Health Promoting Vending Machines: Evaluation of a Pediatric Hospital Intervention

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Background

- Increased availability of energy dense foods contributes to obesity and chronic diseases

- Vending machines
  - Typically offer high-calorie and low-nutrition foods
  - Convenient point of purchase and source of revenue

- At Ste-Justine Hospital, 75% of drinks and 95% of snacks in the vending machines did not meet dietary guidelines:
  - Canada Food Guide
  - Institute of Medicine Nutrition Standards for Foods in Schools
Pediatric hospitals are well positioned to advocate for healthy food environments
  - Priority of the new Center for Health Promotion at Ste-Justine Hospital

New Concept of Health Promoting Vending Machines
  - Modify the food supply to ensure consistency with dietary guidelines
  - Increase access to healthy foods within the hospital
  - Serve as a model for children, parents, visitors and staff
Before October 2008:
Vending machines in hospital’s main entrance lobby
After October 2008
Evaluation objectives

- To evaluate the impact of Health Promoting Vending Machines on...
  - Consumers’ purchase
  - The extent to which factors such as item’s nutritional content, and portion size influence purchase
  - Consumers’ readiness to adopt healthful diets
Methodology

- Natural experiment with 2 periods of data collection
- Convenience samples of potential users at point-of-purchase

**Before**

- Exit survey
  - N=296
- 6 weeks later
- Follow-up call
  - N=118

**After**

- Exit survey
  - N=239
- 6 weeks later
- Follow-up call
  - N=98

Implementation of intervention

May 2008  October 2008  May 2009
Measurements

- **Exit survey**
  - Stages of change related to the readiness to adopt healthful diets (Stages of Change Model)
    - Sequence of steps for successful behaviour change
    - Pre-contemplation ↔ Contemplation ↔ Preparation ↔ Action ↔ Maintenance

- **Follow-up phone call**
  - Stages of change re-assessed

### Characteristics of participants

<table>
<thead>
<tr>
<th></th>
<th>BEFORE (N=296)</th>
<th>AFTER (N=239)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sex (Women)</strong></td>
<td>68</td>
<td>80</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-24 years</td>
<td>10</td>
<td>13</td>
</tr>
<tr>
<td>25-39 years</td>
<td>61</td>
<td>57</td>
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<tr>
<td>≥ 40 years</td>
<td>29</td>
<td>31</td>
</tr>
<tr>
<td><strong>Education</strong></td>
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<td>High School or less</td>
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<td>22</td>
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<tr>
<td>College/professional</td>
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<td>36</td>
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<tr>
<td>University</td>
<td>41</td>
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<tr>
<td><strong>Status</strong></td>
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<td></td>
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<tr>
<td>Parent of a patient</td>
<td>68</td>
<td>71</td>
</tr>
<tr>
<td>Patient</td>
<td>11</td>
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<tr>
<td>Employee</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Other</td>
<td>13</td>
<td>10</td>
</tr>
</tbody>
</table>
What did participants purchase?

- Dairy & substitutes
- Water bottles
- Juice

BEFORE (340 items) AFTER (248 items)
Age of child for which purchase was made

- Increase in the proportion of items destined for children aged 1 to 3 years AFTER implementation of intervention
Factors influencing consumers’ selection

- Post-intervention participants more likely to endorse the item’s nutritional content and appropriate portion size as elements that influenced their purchase.
Readiness to adopt healthful diets

-most participants are in preparation stage

before (n=118)

follow-up phone call

exit survey

action/maintenance  preparation  contemplation

%
Transition between stages of change from exit survey to follow-up phone call

- No difference between Pre- and Post-intervention participants in the transition between stages of change from exit survey to follow-up phone call

Bibi: Before n=118, After n=98
Summary of findings

- Consumers are more likely to purchase healthier options if accessible.

- Point-of-purchase information that emphasises the nutritional content and appropriate portion sizes can influence consumers' selection.

- Majority of consumers were in ‘preparation stage’
  - Consumers are ready to start thinking about improving their diet.
Conclusion

- **Health Promoting Vending Machines**, one small step towards improved dietary environments
  - Changing norms (consumers and food industry)

- Policy implications
  - Recently adopted policy that requires all health institutions in Québec to improve their dietary environment by 2012
  - Ste-Justine’s *Health Promoting Vending Machines*: an example for others to follow
Acknowledgments

This study was conducted within the Center of Excellence in Health Promotion at Sainte-Justine Hospital, an initiative of the Fondation Lucie et André Chagnon.

The healthy vending machine concept was developed by the Direction of Health Promotion at Sainte-Justine Hospital.

AVH holds a CIHR Training Grant in Population Intervention for Chronic Disease Prevention.
Implementation Guide

Guide d’implantation des machines distributrices:

Available in French only