PERSONAL FOOD ENVIRONMENTS
(Individuals and Households)

Suneetha Kadiyala, PhD
Associate Professor
Department of Population Health
London School of Hygiene and Tropical Medicine
What Happens to Patterns of Food Consumption when Food Prices Change? Evidence from A Systematic Review and Meta-Analysis of Food Price Elasticities Globally
Laura Cornelsen et al. (2014) https://doi.org/10.1002/hec.3107
PERSONAL FOOD ENVIRONMENTS
(Individuals and Households)

INFLUENCERS

Accessibility of food
Distance to nearby market and food outlets, daily mobility, mode of transport, space and place

Affordability of food
Purchasing power

Convenience
Relative time and effort of preparing, cooking and consuming food and time allocation
Food environment research in low- and middle-income countries: A systematic scoping review

- Time frame of included studies: January 2000-December 2017
- Included studies that assessed either the food environment and/or its associations with dietary and/or nutrition outcomes in LMICs
- Limited to the construct of ‘food environment’ and its variants

Source: Turner, C, Kalamatianou, S., Drewnowski, A., Kulkarni, B., Kinra, S., Kadiyala, S.
Records identified through database searching (n=920)

Records after duplicates removed (n=504)

Records screened (Title and abstract) (n=504)

Records excluded (n=380)
  Of which:
  Did not primarily assess the food environment or key concepts (n=243)
  Did not feature at least one LMIC (n=61)
  Not an original peer-reviewed article (n=70)
  Duplicate: found manually (n=6)

Full text articles assessed for eligibility (n=124)

Full text articles excluded (n=54)
  Of which:
  Did not primarily assess the food environment or key concepts (n=22)
  Not an original peer-reviewed article (n=29)
  Insufficient evidence from LMIC (n=3)

Full text articles included in review (n=70)
  Of which:
  Focus on school food environments or adolescents (n=34)
Key findings with a focus on adolescents
<table>
<thead>
<tr>
<th>Countries</th>
<th>no of studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mexico</td>
<td>5</td>
</tr>
<tr>
<td>Brazil</td>
<td>5</td>
</tr>
<tr>
<td>South Africa</td>
<td>4</td>
</tr>
<tr>
<td>Guatemala</td>
<td>4</td>
</tr>
<tr>
<td>India</td>
<td>4</td>
</tr>
<tr>
<td>China</td>
<td>3</td>
</tr>
<tr>
<td>Swaziland</td>
<td>1</td>
</tr>
<tr>
<td>Paraguay</td>
<td>1</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>1</td>
</tr>
<tr>
<td>Ghana</td>
<td>1</td>
</tr>
<tr>
<td>Eastern European cross-country</td>
<td>1</td>
</tr>
<tr>
<td>El Salvador</td>
<td>1</td>
</tr>
<tr>
<td>Indonesia</td>
<td>1</td>
</tr>
<tr>
<td>Malaysia</td>
<td>1</td>
</tr>
<tr>
<td>Mauritius</td>
<td>1</td>
</tr>
</tbody>
</table>
- Cross-sectional studies with poor adjustment for confounding
- 2 RCTs poorly reported

- Focus on urban slums
- School food environments
- Availability of unhealthy snacks
- Primarily concerned with obesity

- Low quality evidence
- No studies on undernutrition
- No studies from rural areas

We are studying:
- *What* is easily measurable
- *Where* easily measurable
What might these (low quality) findings indicate for action?

- Accessibility matters; this might be conflated with ‘convenience of buying’

“If my family eats good food then I will also eat good food “ (adolescent girl from Rathi et al. 2016)

- Schools seem to matter; but what about those not going to schools?

“adolescents living in a small Indian city share a single cultural model about which foods are most prestigious and that agreement persists across socioeconomic classes” (Maxfield et al. 2016)
Influencers for Personal Food Environments
- Accessibility of food
- Affordability of food
- Convenience

Influencers for Children’s Diets
- Eating patterns
- Taste preferences
- Psychological

From nutrition, economics, and other social sciences: time and effort matter, but HH composition matters too

Influencers for Food Provider Behaviour
- Intra-household dynamics
- Food Preparation
- Desirability and acceptability of food
- Socio-economic

From nutrition in the context of maternal and child undernutrition. But studies on young women and mothers exist

From nutrition & economics in the context of MCN. But on adolesc. nutrition?
PERSONAL FOOD ENVIRONMENTS
(Individuals and Households)

Examples of interventions
**Review article**

Interventions to Improve Adolescent Nutrition: A Systematic Review and Meta-Analysis

Rehana A. Salam, M.Sc.¹, Mehran Hooda, M.D.²,³, Jai K. Das, M.D., M.B.A.⁴, Ahmed Arshad, Zohra S. Lassi, Ph.D.⁵,⁶, Philippa Middleton, M.P.H., Ph.D.⁷,⁸, and Zulfiqar A. Bhutta, Ph.D.⁹,¹⁰

¹Division of Women and Child Health, Aga Khan University, Karachi, Pakistan
²Robinson Research Institute, University of Adelaide, Adelaide, Australia
³South Australian Health and Medical Research Institute and The University of Adelaide, Adelaide, Australia
⁴Center for Global Child Health, The Hospital for Sick Children, Toronto, Canada
⁵Center of Excellence in Women and Child Health, The Aga Khan University, Karachi, Pakistan

Article History: Received January 25, 2016; Accepted June 24, 2016

Keywords: Adolescent nutrition; Preconception nutrition; Pregnant adolescents; Micronutrient supplementation

**ABSTRACT**

Adequate adolescent nutrition is an important step for optimal growth and development. In this article, we systematically reviewed published studies till December 2014 to assess the effectiveness of interventions to improve adolescent nutrition. We found only one existing systematic review on interventions to prevent obesity which we updated and conducted de novo reviews for micronutrient supplementation and nutrition interventions for pregnant adolescents. Our review findings suggest that micronutrient supplementation among adolescents (predominantly females) can significantly decrease anemia prevalence (relative risk [RR]: 0.69; 95% confidence interval [CI]: 0.62–0.76) while interventions to improve nutritional status among “pregnant adolescents” showed statistically significant improved birth weight (standard mean difference: 25; 95% CI: –8.81.41), decreased low birth weight (RR: 0.70; 95% CI: 0.57–0.84) and preterm birth (RR: 0.79; 95% CI: 0.57–0.99). Interventions to promote nutrition and prevent obesity had a marginal impact on reducing body mass index (standard mean difference: −0.08; 95% CI: −0.17 to 0.01). However, these findings should be interpreted with caution due to significant statistical heterogeneity.

© 2016 Society for Adolescent Health and Medicine. Published by Elsevier Inc. This is an open access article

---

**ANNALS OF THE NEW YORK ACADEMY OF SCIENCES**

**CONCISE ORIGINAL REPORT**

Delivering an action agenda for nutrition interventions addressing adolescent girls and young women: priorities for implementation and research

Zulfiqar A. Bhutta,¹,² Zohra S. Lassi,³ Gilles Bergeron,⁴ Berthold Koletzko,⁵ Rehana Salam,⁶ Angela Diaz,⁷ Mireille McLean,⁸ Robert E. Black,⁹ Luz Maria De-Regil,¹⁰ Parul Christian,¹¹ Andrew M. Prentice,¹²,¹³ Jonathan D. Klein,¹⁴ William Keenan,¹⁵ and Mark Hanson¹⁶
Potential intervention priorities
The who and the what?

• **Who?** Define what we mean by child/adolescent
  • 16 year olds are basically adults
  • Dropout rates high in secondary schools
  • Legal age of marriage, military service, voting in several countries

• **What?**
  • What dimensions need specific and targeted actions
  • What needs more generic/population level action
How: Potential areas of focus for action

• Focus on interactions between external and personal domains (a systems approach to interventions):
  • i.e. addressing price volatility will be important for affordability of milk and its consistent consumption through the year

• Test implementation modalities to improve dietary choices
  • Nutrition knowledge is important.
    • But whose knowledge is important for adolescents (own? teachers? Adults in the HHs?)
  • SBCC using multiple platforms (school, community, peer-groups, media)
  • Multiple platforms appear to be important for adolescent health

• Need to balance the attention between undernutrition and dietary risks for NCDs (and not just obesity, albeit that is a risk factor).
  • Both these worlds—in research, policy and implementation—need to meet
INFLUENCERS

Accessibility of food
Distance to nearby market and food outlets, daily mobility, mode of transport, space and place

Affordability of food
Purchasing power

Convenience
Relative time and effort of preparing, cooking and consuming food and time allocation