1. Introduction:

- Amongst India’s urban poor:
  - 38% women are acutely undernourished.
  - 54% under-fives are stunted.
  - Household Food Insecurity (HFI) is presumably high.
- HFI can be rapidly assessed at program-level using a validated short questionnaire.
- However, assessing HFI using this questionnaire remains unexplored in Indian urban poor context.

2. Objective:

- To assess experienced HFI in a Delhi slum using short 4-item questionnaire.
- Identify HFI correlates.
- Test the questionnaire’s internal validity & reliability.

3. Methodology:

Design: Household-based, Cross-sectional Setting: North-East Delhi Slum (Pop: 70,000).
Duration: June-July, 2008
Sample & Sample Size: 410 Adult females.
Data Collection Personnel: Nutrition graduates
Data Collection Methods: Interview & Observation

Aspects enquired, in Hindi:
- Monthly per capita expenditure (MPCE) using NSSO-62nd round schedule²
- HFI: using the following 4-item questionnaire adapted from Ref.2.

In last 12 months, due to lack of money, did you or any adult family member faced the following conditions:
1. Could not eat a nutritious meal.
2. Food did not last for purchased period.
3. Cut meal size or skipped meal.
4. Hungry all day/night.

Facing ≥ 2 conditions for ≥ 3 months indicated Food insecurity
Facing ≥ 3 conditions ≥ 3 months indicated Hunger

Statistical Analysis:
- HFI correlates were identified through binary logistic regression [enter method] using STATA.
- Internal reliability and validity of 4-item questionnaire was assessed using Cronbach’s κ and Rasch CML estimates using SAS.

4. Results:

![Figure 4.1 Levels of Experienced Household Food Insecurity in a Delhi slum (N=410)](image)

![Figure 4.2 Overall Food Insecurity & Hunger In a Delhi slum (N=410)](image)

<table>
<thead>
<tr>
<th>Table 4.1 Significant Household Food Insecurity Correlates</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Un Adjusted</th>
<th>Adjusted*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 employed: 4 unemployed family members</td>
<td>2.1 (1.3-3.5)</td>
<td>1.9(1.1-3.2)</td>
</tr>
<tr>
<td>MPCE on Food &lt; Rs. 580/-</td>
<td>4.0(1.8-8.7)</td>
<td>4.6(1.5-13.4)</td>
</tr>
</tbody>
</table>

*Adjusted for both independent variables

9.4% poor households (with MPCE <580/-) were food secure i.e., were positive deviants

| Table 4.2 Internal Validity & Reliability of 4-item questionnaire |

<table>
<thead>
<tr>
<th>Item</th>
<th>Point biserial correlation</th>
<th>Relative Item Severity (SE)</th>
<th>Infit Statistics</th>
<th>Outfit Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nutritious meal</td>
<td>0.58</td>
<td>-4.75 (0.46)</td>
<td>1.00</td>
<td>0.31</td>
</tr>
<tr>
<td>Food did not last</td>
<td>0.69</td>
<td>-2.2 (0.4)</td>
<td>0.77</td>
<td>0.55</td>
</tr>
<tr>
<td>Cut meal size or skipped meal</td>
<td>0.64</td>
<td>1.97(0.52)</td>
<td>1.07</td>
<td>4.63</td>
</tr>
<tr>
<td>Hungry all day/night</td>
<td>0.55</td>
<td>4.98(0.72)</td>
<td>1.00</td>
<td>0.19</td>
</tr>
<tr>
<td>Cronbach Alpha</td>
<td>0.80</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5. Conclusion:

- 51% slum households are food insecure. Addressing urban poor HFI is urgently needed.
- MPCE on food is low among urban poor & significantly associated with HFI. There is a need to generate awareness to help urban poor:
  - Purchase and appropriately process low cost nutritious food incl. coarse grains.
  - Gain entitlement access to food security schemes
- Coping mechanisms adopted positive deviants can be promoted.
- Employment strongly influences HFI. Urban poor need resource-based livelihood & skill up-gradation and linkage to employment schemes and employers.
- 4-item questionnaire had a high internal reliability & moderate internal validity. It is a simple, rapid and low cost tool for programs. Its repeated use will test its usefulness & validity in Indian programmatic settings.

References:

Acknowledgements:
We are grateful to the respondents. Help rendered by UHRC colleagues Ms. Ayushi Agnihotri, Dr. S Kaushik, Mr. Sudhir Rai, Mr. Pradeep Patra & Ms. Aastha Shidhwani during the implementation of this Study is gratefully acknowledged.