Food consumption in India: comparison of dietary data sources

Lukasz Aleksandrowicz[1,2], Mehroosh Tak[2,3], Rosie Green[1,2], Sanjay Kinra[1], Andy Haines[1]

[1]London School of Hygiene & Tropical Medicine (LSHTM); [2]Leverhulme Centre for Integrative Research on Agriculture and Health (LICRAH); [3]School of Oriental and African Studies (SOAS)

LCIRAH Leverhulme Centre for Integrative Research on Agriculture and Health

LONDON SCHOOL of HYGIENE &TROPICAL MEDICINE

SOAS University of London

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Background

- Dietary data important for various health, agriculture and development policies
- Several methods for measuring food consumption, with impacts on what/how much we eat
- Relevance to India: nutrition transition & calorie puzzle
- Food intake between various Indian dietary surveys has not been compared

Data

- National Sample Survey (NSS)
- India Human Development Survey (IHDS)

Food expenditure

- Indian Migration Study (IMS)
- Andhra Pradesh Children & Parents Study (APCAPS)
- Nat'l Nutrition Monitoring Bureau (NNMB)

Dietary intake

- FAO

Food availability

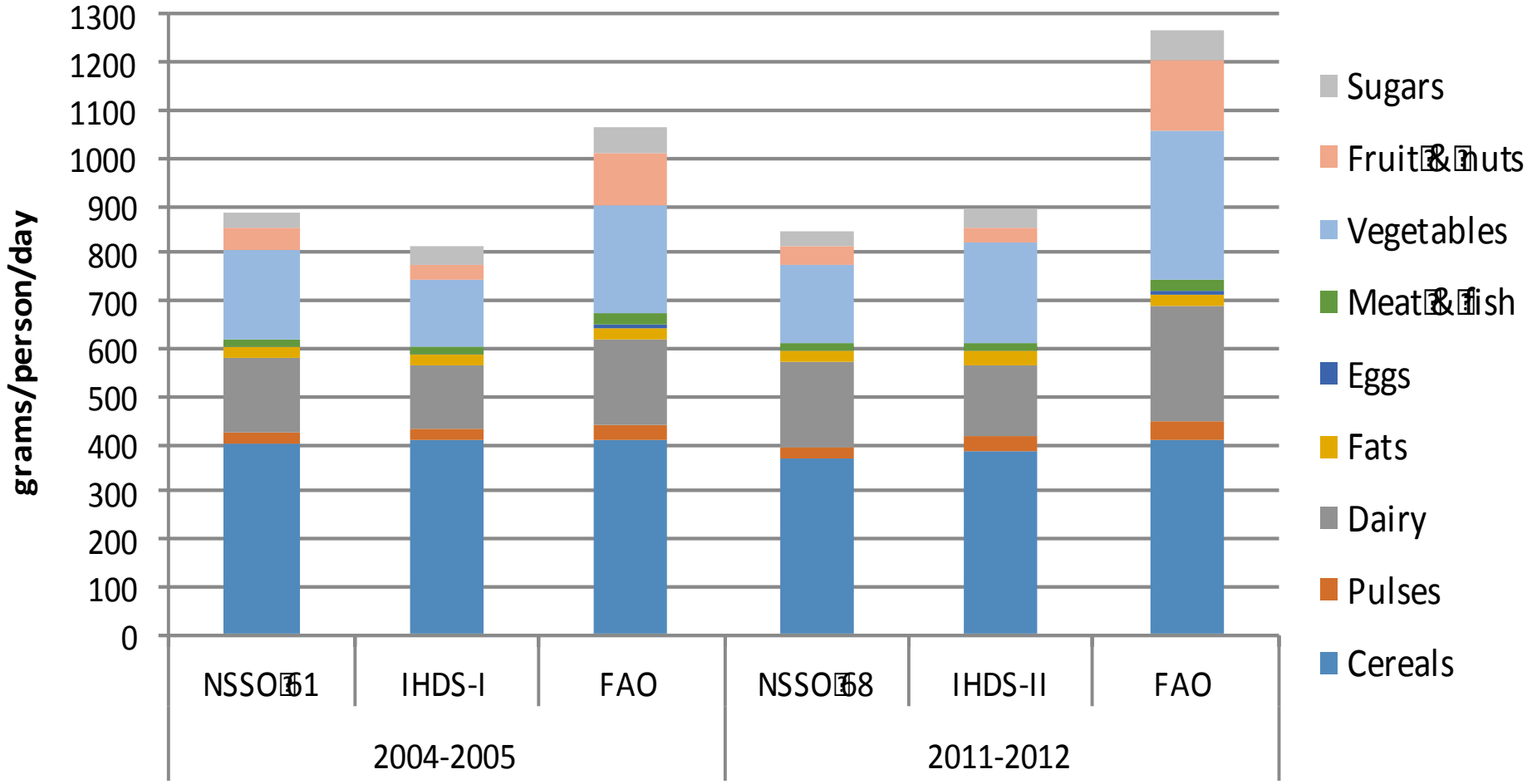
Analysis

	Data type	Year of survey	Region	Rural/urban	Recall period	Sample size
NSSO 61	HCES	2004-2005	National	Both	30 days	153,561
NSSO 66	HCES	2009-2010	National	Both	30 days	284,718
NSSO 68	HCES	2011-2012	National	Both	30 days	285,954
IHDS-I	HCES	2004-2005	National	Both	30 days	124,355
IHDS-II	HCES	2011-2012	National	Both	30 days	121,622
IMS	FFQ	2005-2007	Hyderabad, Lucknow, Nagpur, Bangalore districts	Both	1 year	6,867
APCAPS-3	FFQ	2009-2010	Rangareddy district, Andhra Pradesh	Rural	1 year	5,985
NNMB	24HR	2004-2005	National*	Rural	24 hours	N/A
NNMB	24HR	2011-2012	National*	Rural	24 hours	N/A
FAO	FBS	2005-2006	National	Both	N/A	N/A
FAO	FBS	2011-2012	National	Both	N/A	N/A

Relative differences in total intake (g/person/day)

Reference survey	intake g/d	Comparison survey	intake g/d	% Difference
HCES vs. HCES (avg.)				**-1%**
NSSO 61	881	IHDS-1	813	-8%
NSSO 68	845	IHDS-2	895	6%
FFQ vs. HCES (avg.)				**18%**
IHDS-1	975	IMS urban	1042	7%
IHDS-1	743	IMS rural	924	24%
NSSO66	727	APCAPS	891	23%
FBS vs. HCES (avg.)				**35%**
NSSO 61	881	FAO	1061	20%
NSSO 68	845	FAO	1263	50%
IHDS-1	813	FAO	1061	31%
IHDS-2	895	FAO	1263	41%
24HR vs. HCES (avg.)				**-9%**
IHDS-1	735	NNMB	745	1%
IHDS-2	862	NNMB	712	-17%
NSSO 61	807	NNMB	745	-8%
NSSO 68	814	NNMB	712	-13%

Availability/expenditure on food at the national level



Relative differences in food group intake (g/person/day)

	HCES vs. HCES	FFQ vs. HCES	FBS vs. HCES	24HR vs. HCES	Average*
Cereals	4%	-9%	4%	8%	6%
Pulses	-12%	27%	22%	19%	20%
Dairy	-15%	47%	26%	-54%	36%
Fats	1%	24%	10%	-39%	18%
Eggs	37%	48%	43%	N/A	43%
Meat & fish	10%	51%	45%	-21%	32%
Vegetables	-4%	-26%	32%	-40%	26%
Fruit & nuts	-56%	21%	71%	-11%	40%
Sugar	30%	-31%	42%	-133%	59%

*Absolute magnitude, taking all relative differences as positive

Interpretations

- Limitations: lack of gold standard for validate
- Comparison to literature:
  - Food availability data tends to overestimate
  - FFQ has variable performance
  - HCES: difficulty in measuring foods eaten out of home
- Summary: comparison of relative differences indicate limitations of dietary data use; further work must better validate these data sources

Thank you

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Data

- NSS (Ministry of Statistics, Government of India)
- IHDS (National Council of Applied Economic Research, New Delhi)
- Food availability (FAO)
- IMS & APCAPS (LSHTM, PHFI)

Contact: lukasz.aleksandrowicz@lshtm.ac.uk