

Levels and Determinants of Household Food Insecurity in Delhi Slums

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Junior Scientist Award, Community Nutrition

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1. Background

1. One-third of Urban India lives in poverty in slums and squatters¹.
2. Urban poor undernutrition is alarmingly High²
 - 54% under-fives suffer from chronic undernutrition
 - 38% women are acutely undernourished
3. Household food insecurity is one of the key factor causing undernutrition³

Ref: 1 National Population Policy (2000).

2 UHRC, 2008. Key results from the re-analysis of NFHS-3, 2005-06 data by wealth index quartiles. New Delhi: UHRC

3 Black et al. Maternal and child undernutrition: global and regional exposures and health consequences. Lancet 2008; 371:243-60.

1. Background (Contd..)

4. Three methods have been used to assess household food insecurity (HFI):

- Anthropometry
- Dietary recall
- Self-reported HFI experience^{1,2,3}

5. Experienced HFI - 1. uncertain food supply, 2. eats limited quality & quantity of food, 3. sleeps hungry¹.

6. Rationale:

- Rapid and valid scales are available for measuring HFI
- Yet unexplored in an urban poor community

Ref: 1 Carlson SJ, Andrews MS, Bickel GW. J Nutr 1999;129:S510–S516.

2 Hamilton WL, Cook JT, Thompson WW, et al. US Dept of Agriculture, Food and Consumer Service; September, 1997.

3 Blumberg SJ, Bialostosky K, Hamilton WL, et al. Am J Public Health 1999;89:1231–1234.

2. Study Objectives

1. Assess experienced household food insecurity (HFI) in a Delhi slum.
2. Identify determinants of HFI.

3. Methodology

1. **Design:** Household-based cross-sectional study
2. **Setting:** Purposively selected North-East Delhi slum (population: 70,000); not exposed to nutrition interventions.
3. **Sample:** 410 Adult female (≥ 18 years) involved in cooking food.
4. **Sample Size:** calculated using standard formula.

3. Methodology (Contd..)

5. Sample Selection: Slum stratified into 10 strata. In each strata 41 samples were identified using systematic random sampling.

6. Data Collection: interview & observation

- Monthly per capita expenditure [*NSSO-62nd round schedule¹*]
- HFI: 4 -item scale [*Adapted from validated 6 item Blumberg et al (1999) scale²*]

Ref: 1 NSSO. National Sample Survey (62nd round). NSS report no. 523. January, 2008.

2 Blumberg SJ, Bialostosky K, Hamilton WL, et al. Am J Public Health 1999;89:1231-1234.

3. Methodology (Contd..)

Household Food Insecurity Scale¹:

In last 12 months, due to lack of money, did you or any adult family member experience the following:

1. Could not eat a nutritious/ variety in meal.
2. Bought food did not last for purchased period.
3. Cut meal size or skipped meal.
4. Hungry all day/night.

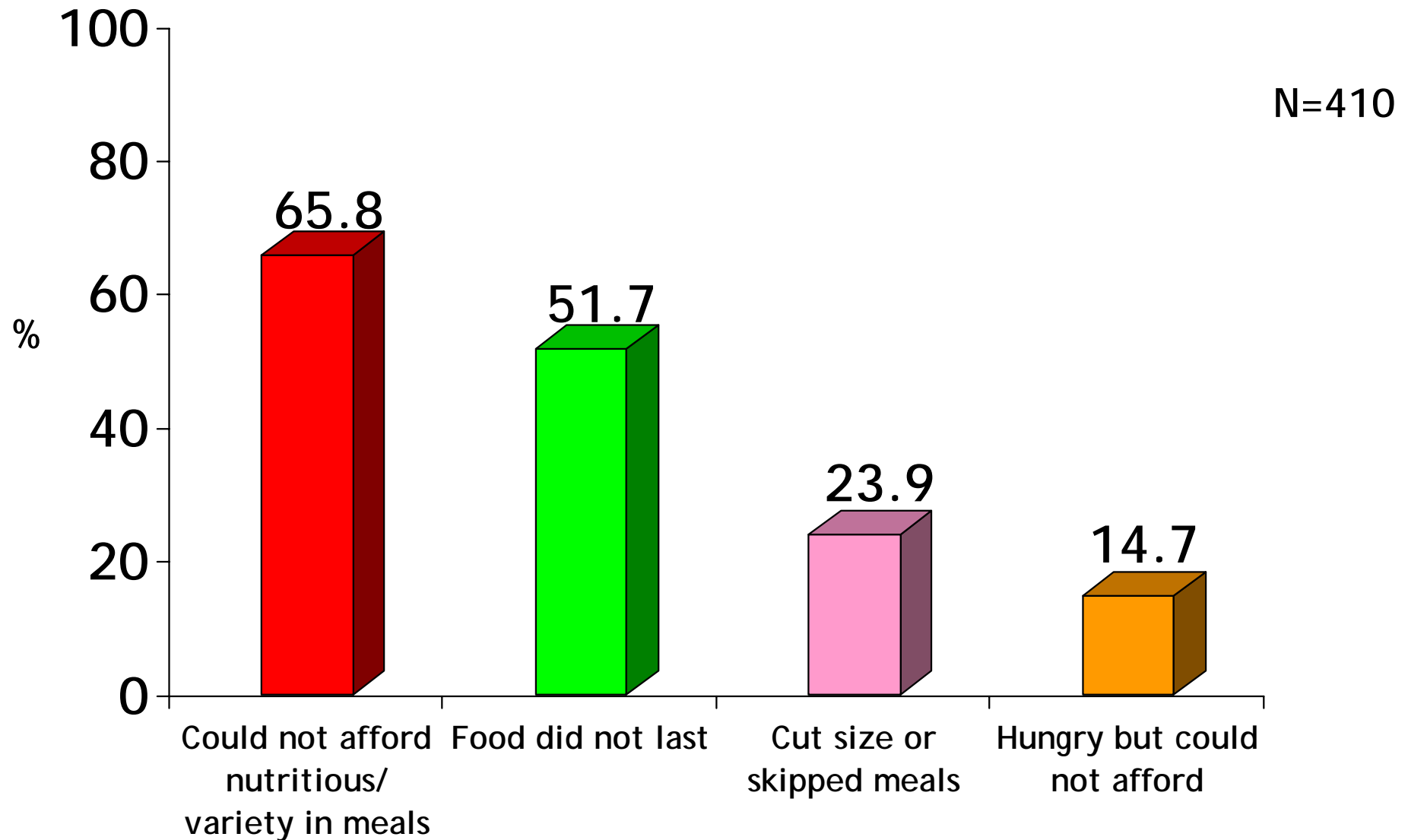
Facing ≥ 2 conditions ≥ 3 months in 12 months = food insecurity

Facing ≥ 3 conditions ≥ 3 months in 12 months = Hunger

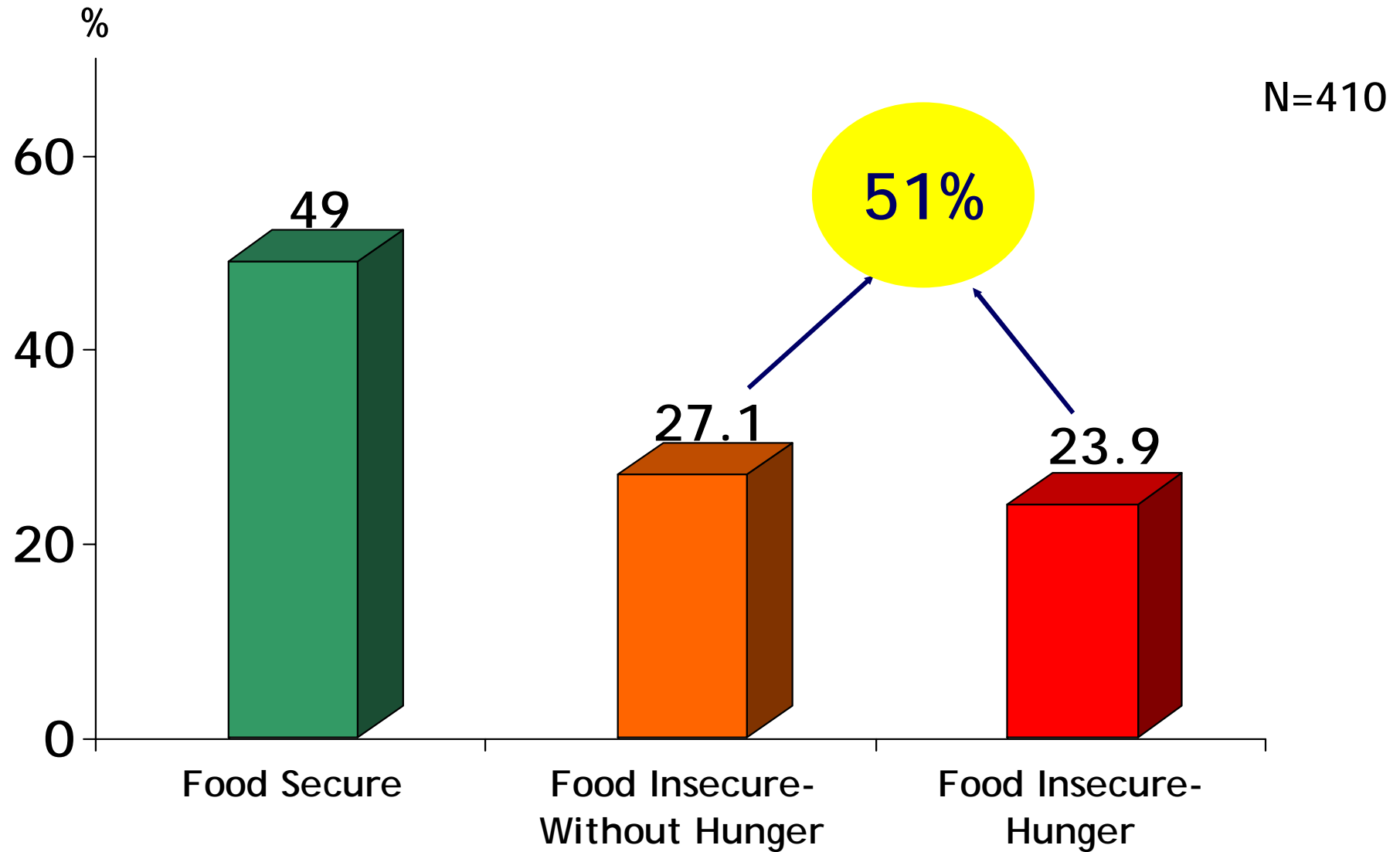
7. Statistical Analysis: Multivariate [STATA version 9]

4. Results:

4.1 Levels of Household Food Insecurity



4. Results (contd..)



4. Results (contd..)

4.2 Determinants of Household Food Insecurity

1. Households were more likely to be food insecure when:

- There was 1 employed: 4 unemployed family members
(OR 1.9, 95% C.I. 1.1-3.2)
- Monthly per capita expenditure (MPCE) on food Rs <580
(OR 4.6, 95 C.I. 1.5-13.4)

2. 9.4% households spending MPCE <Rs 580 were food secure “positive deviants”

5. Conclusions & Program Implications

1. 51% slum households are food insecure:
 - Urban poor food insecurity cannot be neglected & needs to be addressed.
2. MPCE-Food was low & influenced HFI. Hence, there is a need to generate awareness to help urban poor:
 - Purchase low cost nutritious food incl. coarse grains
 - Ways to preserve nutritional content while cooking & storing food
 - Gain entitlement access to PDS.
3. Despite MPCE-food <Rs. 580, 9.4% families were food-secure
 - Learn and promote positive practices and coping mechanisms adopted by positive deviants.

5. Conclusions & Program Implications (Contd..)

4. Unemployment significantly influenced food insecurity.
 - Aware and linked to employment schemes.
 - Promote resource-based livelihoods.
 - Skill-up gradation and linkages with private providers/employers.

5. HFI scale emerged as a simple, rapid and low cost for application in programmatic settings.
 - Helped identify food but not nutrient security
 - Needs validity to be tested in Indian settings.