Nutrition and food safety perception

Safe Food Fair Food Cambodia Final Meeting
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Food safety is a key component of food environment & food system.

Conceptual framework of food systems for diets and nutrition (IFPRI 2019)
“Our food may not be very safe, because nowadays everything uses chemicals:”
Women’s Perceptions of Food Safety and Nutrition in Phnom Penh, Cambodia
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1) Qualitative Nutrition Research

OBJECTIVE

To determine women’s perception of the risk of food safety and how it relates to diet, health and decision making.

METHODOLOGY

Interviewed 24 caregivers (grandmothers & mothers) responsible for care of a child under 5 five in Phnom Penh, Cambodia,

Used Photo Voice approach, which allowed the women to photograph their meals and perceptions of food safety and nutrition.
Chemicals affecting health: “I’m afraid that it will affect the baby because of those chemicals in the vegetables. It is okay for us to eat them but the baby in the womb cannot handle all those chemicals.”

Caught fish as safe: “If we had vast plain land, we would dig a pond and raise fish by ourselves. It’s easy eating and doesn’t have chemicals. But there is no land. I can only afford this house.”

Chemicals affecting food: “Because nowadays there are many chemical-injected meats. A few days ago, I bought half kilogram of pork. It smelled very bad...I then tried to marinate it and dried it under the sun; however, it still had bad smell.”

Home grown as safe: “I want to show that natural vegetables are hygienic and good for health. We should plant those vegetables such as banana tree, ivy gourd...by ourselves are better than buying from the market.”

Cleaning Strategies: “Blanch to get rid of that stuff. I even clean it for three or four times. I soak it to eliminate the contaminated substances. I am afraid that they are exposed or are injected with chemicals. I’m afraid that it would cause diarrhea when eating.”

Purchasing Strategies: “I buy the better-looking ones. For vegetables, if they don’t look good, I don’t buy them... But on the goodness, if they look too good, I don’t buy it either. If there’s some caterpillar or something, we can wash them more. Those don’t have as many chemicals.”

(1) Caregivers worried that chemicals fresh produce may affect the health of their families

Finding 2: Caregivers lacked trust in wet markets, favouring wild-caught & home-grown fresh produce

Finding 3: Caregivers employed cleaning & purchasing strategies to mitigate food safety risk

3 MAIN RESULTS
2) Quantitative Nutrition Research

**OBJECTIVE**
Examine the association between perceived food environment, which incorporates food safety perception, with maternal food consumption and child consumption.

**METHODOLOGY**

**Study design**: A cross-sectional survey with mothers of children 6 – 24 months old living within 2 km (1 mile) from a wet market (Jan 2019)

**Final analytical size**: 99 women-child pair in Phnom Penh & 99 in Siem Riep.

**Data**: maternal & child weekly food consumption, maternal & child dietary diversity, food security, food environment perception and food safety perception & 24 h recall study

**Perceived food environment & food safety score**: averaging 8 perception questions
**Result:** maternal & child dietary diversity

**Finding:** Mothers & children had a low consumption of eggs and vitamin-A-rich fruits but good consumption of meat, poultry and fish and seafood.

*** The data derived from a dichotomous response (Yes/No) for the questions asking whether mothers or children consumed a food group in the 24-hr preceding the survey.
Result: Food Safety Perceptions

Finding:
Overall, 10% - 25% of the mothers perceived that chemical-free fresh produce is NOT available, affordable or convenient to obtain.
Result: multivariate regression

1) Perceived low food access (incorporating food safety perception) was associated with 4x–5x higher likelihood of low animal-flesh food consumption in both children and mother

2) Household wealth was not associated with low consumption in children

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**Table 3: Logistic regression analysis of the characteristics associated with children’s low consumption of fruits and vegetables and animal-flesh food**

<table>
<thead>
<tr>
<th></th>
<th>Low fruits and vegetable consumption (&lt; once a day)</th>
<th>Low animal-flesh food consumption (&lt; once a day)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Univariate analysis (n=198)</td>
<td>Multivariate analysis* (n=198)</td>
</tr>
<tr>
<td></td>
<td>OR (95% CI)</td>
<td>P value</td>
</tr>
<tr>
<td>Child age</td>
<td>0.96 (0.91, 1.10)</td>
<td>0.12</td>
</tr>
<tr>
<td>Child sex</td>
<td>ref</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>0.94 (0.53, 1.66)</td>
<td>0.82</td>
</tr>
<tr>
<td>Female</td>
<td>ref</td>
<td></td>
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<tr>
<td>City of residence</td>
<td>ref</td>
<td></td>
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<tr>
<td>Phnom Penh</td>
<td>0.64 (0.36, 1.12)</td>
<td>0.12</td>
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<tr>
<td>Siem Reap</td>
<td>ref</td>
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<tr>
<td>Wealth tertile</td>
<td>ref</td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>1.36 (0.68, 2.09)</td>
<td>0.38</td>
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<tr>
<td>Middle</td>
<td>ref</td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>0.94 (0.47, 1.87)</td>
<td>0.86</td>
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<tr>
<td>Maternal education</td>
<td>ref</td>
<td></td>
</tr>
<tr>
<td>More than secondary education</td>
<td>3.18 (1.27, 8.00)</td>
<td>0.014</td>
</tr>
<tr>
<td>Completed primary education</td>
<td>2.80 (1.09, 7.18)</td>
<td>0.032</td>
</tr>
<tr>
<td>None or some primary education</td>
<td>2.72 (1.15, 6.43)</td>
<td>0.022</td>
</tr>
</tbody>
</table>

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Access to fruits and vegetables†‡
Perceived high access: ref
Perceived low access: 5.07 (2.75, 9.35) <0.001

Access to animal-flesh food†§
Perceived high access: ref
Perceived low access: 3.63 (2.00, 6.57) <0.001
CONCLUSIONS FROM BOTH STUDIES

1) Perceived food safety and food access may play a role in maternal and child diet

2) Interventions promoting maternal and child diet should address perceived food access and food safety
Figure 1: % participants respond to questions about **food safety and unhealthy food concern**

- **Perservatives and additives in meat & fresh produce**: 71.3% very concerned, 24% concerned, 3.3% neutral, 0.7% not quite concerned, 0.7% not at all concerned.
- **Pesticides in fresh produce**: 72.7% very concerned, 26% concerned, 1.3% neutral, 0.7% not quite concerned, 0.7% not at all concerned.
- **Hormone in meat**: 71.3% very concerned, 24% concerned, 1.3% neutral, 0.7% not quite concerned, 0.7% not at all concerned.
- **Poor hygiene in meat and fresh produce**: 55.3% very concerned, 25.3% concerned, 10.7% neutral, 4.7% not quite concerned, 0.7% not at all concerned.
- **Poor hygiene in processed and ready-to-eat food**: 53.3% very concerned, 28.7% concerned, 14.7% neutral, 0.7% not quite concerned, 0.7% not at all concerned.
- **Pathogen contamination in food**: 48.7% very concerned, 28.7% concerned, 3.3% neutral, 0.7% not quite concerned, 0.7% not at all concerned.

Figure 3: % participants reported **very often, sometimes or do not at all restricting certain varieties of food**

- **Restricting fruits varieties**: 1.3% very often, 14.7% sometimes, 64% not at all.
- **Restricting vegetables varieties**: 4% very often, 12.7% sometimes, 83.3% not at all.
- **Restricting meat varieties**: 2.7% very often, 10.7% sometimes, 86.7% not at all.

Percentage of respondents (Size proportional to %)
- 50% or more
- Less than 50%