure household food insecurity.

Keywords: Coping strategies, food insecurity households, women

INTRODUCTION

The World Bank (1986) defines food security as access to enough food for all people for an active and healthy life. Household food insecurity occurs when food is not available or cannot be accessed with certainty in terms of quality, quantity, safety and culturally acceptable ways (United Nations, 1991). Food insecurity is a phenomenon that occurs not only in developing countries but also in developed countries and is recognised as a major public health concern. The Parliamentary Office of Science and Technology (2006) in the United Kingdom estimated that 820 million people in the developing countries suffer from hunger and food insecurity. A few studies in Malaysia have also reported that food insecurity among samples of urban low-income and rural households were 67.0% and 58.0%, respectively (Zalilah & Khor, 2004; Zalilah & Ang, 2001).

Households at risk of food insecurity will plan strategically to minimise its impact. Several qualitative studies have reported the experiences of low-income families coping with food insecurity and famine (Corbett, 1988; Radimer, Olson & Campbell, 1990; Radimer *et al.*, 1992; Mardiharini, 2005). Kempson *et al.* (2003) identified multiple coping strategies applied by limited-resource individuals such as participating in federal and locally food programmes (i.e. food stamps, church dinners), exchanging resources (i.e. sell surplus food, sell food stamps for money), managing personal resources (i.e. budget, systematic payment of bills), having support system (i.e. borrow food or money, cook with other people, trust in God, identify someone to live with), increasing income (i.e. sell or pawn items, begging, gamble, sell one's blood), decreasing expenses (i.e. gardening), relocating to increase income and decrease expenses (i.e. have better employment opportunities, live in inexpensive housing) and shopping for low-cost and value foods (i.e. expired food, bulk food, items covered

by coupons). Several studies have also reported the stages of severity for coping strategies of household food insecurity (Corbett, 1988; Kabeer, 1990; Maxwell, 1996).

A valid measure of food insecurity requires well-grounded construction (Frongillo, 1999). Understanding food insecurity through an in-depth investigation of individual experiences can provide an insight into the various coping strategies and its severity to manage food insecurity. Several studies have reported the themes of coping strategies in relation to household food insecurity in the United States (i.e. food quantity, food quality, psychological and social) (Radimer *et al.*, 1992, Quandt *et al.*, 2006), Indonesia and Bangladesh (i.e. decreasing food quality and quantity) (Studdert, Frongillo & Valois, 2001; Frongillo *et al.*, 2003). This understanding was used successfully to develop direct indicators of food insecurity such as Coping Strategy Index (CSI) (Maxwell, 1996; Maxwell *et al.*, 1999), Food Sufficiency Status Questions (Briefel & Wateki 1992), Community Childhood Hunger Identification Project (CCHIP) Instrument (Wehler, Schott & Anderson, 1992), Radimer/Cornell Hunger and Food Insecurity Instrument (Radimer, 1990; Radimer *et al.*, 1992) and Food Security Core Module (FSCM) (Bickel, Andrews & Klein, 1996). Direct indicators can capture the core behaviours and experiences that characterise household food insecurity and recognise the level of severity (Frongillo & Nanama, 2006; ONPP, 2002).

Currently in Malaysia, valid direct indicators of household food insecurity, which are culturally specific to the population, are not readily available. Thus, the purpose of this study was to identify coping strategies to food insecurity based on experiences of women from low-income households. Specifically, the paper will identify the themes and the severity of coping strategies in order to develop a preliminary direct indicators of food insecurity.

METHODOLOGY

Study background

Kampung Merbau Berdarah in the District of Sabak Bernam, Selangor, the District of Gombak, Selangor and Labu Estate in Negeri Sembilan were purposively selected for this study. All the Malay households in *Kampung Merbau Berdarah* were under the Hardcore Poor Development Programme (PPRT) by *Yayasan Basmi Kemiskinan* (YBK). The District of Gombak, Selangor was also purposively selected due to the highest percentage of Malay and Indian households receiving financial assistance from the Selangor Welfare Office (The Welfare Department of Selangor Report, 2005). Indian households in Labu Estate were identified based on pre-determined research on the household food security that indicated household food insecurity, individual food insecurity and child hunger.

Study respondents

Several agencies that provided food or financial assistance to low-income households in the selected urban and rural study areas were contacted to assist in identifying potential respondents. The key informants (i.e. village head, welfare officer) provided the list of recipients of food or financial assistance from the Department of Welfare, *Yayasan Basmi Kemiskinan Selangor*, *Lembaga Zakat Selangor* and *Amanah Ikhtiar Malaysia*. The key informants contacted respondents receiving financial assistance to arrange for a meeting with the researcher at the Welfare Office or their homes.

Respondents were women of childbearing age (18 and 50 years old) with children, non-pregnant and non-lactating having experienced household food insecurity. Women were chosen because they were primarily responsible for food acquisition and preparation in the households (Quisumbing *et al.*, 1995). In this study, 15 rural Malay women, 13 rural

Indian women, 15 urban Malay women and 14 urban Indian women (total = 57) were interviewed and this number was deemed to be adequate to reflect the experiences of different ethnic groups and locations.

Data collection procedures

Ethical approval to conduct the study was obtained from the Ethics Committee of the Faculty of Medicine and Health Sciences, Universiti Putra Malaysia. Permission was also obtained from the Welfare Department of Malaysia, Welfare Department of Selangor, the Guthrie Group Head Quarters (*Kumpulan Guthrie Berhad*) and *Yayasan Basmi Kemiskinan Selangor*. Permission was obtained from each woman to record and take notes during the interview session. Incentives were given to the respondents at the end of the interview sessions for their contribution in providing information on the coping strategies of household food insecurity.

A semi-structured questionnaire divided into two parts was utilised to collect qualitative data. The first part focused on demographic and socio-economic information of the respondents such as household size, number of children, number of schoolgoing children, marital status, employment, education level and household income. The second part was on information pertaining to the respondent's experiences of coping strategies with household food insecurity. The respondents were also requested to rate each coping strategy as less severe, quite severe, severe and very severe.

All the respondents were interviewed on a one-to-one basis in the Malay language by the researcher. All interview sessions were tape recorded and notes were taken to complement the recording. To facilitate interviews with Indian informants, an Indian research assistant was present to translate the question and respond to Tamil and Malay language, respectively. The research assistant helped the researcher to take notes

Table 1. Semi-structured questionnaire guide

<i>Item</i>	<i>Questions</i>
1.	Based on your experiences, what do you do when your household does not have enough food or money to buy food?
2.	Could you please arrange the strategies according to their severity level from least severe to very severe strategies? What strategies have been taken simultaneously?
3.	How often does your household rely on these strategies? Weeks/Months/ Years
4.	When does your household not have enough food or money to buy food? End of the month/end of the year/festival month?
5.	What are the factors that contribute to your household not having enough food or money to buy food?
6.	“If there is limited food or resources in your household...” a. How do you manage if this situation occurs in your household?

during the interviews. A semi-structured questionnaire guide was developed by the researcher to ensure consistency in the responses given by the respondents while allowing flexibility to share experiences of food insecurity (Table 1).

Data analysis

Thematic analysis (Aronson, 1994) was used to analysis the qualitative data. Thematic analysis is a method for identifying, analysing and reporting patterns and themes of living and/or behaviour (Braun & Clarke, 2006; Aronson, 1994). The interviews were transcribed verbatim and notes were used to complement the transcription. Approximately 600 pages of text were generated from the 57 women. Data transcription is an excellent way to be familiar with the data and to identify possible themes (Riessman, 1993). This is a key step in the analysis of qualitative data.

All the data that fits under the specific pattern is identified and placed with the corresponding pattern. The data were coded manually using highlighters and colored

pens to indicate possible patterns. Codes refer to the most basic segment of the raw data that is organised into meaningful groups. Then, the researcher copied the possible pattern of coded data from individual transcripts collated in separate computer files. Themes are identified as units derived from the patterns. Themes capture something important about the data in relation to the study objectives and describe an integrating, relational idea from the data (Braun & Clarke, 2006; Richards, 2005). Sub-themes were determined as sub-units illuminating the themes. Gathering sub-themes can result in a comprehensive view of the information and allow for viewing a emerging pattern. Subsequently, the codes, themes and sub-themes were reviewed and refined. This step is crucial in the analyses as it allows for identifying the relationship between the pattern of codes, themes and sub-themes (Braun & Clarke, 2006). The data within the themes must fit together meaningfully and there should be identifiable distinctions between the themes.

RESULTS

Demographic and socio-economic characteristics

A total of 57 women (30 Malay and 27 Indian) from rural and urban areas participated in the in-depth interviews (Table 2). The mean age of the women was 40.9 ± 5.1 years. Approximately 60.0% of the households had 6-10 family members and the mean household size was 6.9 ± 2.0 . The mean number of children and school-going children were 4.6 ± 2.2 and 3.2 ± 2.0 , respectively.

A high proportion of the women (86.0%) had no formal schooling, attended primary or lower secondary school and the mean year of schooling was 5.8 ± 3.9 . Approximately 47.4% of the households were considered poor based on the poverty line income of RM691. The mean monthly household income was $RM755.1 \pm 366.5$. Based on income per capita, approximately 29.8% and 36.8% of the households were considered hard-core poor (< RM 93) and poor (RM 93 – RM 155), respectively. Only 33.3% of the households had an income per capita of more than RM155.

Non-food related coping strategies and their perceived severity

The respondents described 15 non-food related coping strategies to prevent or delay food insecurity for all household members. Non-food related coping strategies can be categorised into five themes, that is, clothes purchasing behaviours, reduce school-going children's expenditure, delay payment of bills, adjust life style, increase cash and income earning (Mardiharini, 2005). Table 3 illustrates the examples of individual findings for the non-food related coping strategies and their perceived severity.

Changes in clothes purchasing behaviour theme are strategies to ensure sufficient money for food. The respondents reported buying clothes only for their children but not for themselves, receiving

second-hand or new clothes from other individuals and organisations (i.e. *Lembaga Zakat Selangor*, churches) and buying less expensive clothes or buying clothes on credit. These strategies were perceived by respondents as less severe coping strategies. Reduction in school-going children's expenditure theme comprised strategies such as reducing pocket money and not giving any pocket money to children. The respondents reported these coping strategies as quite severe.

Delay in payment of bills theme is related to late payment of electricity, telephone or water bills, that is, delaying the payment until the receipt of warning letters or termination of services and delaying payment of house rent. Delaying payment of house rent and payment of bills until receipt of warning letter or termination of services were perceived as quite severe and very severe coping strategies, respectively.

Adjusting life style include being thrifty, planning for expenditure, buying less expensive products or shopping at cheaper places, not attending or not giving gifts during parties or festivals and requesting money from relatives or friends during financial difficulty. The respondents employed these strategies to ensure that money for food would last until the next salary or avoid relying on food-related coping strategies. The respondents considered requesting money from relatives or friends as either a less severe or quite severe coping strategy. Other strategies were perceived as less severe coping strategies. Increasing cash and income constituted strategies such as engaging in odd jobs and selling or pawning own assets to get cash. The respondents perceived engaging in odd jobs and selling or pawning their assets as less severe and severe coping strategy, respectively.

Among the non-food coping strategies, adjusting their lifestyle, cloth purchasing behaviour and increasing income were often applied first in the effort to minimise the risks

Table 2. Demographic and socio-economic characteristics

Criteria	Malay (Rural) N=15(%)	Malay (Urban) n=15(%)	Indian (Estate) n=13(%)	Indian (Urban) n=14(%)	Total n=57(%)
Age (years)					
20 - 29	0 (0.0)	0 (0.0)	1 (7.7)	0 (0.0)	1 (1.8)
30 - 39	6 (40.0)	7 (46.7)	2 (15.4)	7 (50.0)	22 (38.6)
40 - 50	9 (60.0)	8 (53.3)	10 (76.9)	7 (50.0)	34 (59.6)
Mean ± SD	41.27 ± 5.30	40.93 ± 4.91	42.31 ± 5.45	39.14 ± 4.59	40.89 ± 5.056
Household size					
1-5	4 (26.7)	5 (33.3)	6 (46.2)	6 (42.9)	21 (36.8)
6-10	11 (73.3)	8 (53.3)	7 (53.8)	8 (57.1)	34 (59.6)
≥11	0 (0.0)	2 (13.3)	0 (0.0)	0 (0.0)	2 (3.5)
Mean ± SD	6.33 ± 2.02	6.87 ± 2.90	5.85 ± 1.46	5.57 ± 1.16	6.18 ± 2.04
Number of children					
1 - 2	0 (0.0)	4 (26.7)	0 (0.0)	3 (21.4)	7 (12.3)
3 - 4	5 (66.7)	4 (26.7)	10 (76.9)	7 (50.0)	26 (45.6)
≥ 5	10 (66.7)	7 (46.7)	3 (23.1)	4 (28.6)	24 (42.1)
Mean ± SD	5.80 ± 2.21	4.87 ± 2.83	4.15 ± 1.46	3.57 ± 1.28	4.63 ± 2.19
Number of schooling children					
0	2 (13.3)	2 (13.3)	0 (0.0)	0 (0.0)	4 (7.0)
1 - 2	2 (13.3)	3 (20.0)	8 (61.5)	6 (42.9)	19 (33.3)
3 - 4	6 (40.0)	5 (33.3)	4 (30.8)	5 (35.7)	20 (35.1)
≥ 5	5 (33.3)	5 (33.3)	1 (7.7)	3 (21.4)	14 (24.6)
Mean ± SD	3.60 ± 2.20	3.67 ± 2.53	2.54 ± 1.33	3.00 ± 1.62	3.23 ± 2.00
Education level (years)					
No formal schooling	5 (33.3)	1 (6.7)	4 (30.8)	3 (21.4)	13 (22.8)
1 - 6	5 (33.3)	4 (26.7)	2 (61.5)	3 (21.4)	20 (35.1)
7 - 9	3 (20.0)	4 (26.7)	1 (7.7)	8 (57.1)	16 (28.1)
10 - 11	2 (13.3)	6 (40.0)	0 (0.0)	0 (0.0)	8 (14.0)
Mean ± SD	4.80 ± 4.26	8.07 ± 3.50	3.69 ± 2.98	6.21 ± 3.56	5.75 ± 3.90

Table 2.continued to next page

Table 2. Continued

Criteria	Malay (Rural) N=15(%)	Malay (Urban) n=15(%)	Indian (Estate) n=13(%)	Indian (Urban) n=14(%)	Total n=57(%)
Financial assistance (monthly)					
Yes	12(80.0)	13(86.6)	3(23.1)	14(100)	42(73.7)
No	3(20.0)	2(13.4)	10(76.9)	0(0.0)	15(26.3)
Financial assistance (yearly)					
Yes	15(100)	6(40.0)	1(7.7)	3(21.4)	25(43.9)
No	0(0)	9(60.0)	12(92.3)	11(78.6)	32(56.1)
Food assistance					
Yes	9(60.0)	5(33.4)	9(69.2)	7(50.0)	31(54.4)
No	6(40.0)	10(66.6)	4(30.8)	7(50.0)	26(45.6)
Household income (RM)*					
< 691	9(60.0)	8(53.3)	3(23.1)	7(50.0)	27(47.4)
≥ 691	6(40.0)	7(46.7)	10(76.9)	7(50.0)	30(52.6)
Mean ± SD	781.73 ± 512.77	706.53 ± 376.25	817.16 ± 279.56	721.07 ± 249.32	755.13 ± 366.48
Income per capita (RM)**					
< 93 (Hard-core poor)	6(40.0)	5(33.3)	4(30.8)	2(14.3)	17(29.8)
93-155 (poor)	5(33.3)	6(40.0)	4(30.8)	6(42.9)	21(36.8)
> 155	4(26.7)	4(26.7)	5(38.5)	6(42.9)	19(33.3)
Mean ± SD	145.55 ± 133.41	116.21 ± 61.65	147.14 ± 63.13	133.37 ± 45.96	135.20 ± 45.96

* Official poverty line in Malaysia (Ninth Malaysia Plan, 2006)

** Cut-off point for income per capita in Malaysia is RM 93 (Ninth Malaysia Plan, 2006)

Table 3. Individual examples and responses of cloth purchasing behaviours, reduce schoolgoing children's expenditures, delay payment of bills, adjust life style, increase cash and income earning and perceived severity of the sub-themes

Coping strategies	Severity	Examples of responses
Clothes purchasing behaviours Buying new clothes for children but not for mother	Less severe	"Yes, we always buy clothes for our children, my husband and I don't mind about this matter, it's alright for us not having any new clothes."
Buying less expensive clothes or buying clothes on credit	Less severe	"Although the clothes were cheaper...as long as they could give extra clothes...that was very common thing to us."
Receiving clothes from individuals or agencies	Quite severe	"People always give to us...even for the hari raya.....if I want to buy...I won't...so hard."
Adjust schoolgoing children's expenditure Children not bringing money to school	Severe	"My child who is studying in the secondary school, everyday she doesn't have money...I don't have money to give her, she can eat when she comes home."
Decreasing pocket money	Quite severe	"I don't have much money, so I have to decrease the amount for school pocket money from RM2.00 to RM1.00...I give them food at home...I give RM1.00."
Delay the payment of bills Delaying the payment of bills	Quite severe	"... I had to postpone the payment of electricity bill for two months...very hard at that time."
	Severe	"Not much money...so hard...we had to pay the electricity bill after two months...three months."
Delaying the payment of bills until they received warning letters or the supplies were terminated	Very severe	"We indeed postponed the payment...always postponed until the authorities cut-off the supply...the most awful situation ..."
Delaying the payment of house rental	Quite severe	"The next month will be hard for money...so I'll pay every two months'
	Severe	"This month was very hard for me; I paid in a small amount for 3 to 4 times, RM150 for school nowadays is very hard...."

Table 4. continued to next page

Table 3. Continued

Coping strategies	Severity	Examples of responses
Adjust life style		
Being thrifty in using money	Less severe	"The first thing we must save our budget, as we always did before"
Planning for expenditure	Less severe	" ..based on our needs, we must plan for the household expense early in the month..."
Buying less expensive products or shopping at cheaper places	Less severe	'That grocery store sells goods at cheaper prices...I always buy things there.'
Not attending or giving gifts during parties or festivals	Quite severe	"I had not always gone for feasts, unless I had money...if not I won't go..."
Requesting money from relatives or friends	Severe	"If I have problem with money, I'll ask...so hard at that time."
Increase cash and income earning		
Engaging in odd jobs	Less severe	"Whether I have money or not, I really do that job...to make box..."
Selling or pawning assets (jewelleries)	Severe	"...if the situation becomes worse, I'll sell my jewelleries...the important thing is my children's education."

of food insecurity. If the risks of food insecurity became worse, the households might reduce the expenditure allocated for their schoolgoing children and increase cash to minimise the risks and diversify their income. Delaying payment of bills in order to ensure that the money for food was enough until they received the next salary or wages, signaled that the food insecurity had even worsened further.

Food-related coping strategies and their perceived severity

There were 12 food-related coping strategies identified as practised by the respondents for their families. Food-related coping strategies involved immediate or short-term alteration of the consumption patterns. Food-related coping strategies were categorised into four themes i.e., food stretching, food rationing food seeking and food anxiety (Radimer *et al.*, 1992; Wolfe *et al.*, 2003; Quandt *et al.*, 2006). Table 4 illustrates the examples of individual findings for the food-related coping strategies with their perceived severity.

First, the food stretching theme comprises two coping strategies that are related to quality of diet. The respondents described the use of less expensive food for household members such as eggs, canned sardines, dried anchovies in chili, small cheaper fish, salted fish, mee-hoon and curry as compared to meat, chicken and fruit that were more expensive food. The respondents also reported the use of less preferred food for household members which included rice porridge, salt and oil, shrimp paste, soya sauce, tapioca, bananas, instant noodles and flour (*cokodok*, *lempeng* and *capati*). They reported that using less expensive food and less preferred food as less severe (i.e. buy and eat less expensive food) and severe coping strategies (i.e. eat a nutritionally inadequate diet).

Second, the food rationing theme comprised strategies related to the quantity of food available for the household's

consumption. The respondents utilised strategies such as reducing the portion or size of food or the number of dishes for meals, favouring certain household members (i.e. mother and father), reducing the number of meals eaten in a day and skipping meals for the whole day. Reducing the portion size of food or the number of dishes for meals and favouring certain household members were perceived as less severe or quite severe coping strategies. Less severe and quite severe coping strategies are indicative of food depletion in the home. While reducing the number of meals eaten in a day was considered as severe coping strategy, skipping meals for the whole day was seen as very severe coping strategy. The severe coping strategy level involves having to eat less food than usual or insufficient food intake. Very severe coping strategy involves actual hunger as it means going without food for one or more days.

Third, food seeking theme consisted of strategies so to acquire food through socially unacceptable ways as to increase house food supply. The respondents reported consuming whatever food available around the house such as home-grown vegetables and gathering wild plants, purchasing food on credit, borrowing money from employers, friends, neighbours and siblings to buy food, sending children to the homes of family members, relatives and neighbours to have a meal and receiving food assistance from families, friends, neighbours and requesting financial and food assistance from *Lembaga Zakat Selangor* or other religious organisations. The respondents perceived consuming food available around the house and receiving food assistance as less severe strategy and purchasing food on credit as either quite severe or severe coping strategy. Severe coping strategies included borrowing money to buy food and sending children to other places for meals, respectively. Fourth, the food anxiety theme indicates households allocating some money to buy staple or less preferred food to prevent food insecurity.

Table 4. Individual examples and responses of food stretching, food seeking, food rationing and food psychology and the perceived severity of the sub-themes

Coping strategies	Severity	Examples of responses
Food stretching Using less expensive food	Less severe	"... we get the salary we can eat delicious food once in a month. Until this moment, insya-Allah, we get enough food, we never didn't have food, after that we cooked fried rice, and also eggs"
Using less preferred food	Severe	"Sometimes I only have rice with soy sauce because nothing else left...but still can eat..."
Food seeking Consuming whatever food is available around the house	Less severe	"Find some food that we don't have to buy, for vegetables we search tapioca shoot...kangkung which can be found at the paddy fields, there is a lot of them... don't have to use money...much easier."
Purchasing food on credit	Quite severe	"It was very hard for me to take, didn't know how to pay, that shopkeeper would sound off to me about that. When I didn't have money I had to purchase food on credit...I felt awful about that"
Borrowing money to buy food from the employer/ friends/ neighbours/ siblings	Severe	"So I borrowed some money from friends first, if the situation become worse then I'll buy food on credit from the shop"
Receiving food assistance from agencies/ neighbours/ siblings/ individuals/ employer	Quite severe	"If I didn't have enough money I would ask for money from my younger sister/brother, he/she could help me...he/she was a lawyer and also from the money/lender...he was very kind to me"
Sending children to mother/ sibling/ neighbours	Severe	"With my neighbors also when I had to buy something necessary at that time...they were very understanding"
	Less severe	".. we had place to ask for help...food from sister, neighbours...these are very common things."
	Severe	"I sent them to my sister's house to eat, Saturdays and Sundays..."

Table 3. continued to next page

Table 4. Continued

Coping strategies	Severity	Examples of responses
Food Rationing Cutting portion or size of or the number of dishes for meals	Less severe	"Only eat one meal because I felt that if I cooked two meals...the other meal can be eaten on the next day."
	Quite severe	"I bought vegetables in a small quantity like I said to my children to eat just a little...because I don't have enough money...so they must remember that."
Skipping meals for the whole day	Very severe	"...in a month, we have to skip meals for the whole day about four times...while waiting for the expenditure...it was so hard at that moment when we couldn't eat...couldn't do anything.."
Favouring certain household members over the others	Quite severe	"To me, I and my husband were willing not to eat, let our children eat, it was alright to us."
	Severe	"Let my children eat first, then we ate the left food...not much food...that was a very serious situation..."
Reducing the number of meals eaten in a day	Quite severe	"We had food for dinner, in the mornings my children didn't eat, at school they got the meal program, ate dinner only...not much rice..."
	Severe	"we ever had just a dinner...we didn't have lunch...that was very awful because we didn't have money"
Food Anxiety Allocating some money to buy staple or less preferred food	Less severe	"If I have money. first... I will allocate money to buy rice, less preferred food..."

This strategy was deemed as less severe coping strategy.

When food diminishes in a household, food anxiety and food seeking through socially unacceptable ways might occur first, followed by compromises in quality of food intake in order to delay the depletion of household food. If food insecurity worsened even further, food rationing would be applied and this could lead to insufficient food intake. The quantity of food intake would be preserved at the expense of quality of food which worsened, but children were protected from this negotiation. In other words, the four themes of food-related coping strategies indicated the dimensions of severity. The households might experience any or all dimensions simultaneously at different levels of severity.

DISCUSSION

The food and non-food related coping strategies identified in this study are consistent with findings of several previous studies (Zalilah & Khor, 2008; Kempson *et al.*, 2003; Maxwell, 1996). The non-food related coping strategies (long-term strategies) focused on management of income and expenditure, and emphasised the flow of income and expenditures in a manner to ensure the well-being of the household (Brink, 2001). The strategies can be seen as expression of negotiated decisions to minimise the impact of food insecurity in the households. The five themes related to non-food related coping strategies identified in this study were similar to those reported in Indonesia (i.e. decreasing non-food expenditure, increasing income and cash, borrowing from others) (Mardiharini, 2005), Philippines (i.e. adjustment in purchasing clothes, decreasing school allowances, postponement of bills payment and engagement in odd jobs) (Castaneda *et al.*, 2000) and the United States (i.e. systematic payment of bills, increasing income, relocating income and decreasing expenses)

(Kempson *et al.*, 2003). However, the themes identified in this study for non-food coping strategies were different from those communities living in the arid and semi-arid lands (Kabeer, 1990; Shimelis & Bogale, 2007). The difference in environmental and economic situations could be a possible explanation for the different strategies utilised in management of income and the expenditure.

Food-related coping strategies are emergency responses or immediate alterations in consumption pattern to delay or prevent food insecurity in the households (Maxwell, 1996; Maxwell *et al.*, 1999). Four themes of food related coping strategies were similar to the strategies reported by other studies such as in Indonesia (i.e., food quality and quantity) (Studdert *et al.*, 2001), the United States (i.e. food quality and quantity, psychological and social aspects of food insecurity) (Radimer *et al.*, 1992; Quandt *et al.*, 2006) and Bangladesh (i.e., food quality and quantity aspects) (Frongillo *et al.*, 2003). Psychological and social aspects of food insecurity did not emerge in studies conducted in Indonesia and Bangladesh which could be explained by the women's reluctance to express their feelings and emotions in relation to food insecurity or these two aspects were not distinctive parts of their household food insecurity experiences (Coates *et al.*, 2006; Frongillo *et al.*, 2003). These results are also supported by numerous studies, in developed and developing countries, which found that in the prevalence of food insecurity, quality is often experienced first, followed by food quantity (Radimer *et al.*, 1990; Radimer *et al.*, 1992; Maxwell, 1996; Studdert *et al.*, 2001; Frongillo *et al.*, 2003; Quandt *et al.*, 2006).

The food insecurity experience of respondents portrayed that food insecurity is a manageable process. These respondents reported that they had some control over the sequence of coping strategies to cope with food insecurity. Even though food insecurity is managed differently by various

households, there is a general sequencing of the experiences of food insecurity portrayed by the respondents. Basically, the managed process of food insecurity portrayed by the respondents was that non-food related coping strategies came first before food related coping strategies.

Conversely, Corbett (1988) had reported a simultaneous sequence between food and non-food related coping strategies to indicate managed process of food insecurity in communities living in arid and semi-arid lands. When food lessens or income decrease, adaptations employed could be diet change (i.e. reducing the number of meals per day, engaging in odd jobs, and borrowing from relatives). If the food shortage became worse, more drastic coping strategies would be implemented such as selling or pawning assets (jewelleries), temporarily migrating for work or skipping meals for the whole day. The coping strategies which involve selling of land, animals and other productive assets indicated that the food insecurity had worsened even further. The final stage was destitution which involved permanent migration.

In Bangladesh, women's hunger experiences also revealed a managed process of coping strategies (Kabeer, 1990). The women were indicated to cut down on the number of meals taken per day, postpone their expenditure on health, as well as gather wild foods and roots. After that, adjustment employed by non-earning members in the household such as women, children and the elderly are drawn into employment when the recourses lessened. This was followed by households beginning to sell off their assets, which was started off with consumer inventories, but inevitably productive assets as well later. The coping strategies also involved the breakdown of the family unit after food shortage became worse. The men are the first to migrate for the moment to other locations with food, employment and to minimise abandoning the family unit.

Finally, the mothers may abandon their children or leave them in orphanages.

CONCLUSIONS

Rigorous interviews were conducted to gain an understanding of various coping strategies in household food insecurity. The respondents reported two groups of coping strategies in response to household food insecurity, that is, non-food and food-related coping strategies. Each coping strategy showed a different level of severity. There is an identifiable sequencing of the non-food and food-related coping strategies that indicate food insecurity is a managed process. Hence, understanding these food insecurity coping strategies will be a good starting point to develop and formulate systematically robust and contextually sensitive direct indicators to measure household food insecurity.

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