FOOD LABELLING
AND INFORMED FOOD CHOICES
– POSSIBILITIES & PROSPECTS

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GLOBESITY

- 7th largest country in the world
- Over 1.2 billion population
- About 20% of world population
- Second most populous

- ~ 1/3rd world’s undernourished
- < 214 million undernourished
- At least 10% are overweight and obese
- 5-15% children and adolescents are overweight and obese!!
Growing Obesity – A concern

- Consumption of away-from home foods is on the rise
- Consumption of pre-packaged processed foods increased
- Prevalence of overweight, obesity and NCDs on the rise
  (Laxmaiah et al, 2009; NFI, 2008; Ramachandran, 2007 etc.)
- Food labels can be powerful tools to discourage consumption of unhealthy packed foods (Goldberg 1992)
- Education about food labels can influence purchasing habits and prompt purchase of healthy foods (Gavaravarapu, 2016; Sudershan et al., 2014; Saha et al., 2013)
Food Labels

- Essential source of Information for consumer
- Effective control and choice on what they eat for
  - Health
  - Safety
- Religious
- Ethical
- Potentially powerful tools of communication to discourage consumption of unhealthy packed foods
What it means to stakeholders?

**For Public Policy**
- Reduce information asymmetry
- Provide consumers with info.
- Help public make informed choices
- Stimulate healthier eating

**Consumers**
- Easy to use information for healthy food choices

**Consumer Associations**
- Ensure their right to be properly and correctly informed about food

**Food industry**
- Help position & differentiate from competitors
- Demonstrate good CSR
Elaboration Likelihood Model

We process information through two routes depending on the situation.

Key Situational Factors:
- Motivation [Involvement]
- Ability [Knowledge]

Central Route
- [careful thought]
- most likely with:
  - High Involvement
  - More Knowledge

Peripheral Route
- [quick thought]
- most likely with:
  - Low Involvement
  - Less Knowledge

(Petty & Cacioppo, 1979)
Info on Food labels in India

- Product Name
- List of Ingredients
- Shelf Life
- Storage Instructions
- Name & Address of Manufacturer
- Country of Origin
- Weight of Product
- Instructions for Use
- NUTRITION INFO
Symbols ... quality symbols
Nutrition labeling

- Information on energy expressed in Kcal / 100 gm or 100 ml or per serving
- Amounts of carbohydrate (specify quantity of sugar),
- Protein and fat expressed in gm
- The amount of any other nutrient for which a nutrition or health claim is made
- If the claim is on the type of fatty acids or the amount of cholesterol, the amount of SA, MUFA or PUFA and Cholesterol should be declared and also trans fat
- Numerical information on vitamins and minerals shall be expressed in metric units per 100 gm or 100 ml.
A typical nutrition labels
Framework for claims

NUTRITION CLAIMS

- NUTRIENT CONTENT
  - low in fat

- NUTRIENT COMPARATIVE
  - less than . .

HEALTH CLAIMS

NUTRIENT FUNCTION
Physiological role of Nutrient in development & body functions

OTHER FUNCTION
Beneficial effects from consumption of foods on normal functions or biological activities

DISEASE RISK REDUCTION
Significantly altering a risk factor (s) for a disease or health related condition.
Prior to making claims the regulation asks the maker to be clear on...

- **Food profile**
  - Food category
  - Nutrient association

- **Claim Statements**
  - Nutrient led
  - Food led

- **Effective Amount**
  - Per day/serve
  - Excess disclaimer

- **Population groups**
  - Target
  - Avoidance (pregnancy)

- **Food in context of Diet**
  - Balanced (part)
  - Supplement
  - Diets – low in fat, SFA etc
  - Lifestyle change

- **Disclosure statements**
  - If restricted nutrient exceeds limit
Pre-requisites for using food labels for health communication

- Buying pre-packaged foods
- Education
- Nutrition literacy
- User friendliness
• ~12% urban consumers (at super market sites) reported that they buy everyday
• 44% reported that they buy once in a week
• A quarter of them bought every fortnight.

(‘Sudershan et al., 2013)
How many of them consider label info. while buying packed foods?

- >90% consider taste
- 87% consider quality
- Label information is considered by 71%

How many of them consider label info. important for buying packed foods?

- About 92% read food labels
- Of them about 40% always checked food labels before buying packed foods.

Why?
- For safety (84%);
- Genuineness/quality (45%)
- ~20% see nutrition info.
Education levels and food labels

- Only literates can read label
- Direct relationship between education level and habit of checking food labels (FSAI, 2003; Yang et al., 2000)
- Women with more educational achievement more likely to read labels (Review by Cowburn & Stockley, 2005)
- In US, label use was highest among women aged >35 years with more than high school education.

FGDs among women in four south Indian states, more women in Kerala reported that they check food labels (Subba Rao et al., 2007)

In a study in Northeast India where nearly 50% of the women reported to read labels, only 20% were illiterate (KABP study - NIN, 2006)

Positive association between level of education and reading labels, nutrient contents, Nutrition & health claims, quality symbols
User friendliness

Nutrition Labelling

Numerical presentation

Non-numerical Presentation

Guideline Daily Amounts (GDAs) - Combination

Traffic light symbol
There is no clear consensus about the most useful format of labels *

Studies in US and UK found traffic light symbols for nutrition labelling not so successful

No major differences in consumer understanding of information from different labelling systems
TL – GDA- colour coded GDA’s (EUFIC, 2003)

Recent study in Australia indicated that using TL system of labelling their urban participants were 3 times more likely to identify healthy foods than %DI labels (Kelly et al., 2009)

Manufacturers had concerns with TL system

HEALTH COMMUNICATION

About For FOOD LABELS
Reasons for non-use of labels†

- Lack of time
- Presentation style of information
- Lack of understanding of terms
- Lack of understanding of role of nutrients in health
- Concerns about accuracy of information

† As reported in a review of over 103 consumer studies by Cowburn et al (2005), Public Health Nutrition, 8(1): 21-28
Knowledge and Practices of Using Food Label Information Among Adolescents Attending Schools in Kolkata, India
Snehasree Saha, MSc1; Sudeshan R. Vemula, PhD2; Vishnu Vardhana Rao Mendi, PhD3; SubbaRao M. Gavaravarapu, PhD1

ABSTRACT
Objective: To assess knowledge and use of label information among adolescents.
Methods: A cross-sectional study was conducted among adolescents (N = 146) randomly using cluster sampling. A pre-coded questionnaire was used to assess information display. The data were collected using a structured questionnaire.

Results: Although 88% of adolescents knew that expiration dates are important (74%), only 20% had used them before. The knowledge of the symbols on labels was poor. The results showed that 40% of the adolescents knew that consumption of packaged foods, whether labeled or not, could affect their health.

Conclusions and Implications: The results suggest that education about food labeling is necessary to improve dietary habits. Use of food labeling by urban consumers in India—A study among supermarket shoppers
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INTRODUCTION
India has the largest adolescent population in the world and is home to over 20% of the world's adolescents. These 10- to 19-year-olds constitute 243 million of India's 1.2 billion population. About 10% to 15% of adolescents in urban areas in India are current drug users, and the prevalence for school-going adolescents is 4%. The average age of onset of drug use is 15 years. For an obesity, unhealthy eating, and health concerns, it is important to monitor the food habits of adolescents.
Communication about food labels

- Nutrition education is a pre-requisite
- Information about how to use the food labels needs to be given to people
- Information or a manual for communication about food labels to Industry
Knowledge and Practices of Using Food Label Information Among Adolescents Attending Schools in Kolkata, India

Snehasree Saha, MS¹; Sudershan R. Vemula, PhD²; Vishnu Vardhana Rao Mendo, PhD³;
SubbaRao M. Gavaravarapa, PhD¹

ABSTRACT

Objective: To assess knowledge and use of label information among adolescents.

Method: A cross-sectional study was conducted among adolescents (N = 316) from 6 schools selected through cluster sampling. A pre-coded questionnaire was used to assess frequency consumed, usefulness of nutritional information, read knowledge of symbols, and usefulness of nutritional information was rated using descriptive statistics and chi-square test.

Results: Only 30% of respondents read the date of manufacture (11%), and nutrition labels contained information on percentage daily values (13%).

Read-B4-U-Eat: A Multicomponent Communication Module to Promote Food Label Reading Skills Among Adolescents in India

SubbaRao M. Gavaravarapa, PhD¹; Snehasree Saha, MS²; Sudershan R. Vemula, PhD³; Vishnu Vardhana Rao Mendo, PhD³

INTRODUCTION

India is home to about 20% of the world's adolescent population, over 10% of whom are overweight or obese. Curbing adolescent obesity, a reason for the onset of adult chronic diseases, has become an important public health priority. The increased availability of processed and prepackaged foods and confusion over knowledge and self-reported practices related to the use of food label information among adolescents.

DEVELOPMENT AND IMPLEMENTATION

Development of READ-B4-U-EAT Module

There were 5 steps in designing and evaluating the module on knowledge and self-reported practices related to the use of food label information among adolescents.

Development of Module

Material development: Social Cognitive Theory and Shared Learning principles were used to develop the module's content.
Table 1. Comparison of Scores of Intervention and Comparison Groups Before and After Intervention Using READ-B4-U-EAT Module

<table>
<thead>
<tr>
<th>Scores</th>
<th>Comparison Group</th>
<th>Intervention Group</th>
<th>P (2-Sample t Test)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-intervention scores</td>
<td>12.31 ± 3.58</td>
<td>13.3 ± 3.41</td>
<td>NS</td>
</tr>
<tr>
<td>(mean ± SD)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Postintervention scores</td>
<td>12.68 ± 3.25</td>
<td>16.6 ± 3.07</td>
<td>≤.001*</td>
</tr>
<tr>
<td>(mean ± SD)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P (paired t test)</td>
<td>NS</td>
<td>≤.001*</td>
<td></td>
</tr>
</tbody>
</table>

NS indicates not significant.
*P was significant.
Note: Intergroup differences were assessed using 2-sample t test; intra-group comparisons were made using paired t test.
Table 2: Knowledge and Practices (K&P) Related to Use of Food Label Information Among Adolescents From Hyderabad, India

<table>
<thead>
<tr>
<th>Variable</th>
<th>Comparison Group (n = 59)</th>
<th>Intervention Group (n = 116)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>K&amp;P Status Cross-tabulation</td>
<td>McNemar Test</td>
</tr>
<tr>
<td>Knowledge</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is there a manufacturing date on the food label information?</td>
<td>I = 4; S = 46; D = 7</td>
<td>0.54</td>
</tr>
<tr>
<td>Is an ingredient list present on the food label?</td>
<td>I = 8; S = 47; D = 4</td>
<td>0.38</td>
</tr>
<tr>
<td>Is nutrient information present on the food label?</td>
<td>I = 8; S = 47; D = 4</td>
<td>0.83</td>
</tr>
<tr>
<td>Do you see any quality symbols on the food label?</td>
<td>I = 14; S = 35; D = 10</td>
<td>0.54</td>
</tr>
<tr>
<td>Where are ISI symbols used?</td>
<td>I = 20; S = 27; D = 12</td>
<td>0.21</td>
</tr>
<tr>
<td>An AGMARK symbol is seen on packages of what kinds of food?</td>
<td>I = 14; S = 36; D = 9</td>
<td>0.40</td>
</tr>
<tr>
<td>Is the vegetable/non-vegetable symbol mandatory on food packages?</td>
<td>I = 16; S = 25; D = 8</td>
<td>0.15</td>
</tr>
<tr>
<td>Identification of vegetable symbol</td>
<td>I = 6; S = 42; D = 10</td>
<td>0.33</td>
</tr>
<tr>
<td>Identification of non-vegetable symbol</td>
<td>I = 13; S = 39; D = 7</td>
<td>0.26</td>
</tr>
<tr>
<td>Practice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do you read food labels while buying a product?</td>
<td>I = 0; S = 59; D = 0</td>
<td>–</td>
</tr>
<tr>
<td>Do you look for the date of manufacture?</td>
<td>I = 10; S = 40; D = 9</td>
<td>65.9</td>
</tr>
<tr>
<td>Do you check for the date of expiration?</td>
<td>I = 9; S = 44; D = 6</td>
<td>76.3</td>
</tr>
<tr>
<td>Do you check for the best-before date?</td>
<td>I = 14; S = 34; D = 11</td>
<td>69.3</td>
</tr>
<tr>
<td>Do you read the fat content for buying candy?</td>
<td>I = 10; S = 34; D = 15</td>
<td>0.42</td>
</tr>
<tr>
<td>Do you read the sugar content when buying chocolates?</td>
<td>I = 17; S = 34; D = 8</td>
<td>0.10</td>
</tr>
<tr>
<td>Do you read ingredients when buying cookies?</td>
<td>I = 7; S = 44; D = 8</td>
<td>1.0</td>
</tr>
<tr>
<td>Do you check for claims when buying cookies?</td>
<td>I = 11; S = 33; D = 15</td>
<td>0.55</td>
</tr>
<tr>
<td>Do you see the salt content when buying snacks?</td>
<td>I = 13; S = 35; D = 11</td>
<td>0.83</td>
</tr>
<tr>
<td>Do you check for sugar in sparkling beverages?</td>
<td>I = 11; S = 34; D = 14</td>
<td>0.69</td>
</tr>
<tr>
<td>Do you check for the sugar content when buying fruit juices?</td>
<td>I = 11; S = 37; D = 11</td>
<td>1.0</td>
</tr>
</tbody>
</table>

D indicates the number of participants who showed deterioration; I, the number with positive improvement; S, the number at status quo. *Significant at $P \leq .05$. 

Lastly…

- Food labelling alone is likely to offer limited success as a public health communication method.
- But can make small but important contribution for making informed food choices.
Thank you for your attention
FOUR GRAIN
RICE
WHEAT
RAGI
CORN

Ingredients:
Noodles: Cereal Flours [Wheat (75%), Rice (1.2%), Corn (1.2%), Ragi (1.2%)], Edible Vegetable Oil, Salt, Minerals, Healthmaker Seasoning™: Spice Mix 28% Onion, Garlic, Turmeric, Coriander, Red Chilli, Ginger, Cumin, Pepper, Cinnamon, Nutmeg, Clove, Fenugreek), Sugar, Salt, Wheat Flour, Flavour Enhancers (Yeast Extract, INS 627, INS 631), Corn Starch, Hydrolysed Vegetable Protein, Edible Fibre (INS 414), Vitamins, Acidity Regulator (INS 330), Natural and Nature Identical Flavouring Substances.

CONTAINS ADDED NATURAL AND NATURE IDENTICAL FLAVOURING SUBSTANCES
Here's a great tasting chocolaty cereal that gives solid nutrition.

1 serving of *Kellogg's Chocos*  
Goodness of 2 chapattis**  
Calcium of 2 glasses of milk***

* Comparisons done basis one serving (30g Chocos + 120ml skim milk) of Chocos and the goodness of 2 chapattis (30g) made from leading atta brands.
** Goodness basis Vit A, C, B1, B2, B6, B12, Iron and Fibre in 2 chapattis (30g) made from leading atta brands.
*** Comparisons done basis calcium in 1 serving of Chocos (30g Chocos + 120ml skim milk) and that in 2 glasses of cow's milk (120 ml each)

INGREDIENTS: WHEAT FLOUR, SUGAR, EDIBLE VEGETABLE OIL, CASHEW BITS (4%), BUTTER (4.2%), MILK SOLIDS, RAISING AGENTS [500(ii), 503(ii)], ALT AND EMULSIFIERS (322, 471).

Numbers in brackets as per International Numbering System.

CONTAINS ADDED ARTIFICIAL FLAVOURS (NUT, BUTTER & VANILLA)
### Dietary Fibre Content

(as per NIN* - National Institute of Nutrition)

<table>
<thead>
<tr>
<th>100g of</th>
<th>Hi Fibre Biscuits 6.0g</th>
</tr>
</thead>
<tbody>
<tr>
<td>100g of Spinach</td>
<td>2.5g</td>
</tr>
<tr>
<td>100g of Fresh Papaya</td>
<td>2.6g</td>
</tr>
<tr>
<td>100g of Ripe Apple</td>
<td>3.2g</td>
</tr>
<tr>
<td>100g of Fresh Banana</td>
<td>1.8g</td>
</tr>
</tbody>
</table>

*Source: Nutritive value of Indian foods by NIN*