

Changing the Restaurant Environment to Improve Cardiovascular Health in a Rural Community: Implementation and Evaluation of the Heart of New Ulm (HONU) Project Restaurant Initiative

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Introduction

- ❑ The restaurant food environment contributes to increasing overweight and obesity trends with increased frequency of eating out and less healthful eating habits when eating out (e.g. larger portions, fewer fruit and vegetable options, higher sodium and fat intake).
- ❑ Rural areas are of concern due to fewer healthful food options, and disparities in obesity and cardiovascular disease (CVD).
- ❑ Despite substantial evidence of the associations between the restaurant food environment and obesity, interventions to improve the restaurant environment across a community are lacking.
- ❑ The goals of this study are to: 1) describe the implementation of an intervention to improve the restaurant food environment in a rural community, and 2) describe how healthy practices changed in community restaurants stratified by program participation level.

METHODS

Context

- ❑ The restaurant program is one component of the Heart of New Ulm (HONU), a 10-year population-based prevention project aimed at reducing CVD risk factors in the rural community of New Ulm, MN.
- ❑ HONU Interventions are delivered at all levels of the social ecological model ranging from a primary care phone coaching program to worksite wellness and built environment initiatives.
- ❑ HONU food environment initiatives include work with grocery stores, convenience stores, restaurants, farmers markets, as well promoting consumer demand for more healthful options.

Intervention

- ❑ Goal was to partner with restaurants to increase availability, identification, and promotion of healthier food options. Two key components:
 - Assessment of 16 healthy practices at all community restaurants and reporting results back to each restaurant
 - Implementation of a comprehensive restaurant program in the subset of restaurants that agreed to participate
- ❑ Assessments were done with the Nutrition Environment Survey for Restaurants (NEMS-R). The intervention focused on 16 Healthy Practices (HPs) derived from the NEMS-R.
- ❑ Restaurants were ranked as either **Bronze, Silver, Gold, or No Level** based on the number and which specific HPs were available.

- ❑ Restaurants received a report identifying which HPs they offered, level achieved, and steps they could take to increase the availability of healthful options. Restaurants were all invited to participate in the program at the time they received their results.
 - ❑ Restaurant program participants signed a one-year agreement to achieve all the HPs at specific level (Bronze, Silver or Gold). Restaurants were provided with dietitian consultation, staff training, and promotion of their restaurant by HONU through local media. Program activities varied by level.
- ### Measurement and Analysis
- ❑ The NEMS-R was conducted in all community restaurants to measure the 16 HPs at baseline (late 2010 to early 2011) and after the HONU Restaurant Intervention (July-December 2013). We compared changes in HPs over time for all restaurants in the community. We also compared change stratified by program participation and by restaurant type (independent versus chain).

RESULTS

Table 1. Baseline and Follow-Up for New Ulm Community Restaurants with 2 Completed Assessments (N=32).

| | Baseline (% yes) | Follow-up (% yes) | p-value |
|---|------------------|-------------------|---------|
| Bronze Healthy Practices | | | |
| 1. Baked chips offered when chips available | 10% | 23% | 0.129 |
| 2. Healthy side and drink offered for kids' menu | 22% | 41% | 0.032 |
| 3. 1+ half-portion entrée offered | 31% | 72% | <.001 |
| 4. 1+ non-fried vegetable side offered | 62% | 84% | 0.016 |
| 5. No/low fat salad dressing offered | 78% | 75% | 0.607 |
| 6. No/low fat milk and a no/low or calorie drink offered | 91% | 88% | 0.999 |
| Silver Healthy Practices | | | |
| 7. 3+ half-portion entrees offered | 22% | 50% | 0.022 |
| 8. Fruit or vegetable offered as a side for all entrees | 23% | 45% | 0.065 |
| 9. All healthy practices promoted on the menu prior to ordering | 23% | 19% | 0.999 |
| 10. Spreads/dressings served on the side when applicable | 25% | 34% | 0.615 |
| 11. 1+ whole grain option(s) offered for all applicable meals | 25% | 38% | 0.219 |
| 12. Sandwich buns not automatically buttered | 28% | 50% | 0.092 |
| 13. 1+ no sugar added sugar fruit side offered | 41% | 53% | 0.289 |
| 14. Olive oil/trans-fat free margarine available | 81% | 91% | 0.311 |
| 15. Trans-fat free/saturated fat free frying oil used daily | 94% | 94% | - |
| Gold Healthy Practices | | | |
| 16. 1+ HONU-approved healthy dish offered | 6% | 32% | 0.008 |
| Level Achieved based on Healthy Practices | | | |
| No Level | 78% | 63% | 0.199 |
| Bronze | 16% | 25% | |
| Silver | 3% | 3% | |
| Gold | 3% | 9% | |

- ❑ 12 (38%) participated in the formal 1-year restaurant program.
- ❑ Participating restaurants were more likely to be independent (8 of 12, 67%) than non-participating (10 of 20, 50% were independent).
- ❑ Those joining were more likely to have achieved at least Bronze at baseline.
- ❑ Restaurants with certain types of cuisine did not join the program (i.e., pizza, Chinese, and Mexican).
- ❑ Restaurants achieving at least Bronze went from 22% to 38%.
- ❑ Across all restaurants, the HPs most likely to improve included: non-fried vegetables, fruit, smaller portions, and whole grains.
- ❑ At non-participating restaurants HPs that improved included: non-fried vegetable availability (40% to 75%), half portions (10% to 55%), and fruit availability (30% to 45%).
- ❑ Restaurants participating in the program were more likely to achieve a HP level or increase to a higher one (from 7 to 11), than non-participating restaurants (from 0 to 1).
- ❑ At baseline chain restaurants were more likely to meet a program level (29%) compared to independent restaurants (17%). However, at follow-up there was no change in level achieved by chains (29%) and more than double proportion of independent restaurants meeting a level (44%).

Discussion

- ❑ Assessing all community restaurants with a validated tool, allowed a comprehensive look at the overall restaurant food environment, changes needed, and community change over time.
- ❑ Targeting implementation activities towards 16 specific HPs known to support healthful behaviors, enabled a practical approach to partnering with restaurants. However, the simple limited criteria was a barrier to joining for certain types of restaurants.
- ❑ Providing all restaurants with a tailored report based on their personalized assessment, may have increased awareness of opportunities for change regardless of participation in the comprehensive restaurant program.
- ❑ Intervention activities may have encouraged a movement to a higher restaurant achievement level greater than no intervention.
- ❑ Opportunities for improving the restaurant environment may be greater with independent restaurants.
- ❑ Assessing, targeting and strategically improving HPs in restaurants is one approach to improving the overall community food environment.