

Coping Strategies Adopted by Households to Prevent Food Insecurity in Urban Slums of Delhi, India

Palak Gupta^{1,*}, Kalyani Singh¹, Veenu Seth¹, Sidharth Agarwal², Pulkit Mathur¹

¹Department of Food and Nutrition, Lady Irwin College, University of Delhi, New Delhi, India

²Urban Health Resource Center, New Delhi, India

*Corresponding author: palgupta87@gmail.com

Received January 17, 2015; Revised January 30, 2015; Accepted February 13, 2015

Abstract Background: The study tried to identify coping strategies adopted by urban slum dwellers to prevent the situation of food insecurity. **Methods:** A household-based cross-sectional study on a sample of 446 households was conducted. Structured interview schedule was used to collect data on coping strategies along with group discussions. Standard univariate analysis was done using SPSS (version-16). **Results:** Unique coping strategies were found to be adopted by households. Strategies included relying on less expensive foods like seasonal or locally available vegetables, limiting portion size of meals and reducing numbers of meals eaten in a day. To increase short-term availability of food, households borrowed food or lend money from friends or relatives, bought food on credit from private grocery shops, used reserves, and relied on food aid. Households ate at religious places in an attempt to increase access to food, withdrew children from school to save money on the school fees and also sent children to work. In case of extreme insecurity, migration was observed. **Conclusions:** Coping strategies used by the households can be seen as an expression of negotiated decisions to minimize the impact of food insecurity in the households. Hence, understanding these food insecurity coping strategies could be a good starting point to develop and formulate community based contextually sensitive interventions to improve household food insecurity.

Keywords: coping strategies, household food insecurity, India, urban slums

Cite This Article: Palak Gupta, Kalyani Singh, Veenu Seth, Sidharth Agarwal, and Pulkit Mathur, "Coping Strategies Adopted by Households to Prevent Food Insecurity in Urban Slums of Delhi, India." *Journal of Food Security*, vol. 3, no. 1 (2015): 6-10. doi: 10.12691/jfs-3-1-2.

1. Introduction

Household food insecurity (HFI) occurs when food is not available or cannot be accessed with certainty in terms of quality, quantity, safety and in culturally acceptable ways at the level of household [1]. In past, a few studies have been done in India which has reported the prevalence of HFI. Agarwal et al (2009) conducted a study indicating HFI of 51% in urban Delhi [2]. In Coimbatore, Karnataka [3] and Mizoram [4], HFI was found to be 58% and 79.5% respectively. Urban Tamil Nadu had prevalence of HFI as high as 74.6% [5].

Households at risk of food insecurity are known to plan strategically to minimise its impact. Studies have been done worldwide to understand the experiences of households suffering from food insecurity [6,7]. However, literature on coping mechanisms adopted by India's poor households, especially those living in urban slums, is limited. A few studies done in semi-arid and rural India indicated that households, in order to prevent household food insecurity, make changes in the food consumption pattern, diversify income generation activities, sale or mortgage land and household assets, or migrate seasonally [8,9]. Some other coping strategies to combat food insecurity involve the consumption of less preferred food,

limiting the portion size of food, borrowing food or money, and missing of meals for whole days. All the studies above were done in rural parts of India and no information is available on the strategies adopted by the urban households in the food insecure situation.

In this context, an attempt has been made to identify coping strategies adopted by urban slum dwellers to prevent the situation of food insecurity.

2. Methodology

2.1. Study Background

The present research was household-based and cross-sectional. It was conducted in Delhi. Delhi has been divided into 9 administrative districts and four districts were selected randomly to be included in the study. From each district, one slum of moderate to severe vulnerability was selected. Vulnerability assessment was done according to existing reports [10].

2.2. Sample Size

A sample size of 385 was calculated based on prevalence of household food insecurity of 51%. [2]. The margin of error of 5% and 95% confidence was taken, and design effect of one was assumed. For nutrition surveys,

the sample was increased by 5% to account for contingencies such as non-response or recording error. Thus, in the present study, the sample size was inflated to 446 assuming non-response rate of 5% and migration rate of 10%.

2.3. Data Collection

Data was collected over a period of one year, from August 2011 to October 2012 by trained nutrition post-graduate researcher. The respondents were adult females (≥ 18 years) of the household who were involved in cooking and purchasing food and were thus aware of household food insecurity conditions. Households were selected randomly and those which consented to be part of study were included. Entry in the households was facilitated by field volunteers who were residents of the slums and were known by slum dwellers.

2.4. Tools and Techniques

Data was collected through household-based face-to-face interviews using a pre-tested coping strategy interview schedule. Prior to data collection, written consent was taken. They were also informed that their identity would be kept confidential. Coping strategy schedule was created using different sub-themes identified by visiting the community and having discussion with the local community during pre-preparatory stage. The recall period of 30 days was taken. The different themes were identified which tried to capture experiences of the household during the period of food insecurity. The sub-themes of coping strategy schedule were:

1. Dietary changes
2. Rationing strategies
3. Increasing short term household availability of funds
4. Decreasing number of household members
5. Irreversible strategies

2.5. Statistical Analysis

Standard univariate descriptive statistics was conducted using SPSS (version-16).

3. Results

Households used multiple coping strategies to mitigate the effects of food insecurity. The details are given under several sub-themes.

3.1. Dietary Changes

Two out of every three households (63.7%) replied in the affirmation about relying on less preferred and less expensive foods. This included consumption of low grades (or cheaper quality) of wheat, broken rice, and cheap cuts of meat like feet, intestines or upper part of skin (which is usually discarded). Seventy four percent households resorted to locally available or cheaper foods. This included seasonal vegetables or consuming beef over chicken/mutton as it is a cheaper option.

3.2. Rationing Strategies

These strategies had direct impact on the nutritional status and hence well-being of the household members (Figure 1). One in every three families (30.9%) limited portion size of one or more household member during mealtimes. Seventeen percent households reduced numbers of meals eaten in a day. A few households (5.2%) showed extreme measures of food insecurity. They missed eating food for the entire day in situation of extreme food insecurity.

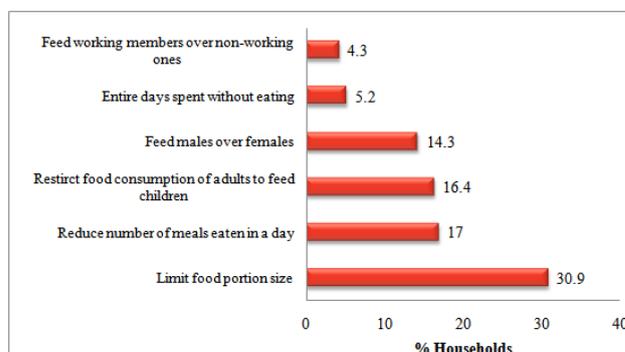


Figure 1. Rationing strategies adopted by households (n=446)

3.3. Increasing Short Term Availability of Food

During acute food insecurity, households many a times, revert to strategies which increase short term funds or resources to procure food. These strategies were mainly positive and did not have an impact on increasing vulnerability of the households. Such strategies are presented in Figure 2.

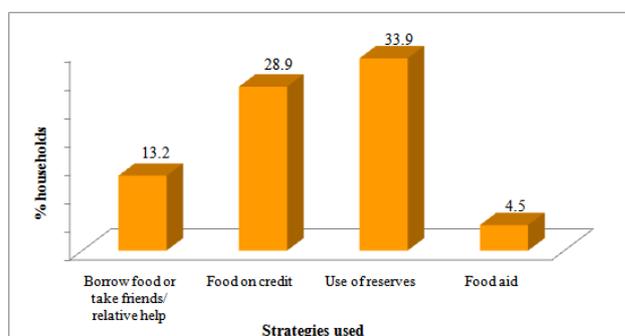


Figure 2. Increasing short term availability of the food (n=446)

To increase short term availability of food or resources, a few households (13.2%) adopted strategies like borrowing food or lending money/ resources from friends or relatives. One out of three households (28.9%) bought food on credit from private grocery shops. As informed by the respondents and community members, grocery shop owners gave food on credit only to the people they knew for a longer duration of time and to those they believed will repay. Thus, the most vulnerable households or the households new to the slum did not get food on credit easily.

Almost one-third of the households (33.9%) reported the use of reserves during the food insecurity. Reserves included money saved by the family for the time of need or food stored by the households to be consumed during the time they could not afford to buy. Only those families which had extended families living in villages, which send

them food from village, had reserves. During observation and discussion, it was brought out that the most vulnerable food insecure households did not have reserves with them.

A few grocery shop owners also collected money from the households on daily, weekly or fortnightly basis (depending on the financial conditions of the family). The households could save money with them and buy food from the saved money during the time of need. The households which did not have a permanent source of income were most likely the ones to get benefit from this scheme. Also, the households who saved money with the shop owners got food on credit easily as the shop owners knew and trust them.

Only 4.5% of the households informed that they relied on food aid in times of food insecurity. Food aid included food from the *anganwadi* (government centres in slum which has one of the function of distributing food)¹ for the children and pregnant mother, ration from Public Distribution System, and mid-day meals for school going children.

3.4. Decreasing the People Present in the Household

Households to cope with the situation of extreme food insecurity, make an attempt to decrease the number of people present in the household. This meant sending some members or complete family to eat elsewhere and in worst situation, migration of one or more family members (Figure 3).

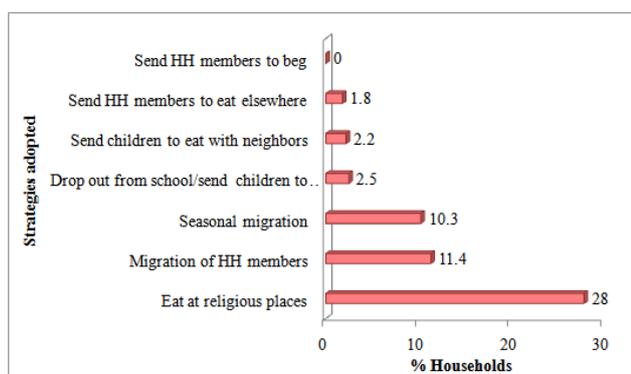


Figure 3. Decreasing the number of people who consume food in the household (n=446)

Households ate at religious places in an attempt to increase access to food. At few places like mosque served food at all times. The households living in the one of the slum reported that they go and consume food at mosque when there was dearth of resources in the family. A few households informed that they visited the temples, especially on Tuesday, Thursday and Saturday when many devotees served them food or snacks on these days. At some temples and mosque, there was place where people could sit and eat (*langar*)². Thus, whenever households were not able to access the food, one or more members or whole household went to religious places to consume food.

¹ Anganwadi Centre is a part of the Indian public health-care system. It provides basic health care services in slums and villages which include contraceptive counselling and supply, nutrition education and food supplementation, and pre-school activities

² Langar is religious food made at common kitchen/canteen inside religious places where food is served to all the visitors (without distinction of background) for free

Sometimes during religious festivals, many people put up stalls at various places, with free distribution of food. People from slums went to these places to have their meals and if possible, brought some food home for subsequent meals.

A very few households (2.5%) withdrew children out of the school to save money on school fees and instead sent them to work. Children usually worked as domestic help or as helpers at the shops/ offices. In a few cases, where both parents were working, children were withdrawn out of the school to take care of the younger siblings. It came out during discussion with the community members that the parents delayed the admission of the school going child to save money and take care of younger siblings.

The practice of families sending their children to eat with neighbours (2.2%) was less common. Many households reported to send one or more family to their villages in case of food insecurity (11.4%). Household sent non-earning members to villages and earning members stayed at the small accommodation with more people (usually 4-6 men in one room), thus saving on the rent. In severe cases of food insecurity, entire family migrate to their village or other slums (10.3%).

3.5. Irreversible Strategies

During the desperate times of food insecurity, households resort to the situations which are irreversible, and may cause permanent change (Figure 4). These strategies may be positive or negative, affecting person's health physically and mentally.

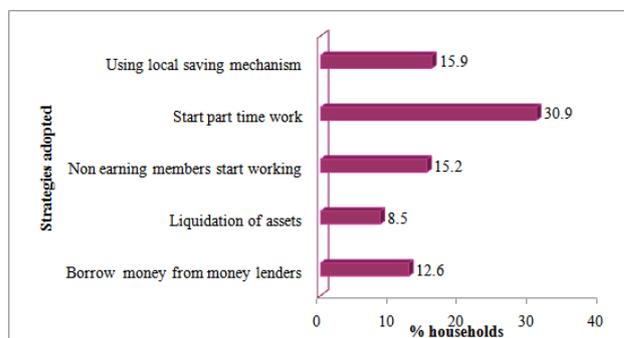


Figure 4. Irreversible strategies adopted by households (n=446)

Positive strategies adopted by the families (Figure 4), included starting part time work along with regular work (30.9%), non-earning members like women starting to work (15.2%) and using local saving mechanisms (15.9%).

The part-time work included working as a food vendor after regular work/ daily work or selling a few items on the road. Sometimes, non-earning family members like women, older children or other members started working. Mostly, women worked as domestic helps or as cooks. In a few cases, where men worked as food vendors and sold food on road, women worked at home the whole day for its pre-preparation and cooking. Some slums had unique saving mechanisms like self-help groups³. Families gave specific amount of money on daily/ weekly/ fortnightly or

³ Self-help group is a financial intermediary committee usually composed of 10–20 local people. Members make small regular savings contributions over a few months until there is enough capital in the group to begin lending. Funds may then be lent back to the members or to others in the village for any purpose.

monthly basis. When money was needed, they got it on zero percent or low interest rates. This way, households were prevented from the trap of money lenders. However, this mechanism has its own limitations; the families who were comparatively well off or who were able to save money were the ones to get money from saving mechanisms. Other families which did not have account in these saving mechanisms could not get money when needed or got at higher interest rates.

A few strategies adopted by households were negative such as borrowing money from the money lenders at high interest rates (12.6%). The interest rates taken by the money lenders were very high which made people fall in the poverty trap and a lifelong cycle of repaying the lenders back. Also, the households who did not have anything to mortgage were not entertained by money lenders. The money lenders, who did not keep anything for mortgaging, provided money at exorbitant interest rates. Some households sold their assets (8.5%) like furniture, jewellery or utensils when they needed to buy food. However, such cases were very few. The most vulnerable families did not have assets to sell. They lived in an empty home with nothing to sell. Jewellery was out of scope, even for the comparatively well off households.

4. Discussion

The coping strategies adopted by households in the urban slums were consistent with previous studies done in other countries. They [11,12,13] have reported similar strategies of relying on less preferred and less expensive foods and consuming seasonal vegetables being adopted by the food insecure households to meet the daily food needs of the households. Earlier studies have also shown that households follow rationing strategies in the situation of food insecurity. Corbett (1988) reported households reducing number of meals per day as a coping mechanism [14]. Kabeer (1990) found out that women cut down on number of meals consumed per day during food insecurity situation [15]. Norhasmah et al (2010), identified food insecure households following strategies such as restricting consumption of adults to make children eat, feeding working members of households at expense of non-working members, reducing or skipping meals eaten in a day [11].

Studies found significant association of food insecure households with borrowing money/ food and selling valuable materials [16,17] (Shariff and Khor, 2008; Studdert et al, 2001). Norhasmah et al (2010), Mardiharini (2004) and Agbola (2008) identified that households during food insecurity, tended to borrow money from friends and relatives, sell or pawn own assets to get cash and purchase food on credit. Eating at religious places, sending children to eat else-where or with neighbors/relatives can be referred to as food seeking strategies [7,11,18]. Norhasmah et al (2010) also enlisted these strategies as part of coping strategies of food insecure families [11]. Shariff and Khor (2008) identified that households received food or used to send family members to eat with relatives, neighbors or friends [16].

In Nigeria, nearly 40% households reported to have had incurred debts in order to afford food [19]. In Manila, Philippines, poor people borrowed money at high interest

rates in order to feed their family, as their daily wage did not cover food, education and utilities [20]. In Orissa, India, the money lenders charge exorbitant interest rates often as high as 50 per cent per month [9]. Kabeer (1990) indicated that firstly employed members looked for further jobs to increase their wages [15]. This was followed by non-earning members in the household such as women, children and the elderly drawn into employment when the recourses lessened. Castaneda et al (2000) and Shariff and Khor (2008) also found that employed members were drawn to more odd jobs during food insecurity in order to increase resources [16,21]. Role of SHG in preventing food insecurity is well documented [22]. A NGO in Kalahandi, Orissa, formed local SHG where villagers contribute a fixed amount of money and/or food grains every month so that local 'cash banks' and 'grain banks' can be created [9]. In times of acute need, any member of the group can withdraw a sum of money or grain from the common fund. Thus SHGs reduce poverty and vulnerability of the poor by increasing capital/ asset formation at the household level, improving household incomes, empowering women, and improving the accessibility of other financial services at the community level.

5. Conclusion

The coping strategies used by the households can be seen as an expression of negotiated decisions to minimize the impact of food insecurity in the households. The coping experience of respondents in the slums portrayed that food insecurity is a manageable process if strategies are adopted carefully. The households 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.

When food lessens or income decreases, adaptations employed could be diet change (that is, resorting to cheap food items, reducing the size or number of meals per day, engaging in odd jobs, and borrowing from relatives or friends). If the food shortage became worse, more drastic coping strategies would be implemented such as selling or pawning assets, non-working members starting to work, more than one job could be started by the working member. The coping strategies such as taking financial help of money lender, or temporarily migrating for work indicate that the food insecurity had worsened even further. The final stage was destitution which involves permanent migration. Generally it was seen that the men were the first ones to migrate for the moment to other locations for food and employment.

Thus, understanding these coping strategies could be a good starting point to develop and formulate community based contextually sensitive interventions to improve the situation of household food insecurity among slum dwellers. Knowledge on such information will facilitate efforts to address household food insecurity effectively and efficiently.

References

- [1] United Nations. *Nutrition-Relevant Action-Nutrition*. Policy Discussion Paper No. 10. Rome, 1991.
- [2] Agarwal, S., Sethi, V., Gupta, P., Jha, M., Agnihotri, A., Nord, M. Experiential household food insecurity in an urban underserved slum of North India. *Journal of Food Security*, 1 (3): 239-250. 2009.
- [3] Pasricha, S., Vijaykumar, V., Prashanth, N.S., Sudarshan, H., Biggs, B.A., Black, J., Shet, A.A community based field research project investigating anaemia amongst young children living in rural Karnataka, India: a cross sectional study. *BMC Public Health*, 9 (59). 2009.
- [4] Medecins Sans Frontieres Foundation, *2008 Food Security Assessment Report*. Chittagong Hill Tracts Sajek Union. Bangladesh, 2008
- [5] Gopichandran, V., Claudius, P., Baby, I.S., Felinda, A., Mohan, V.R. Household food security in urban Tamil Nadu: A survey in Vellore. *The National Medical Journal of India*, 23 (5): 278-80. 2010.
- [6] Radimer, K.L., Olson, C.M., Greene, J.C., Campbell, C.C., Habicht, J.P. Understanding hunger and developing indicators to assess it in women and children. *Journal of Nutrition Education*, 24: 36S-45S. 1992.
- [7] Mardiharini, M. Family-coping strategies in maintaining welfare during the economic crisis in Indonesia: a case studying rural and urban areas in Bogor, West Java, Indonesia. *Journal of Agricultural Economics*, 23 (1): 53-70. 2005.
- [8] Mishra, S. Household livelihood and coping mechanism during drought among Oraon tribe of Sundargarh district of Orissa. *Journal of Social Science*, 15 (2), 181-186. 2007.
- [9] Banik, D. *Starvation and India's Democracy*. London & New York: Routledge. 2007. Hardback (Paperback edition 2009).
- [10] Agarwal, S., Taneja, S. All slums are not equal: child health services among the urban poor. *Indian Pediatrics*, 42: 233-244. 2005.
- [11] Norhasmah, S., Zalilah, M.S., Mohd Nasir, M.T., Kandiah, M., & Asnarulkhadi, A.S. A Qualitative Study on coping strategies among women from food insecurity households in Selangor and Negeri Sembilan. *Malaysian Journal of Nutrition*, 16 (1): 39-54. 2010.
- [12] Kempson, K., Keenan, D.P., Sadani, P.S., Adler, A. Maintaining food sufficiency: Coping strategies identified by limited-resources individuals versus nutrition educators. *Journal of Nutrition Education and Behavior*, 35: 179-88. 2003.
- [13] Dore, A.R., Adair, L.S., Popkin, B.M. Low income Russian families adopt effective behavioral strategies to maintain dietary stability in times of economic crisis. *Journal of Nutrition*, 133: 3469-75. 2003.
- [14] Corbett, J. Famine and household coping strategies. *World Development*, 16: 1099-112. 1988.
- [15] Kabeer, N. *Women, household food security and coping strategies*. Institute of Development Studies. Nutrition Policy Discussion Paper (UN/ACC) No. 6. Geneva, Switzerland, 1990.
- [16] Shariff, Z.M., Khor, G.L. Household food insecurity and coping strategies in a poor rural community in Malaysia. *Nutrition Research and Practice*, 2 (1): 26-34. 2008.
- [17] Studdert, L.J., Frongillo, E.A., Valois, P. Household food insecurity was prevalent in Java during Indonesia's economic crisis. *Journal of Nutrition*, 131: 2685-91. 2001.
- [18] Agbola, P.O. Analysis of food insecurity coping strategies among farming households in Osun area of southwestern Nigeria. *Journal of Agriculture, Forestry and the Social Sciences*, 6 (2). 2008.
- [19] Oxfam International and Save the Children. *Rising food prices in the Sahel: The urgency of long-term action, Briefing Note*. Oxfam International and Save the Children. Africa, 2008.
- [20] FAO, United Nations. *The state of food insecurity in the world. High food prices and food security-threats and opportunities*. Rome, 2008.
- [21] Castaneda, C.Q., Bacos, F.F., Zarate, R.U., Galang, M.R., Molano, W.L. *Coping behavior towards food security of households in marginalized Philippine communities*. Food and Research Institute. Science and Technology Project: Poster Presentation. Republic of Philippines, 2000. Available at <http://www1.fnri.dost.gov.ph/posters/streetfood.pdf> (accessed on 21 April 2013).
- [22] Swamy, V., Tulasimala, B.K. Impact of Self Help Groups on the Food Security and Non-Food Consumption of Weaker Sections of the Society. *Social Science Electronic Publishing*. 2012. Available at <http://ssrn.com/abstract=2136125> (accessed on 22 April 2013).