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Healthy Option Preferences of Rural Restaurant Customers

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Abstract

In preparation for an intervention study in three rural Iowa restaurants, 250 customers were surveyed regarding their interest in dietary change, perceptions of the restaurant, and interest in healthy options. Customers were ages 18 to 88, with a mean age of 52, and 53% were women. Most agreed that the restaurant offers healthy meals. Options customers stated they were most likely to order if available included meat that is baked or broiled, whole-wheat bread, fresh fruit or steamed vegetables, and regular salad dressing on the side. They were least interested in low-fat sour cream, low-fat salad dressing, low-fat milk, low-calorie dessert, and holding high-fat ingredients. Women were more likely to indicate interest in healthy options than were men. Interest in several options was also positively associated with age. Increasing the healthy options in restaurants may be especially effective in changing the dietary intake of women and older adults.

Introduction

Obesity has been declared a major public health problem in the United States, and concerns are growing that this will lead to large scale epidemics of obesity-related chronic conditions such as heart disease, diabetes, and some forms of cancer (Hedley et al., 2004). Rural areas of the country have been especially affected by this epidemic (Mokdad et al., 2000). Researchers have long recognized that this is a complex problem requiring attention on many ecological levels, including interventions in the social and physical environment (Egger & Swinburn, 1997). Because many people regularly eat in restaurants, this setting shows some promise as a possible point of environmental intervention. When designing restaurant-based interventions, customer preferences as well as the motivations and concerns of restaurant owners must be taken into account. Most restaurant studies have involved chains or larger, urban restaurants (Glanz et al., 2007; Horgen & Brownell, 2002). Very little is known about customer preferences and owner perspectives in rural, owner-operated restaurants. This article presents data from a customer survey conducted in preparation for a pilot intervention study in three owner-operated restaurants in rural Iowa. The survey assessed customer interest in dietary change generally, perceptions of the restaurant, and interest in a variety of healthy options that owners were willing to consider offering.

Background

Addressing decision making situations in the social and physical environment is consistent with major theories and frameworks of behavior change such as social cognitive theory (Bandura, 2004) and social ecological models (Sallis, Owen, & Fisher, 2008). Social Cognitive Theory, for example, includes the notion of reciprocal determinism, a complex interaction of factors related to the person, behavior and environment (physical and social) that is hypothesized to lead to behavior change and ultimately health outcomes (Bandura, 2004). In this framework, the broad category of “environmental factors” may include complex and long-standing social structures that are difficult to change, but may also include opportunities for persons to make healthy choices (Bandura, 1997). Interventions addressing the latter may be quite simple, passive, and brief such as signage that provides a “cue” encouraging a person to

make a healthier choice (Bandura, 1997). Social ecological models also suggest that health behaviors are influenced by factors in one's social or physical environment, in addition to factors at the individual or policy level. These models note that behaviors occur in particular settings as well, offering opportunities for targeted intervention. (Sallis et al., 2008). The research literature regarding restaurant-based interventions is limited, but does show some promise for changing eating behaviors by applying this relatively simple concept of environmental cues. Point of purchase interventions in general (e.g., in grocery stores, vending machines, schools, worksite cafeterias, and restaurants) tend to show an increase in purchase of healthier options when these items are promoted through various environmental cues such as signs with nutrition information or a comparison to less healthy choices. Price seems to especially affect purchasing decisions (Buttriss et al., 2004; French, Jeffery, Story, Hannan, & Snyder, 1997; Holdsworth & Haslam, 1998; Horgen & Brownell, 2002). The idea behind such interventions is to make it easier for people to make healthy choices, and in some situations, to give them at least the option of a healthier choice where none had previously existed.

Restaurants are a unique environment, however, in that some customers are there for the express purpose of indulging. This is especially true for persons who only occasionally eat out (Fitzpatrick, Chapman, & Barr, 1997). Some studies have found that women and older adults tend to be more interested in having healthy options available to them in restaurants (Albright, Flora, & Fortmann, 1990). In addition, some research suggests that labeling a menu item as "healthy" evokes a negative reaction from customers who equate "healthy" with lack of flavor (Horgen & Brownell, 2002). On a more positive note, customers tend to look favorably on a restaurant that provides healthy options for the public, even if they themselves would not choose those options (Fitzpatrick et al., 1997). To our knowledge, no studies have documented the preferences of restaurant customers in the rural Midwest region in regard to healthier menu options. Understanding these preferences in a particular population is important when planning restaurant based interventions so that menu choices will be acceptable to the majority of customers.

In addition to customer preferences, the perspective of the owner is important to consider. There is some evidence that many restaurant owners want their restaurant to be seen as providing healthy options (Benson, 1995; Macaskill, Dwyer, Uetrecht, & Dombrow, 2003). Research also suggests that programs that promote simple changes to the usual menu offerings may be more acceptable to restaurant owners than those that require posting of nutritional information (Green, Steer, Maluk, Mahaffey, & Muhajarine, 1993). Discussions with owners of rural restaurants in the area where the present study took place confirmed that they prefer this approach as well. These owners were concerned that making even modest changes to their menu would cause them to lose customers.

This report presents data from a baseline customer survey conducted just prior to implementation of a pilot intervention study. Results were used to design a low-cost, low-risk intervention in three owner-operated rural restaurants. Specifically, the survey was intended to document general interest in dietary changes, to determine baseline customer perceptions of the restaurants, and to identify which healthy menu options (of those the owners were willing to offer) would most appeal to customers. These options would later be incorporated into an intervention designed to provide an environmental cue toward making healthier choices.

Methods

Setting and data collection

The customer survey was conducted in three restaurants that were all owner-operated (not chains or franchises), had been in business for at least one year, had a predominantly rural customer base that did not overlap appreciably with that of the other restaurants, and were in

three different towns, all within approximately one hour's drive from the University of Iowa. They were all full menu, sit-down restaurants, not bars, and located in a small town with a population of less than 12,000. Restaurants were identified by University personnel and others familiar with nearby rural towns. Owners were initially contacted by telephone and subsequently met with the principal investigator in person to discuss the requirements of the study. All of those approached agreed to participate. Data collection took place in May and June of 2007. All data collection and management procedures were approved by the Institutional Review Board of the University of Iowa.

A trained research assistant approached all customers who appeared to be at least 18 years old to invite them to participate in the self-administered survey. Customers were approached after their food order had been taken, but before their food arrived. The survey was anonymous and thus written consent was not obtained, however a handout describing the study was given to potential participants. Each restaurant was visited during a weekday lunch, weekday dinner, weekend lunch and weekend dinner in order to sample a variety of customers. Customers were surveyed only once, and after four visits to each restaurant, it was clear that a saturation point had been reached such that most customers had already been approached about the study.

Measures

The survey instrument was three pages long, and was identical across the three restaurants. Most respondents completed it in approximately 2 minutes. The first page included items related to frequency of eating out, interest in dietary change and perceptions of the restaurant, while the second page inquired about the likelihood of ordering a series of healthy options. The third page requested demographic information including age and gender, and also offered several lines of blank space where customers could write in any additional comments. The specific questions and response choices are outlined in table 2 and table 3. The list of healthy options was derived from a process which began with a review of the literature on restaurant interventions, followed by discussions with rural restaurant owners regarding the types of adjustments or options they were already willing to make available, but did not necessarily advertise. This survey was initially tested for clarity and ease of use (face validity) with a sample of 89 restaurant customers in another rural community. A test-retest of the instrument with a two week interval yielded an average item intra-class correlation coefficient of .87, indicating good reliability. For many of the questions regarding healthy options, participants were allowed to respond "do not use/eat". Because very few persons chose those responses they were included in the "not at all likely" category in the analyses.

Data analysis

The SAS statistical software was used for all analyses ("SAS Institute, Inc, SAS procedures guide, version 9.1.," 2004). Less than 5% of data were found to be missing, and no data were imputed. Analysis of variance (PROC ANOVA) was used to check for differences across the three restaurants in the case of continuous measures, whereas Chi-square analysis was used for categorical data. Descriptive statistical analyses were used to examine the demographic distribution of participants, frequency of eating out, and general interest in dietary change. Gender differences in responses were examined using T-tests, while age differences were examined with multivariate regression (PROC GLM) with contrasts to test for trend across age groups and across categories of visit frequency. Considering the types of questions asked, the preliminary data in hand, and the analyses proposed above as well as the anticipated intervention, a sample size of 70 participants per restaurant was determined to be appropriate (80% power).

Results and Discussion

Only minor differences in responses and demographic characteristics were found across participants in the three restaurants, thus, data were combined for purposes of this report. A total of 250 customers were surveyed with 70, 76, and 104 persons from each restaurant respectively. Response rates ranged from 77% to 90% using number of persons approached about the survey as the denominator. The rural areas served by these restaurants are populated almost exclusively by non-Hispanic whites, and only one study participant was determined on appearance to be non-white. The age and gender distributions are presented in Table 1. The age of respondents ranged from 18 to 88, with a mean of 52 years. Men comprised 47% of those surveyed.

A total of 59% of participants indicated they were trying to make some kind of diet change, with 41% trying to lose weight, and 35% trying to eat less fat. Fewer participants reported trying to eat less salt (18%) or trying to make other diet changes (9%). Forty percent of participants reported that they eat out at least 3 times per week, while 39% and 20% eat out 1–2 times per week and 1–3 times per month respectively. Only one person indicated they eat out less than once per month.

Table 2 presents overall findings and gender differences in perceptions of the restaurants and likelihood of asking for healthy options. No gender differences were found with regard to perceptions of the restaurant. On average, both men and women indicated that they “agree” with the statements “this restaurant offers a good selection of healthy meals” and “makes it easy for a person to make healthy food choices”. In contrast, men and women both tended to disagree with the statement “I would come here more often if they increased the number of healthy choices on the menu”. They also both disagreed with the statement “Anything that is healthy on a menu probably tastes bad”.

Overall, the five most highly endorsed healthy options were whole wheat bread, fresh fruit as a side dish, meat that is grilled or baked, fresh/steamed vegetables as a side dish, and regular salad dressing served on the side. The five least endorsed healthy options included low-fat sour cream, low-calorie dessert, low-fat salad dressing, low-fat milk, and holding one or more high-fat ingredients. Women were more likely than men ($p < .05$) to indicate interest in eight of the fourteen healthy “options” listed in the survey instrument. For another five, women again indicated more interest but the difference was not statistically significant.

Table 3 presents findings of age differences in perceptions of the restaurants and likelihood of asking for healthy options. A statistically significant age group difference, with a significant trend across groups was found only for the perception that the restaurant “makes it easy for a person to make healthy choices”. Agreement with this statement increased with age. With regard to interest in healthy options, increasing age was associated with greater interest in smaller portions, low-calorie desserts, and holding one or more high-fat ingredients. A small gradient by age was also noted for interest in meat that is grilled or baked, fish that is grilled or baked, and low-fat milk, though these group differences did not reach statistical significance. No significant differences in perceptions or likelihood of asking for healthy options were found across the visit frequency groups (data not shown).

Comments in the blank space at the end of the survey were dominated by requests for specific foods not currently on the menu and comments about service.

The proportion of persons trying to lose weight (41%) is somewhat higher than that found nationally (31%) (Kruger, Galuska, Serdula, & Jones, 2004), but similar to that found in studies conducted elsewhere in rural Iowa (45%) (Nothwehr & Yang, 2007). The findings on restaurant

visit frequency are consistent with other research showing that most Americans eat many of their meals away from home (Guthrie, Lin, & Frazao, 2002).

These results suggest that most customers felt the current restaurant offerings allowed one to make healthy choices, though there was still room for improvement in regard to this measure. Results also indicate that using the word “healthy” to describe certain options may not actually serve as a deterrent for most customers when ordering their meal, contrary to the findings of other studies (Horgen & Brownell, 2002) .

The findings on interest in healthy options cannot be directly compared to results in previous studies since the questions were uniquely designed for this study. In addition, findings may not be generalizable to populations that are demographically different, and the possibility of some response bias must be considered. However, the general pattern of greater interest in healthy options among women and older adults is consistent with previous studies (Albright et al., 1990). It is encouraging to note the overall level of interest in general dietary change and in having some relatively simple, healthier options available. This bodes well for designing restaurant-based interventions that are acceptable to both owners and customers alike.

Conclusions/implications for applications

In addition to chain and large urban restaurants, state licensing data suggest there exist large numbers of owner-operated rural restaurants regularly serving populations at risk for obesity and subsequent negative health outcomes. Findings of this study suggest that many customers of these restaurants are interested in having healthy options available to them when they eat out. According to the owners of these restaurants, many of the preferred options could be made available at little or no cost to them, and in fact they already provide the option upon special request (e.g., toppings on the side, smaller portions; bake or broil meat or fish). A pilot intervention study is currently underway in these three restaurants, evaluating the effects of advertising the availability of healthy options to customers using table top signs. The findings presented here may also provide impetus for differently designed programs or research efforts in rural restaurant settings. As others have noted, restaurant owners are highly influenced by profit margins when they consider the content of their menus (Glanz et al., 2007). Encouraging customer demand for healthier fare may eventually help to change community norms around restaurant dining, and together with other intervention approaches and policies, contribute to improving the diet and health of targeted communities.

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References

- Albright CL, Flora JA, Fortmann SP. Restaurant menu labeling: impact of nutrition information on entree sales and patron attitudes. *Health Educ Q* 1990;17(2):157–167. [PubMed: 2347693]
- Bandura, A. Developmental Analysis of Self-Efficacy. In: Bandura, A., editor. *Self-Efficacy: The Exercise of Control*. New York: W.H. Freeman and Company; 1997. p. 162-163.
- Bandura A. Health promotion by social cognitive means. *Health Education & Behavior* 2004;31(2):143–164. [PubMed: 15090118]
- Benson W. Strategies and willingness of rural restaurateurs to promote healthy foods. *Canadian Journal of Public Health* 1995;86(3):181–184.
- Buttriss J, Stanner S, McKeivith B, Nugent A, Kelly C, Phillips F, et al. Successful ways to modify food choice: lessons from the literature. *British Nutrition Foundation Nutrition Bulletin* 2004;29:333–343.

- Egger G, Swinburn B. An “ecological” approach to the obesity pandemic. *Bmj* 1997;315(7106):477–480. [PubMed: 9284671]
- Fitzpatrick MP, Chapman GE, Barr SI. Lower-fat menu items in restaurants satisfy customers. *Journal of the American Dietetic Association* 1997;97(5):510–514. [PubMed: 9145089]
- French SA, Jeffery RW, Story M, Hannan P, Snyder MP. A pricing strategy to promote low-fat snack choices through vending machines. *American Journal of Public Health* 1997;87(5):849–851. [PubMed: 9184519]
- Glanz K, Resnicow K, Seymour J, Hoy K, Stewart H, Lyons M, et al. How major restaurant chains plan their menus: the role of profit, demand, and health. *Am J Prev Med* 2007;32(5):383–388. [PubMed: 17478263]
- Green KL, Steer SL, Maluk RE, Mahaffey SM, Muhajarine N. Evaluation of the Heart Smart Restaurant Program in Saskatoon and Regina, Saskatchewan. *Canadian Journal of Public Health. Revue Canadienne de Sante Publique* 1993;84(6):399–402. [see comment]. [PubMed: 8131143]
- Guthrie JF, Lin BH, Frazao E. Role of food prepared away from home in the American diet, 1977–78 versus 1994–96: changes and consequences. *J Nutr Educ Behav* 2002;34(3):140–150. [PubMed: 12047838]
- Hedley AA, Ogden CL, Johnson CL, Carroll MD, Curtin LR, Flegal KM. Prevalence of overweight and obesity among US children, adolescents, and adults, 1999–2002. *JAMA* 2004;291(23):2847–2850. [see comment]. [PubMed: 15199035]
- Holdsworth M, Haslam C. A review of point-of-choice nutrition labelling schemes in the workplace, public eating places and universities. *Journal of Human Nutrition & Dietetics* 1998;11(5):423–445.
- Horgen KB, Brownell KD. Comparison of price change and health message interventions in promoting healthy food choices. *Health Psychology* 2002;21(5):505–512. [PubMed: 12211518]
- Kruger J, Galuska DA, Serdula MK, Jones DA. Attempting to lose weight: specific practices among U.S. adults. *American Journal of Preventive Medicine* 2004;26(5):402–406. [PubMed: 15165656]
- Macaskill LA, Dwyer JJ, Uetrecht CL, Dombrow C. Eat Smart! Ontario's Healthy Restaurant Program: a survey of participating restaurant operators. *Can J Diet Pract Res* 2003;64(4):202–207. [PubMed: 14675501]
- Mokdad AH, Serdula MK, Dietz WH, Bowman BA, Marks JS, Koplan JP. The continuing epidemic of obesity in the United States. *JAMA* 2000;284(13):1650–1651. [see comments.]. [PubMed: 11015792]
- Nothwehr F, Yang J. Goal setting frequency and the use of behavioral strategies related to diet and physical activity. *Health Educ Res* 2007;22(4):532–538. [PubMed: 17032703]
- Sallis, J.; Owen, N.; Fisher, B. Ecological Models of Health Behavior. In: Glanz, K.; Rimer, B.; Viswanath, K., editors. *Health Behavior and Health Education. Theory, Research, and Practice*. 4th ed.. San Francisco: Josey-Bass; 2008. p. 465-485.
- Institute, Inc. SAS procedures guide, version 9.1. Cary, NC: SAS Institute, Inc; 2004.

Table 1

Participant Characteristics (N=250).

Age	
Range	18–88yrs.
Mean	52yrs (s.d.17.1)
Distribution	
18–39yrs	61 (24%)
40–59yrs	98 (39%)
60–88yrs	83 (33%)
missing	8 (.03%)
Gender	
Men	117 (47%)
Women	132 (53%)
Dietary behavior	
<i>Are you currently trying to: (circle all that apply)</i>	
lose weight	41%
eat less fat	35%
eat less salt	18%
other diet change	9%
not trying to change diet	41%
<i>How often do you eat out?</i>	
At least 3 times/week	100 (40%)
1–2 times/week	98 (39%)
13 times/month	20 (20%)
less than once/month	1

Table 2

Overall findings and gender differences in perceptions and likelihood of asking for healthy options.

		Mean (s.d.)	T-test p-value
Perceptions			
<i>How much do you agree or disagree with the following statement? (1=strongly disagree, 2=disagree, 3= agree,4= strongly agree)</i>			
This restaurant offers a good selection of healthy meals	Men	2.99 (.59)	.81
	Women	3.00 (.51)	
	Overall	3.00 (.55)	
This restaurant makes it easy for a person to make healthy food choices.	Men	3.04 (.50)	.65
	Women	3.06 (.47)	
	Overall	3.05 (.48)	
I would come here more often if they increased the number of healthy choices on the menu.	Men	2.31 (.81)	.27
	Women	2.42 (.72)	
	Overall	2.37 (.77)	
Anything that is "healthy" on a menu probably tastes bad.	Men	1.88(.67)	.37
	Women	1.82 (.57)	
	Overall	1.85 (.62)	
Options			
<i>If the following options were available, how likely is it you would ask for them when you placed your order? (1=not at all likely; 2=somewhat likely; 3=very likely)</i>			
Butter or margarine "on the side"	Men	1.94 (.78)	.33
	Women	2.04 (.81)	
	Overall	2.0 (.08)	
Regular sour cream "on the side"	Men	1.89 (.80)	.13
	Women	2.05 (.83)	
	Overall	1.97 (.82)	
Regular salad dressing "on the side"	Men	2.11 (.82)	.01
	Women	2.37 (.75)	
	Overall	2.25 (.79)	
Low-fat sour cream "on the side"	Men	1.49 (.76)	.38
	Women	1.58 (.84)	
	Overall	1.54 (.80)	
Low-fat salad dressing "on the side"	Men	1.66 (.81)	.05
	Women	1.89 (.92)	
	Overall	1.78 (.87)	
Fresh fruit as a side dish	Men	2.38 (.69)	.31

		Mean (s.d.)	T-test p-value
	Women	2.47 (.67)	
	Overall	2.43 (.68)	
Fresh/steamed vegetables as a side dish	Men	2.35 (.77)	.94
	Women	2.34 (.78)	
	Overall	2.35 (.77)	
Smaller portions of entrees (at a lower price than the full portion)	Men	1.79 (.73)	<.0001
	Women	2.43 (.66)	
	Overall	2.13 (.76)	
Meat that is grilled or baked instead of breaded or fried	Men	2.27 (.76)	.001
	Women	2.56 (.57)	
	Overall	2.42 (.68)	
Fish that is grilled or baked instead of breaded or fried.	Men	2.06 (.84)	.009
	Women	2.33 (.78)	
	Overall	2.21 (.82)	
Whole grain bread instead of white	Men	2.34 (.82)	.02
	Women	2.56 (.73)	
	Overall	2.46 (.78)	
Low calorie dessert	Men	1.50 (.73)	<.0001
	Women	1.98 (.83)	
	Overall	1.76 (.82)	
Low fat milk	Men	1.76 (.86)	.01
	Women	2.05 (.91)	
	Overall	1.91 (.77)	
Leave out ("hold") one or more high-fat ingredients (for example from a sandwich)	Men	1.65 (.72)	<.0001
	Women	2.16 (.74)	
	Overall	1.92 (.77)	

Table 3

Age differences in perceptions and likelihood of asking for healthy options.

	Age group (years)	Mean (s.d.)	p-value overall/test for trend
Perceptions			
<i>How much do you agree or disagree with the following statement? (1=strongly disagree, 2=disagree, 3= agree, 4= strongly agree)</i>			
This restaurant offers a good selection of healthy meals	18–39	2.95 (.51)	.70 / .42
	40–59	3.01 (.57)	
	60–88	3.03 (.56)	
This restaurant makes it easy for a person to make healthy food choices.	18–39	2.88 (.49)	.009 / .005
	40–59	3.09 (.51)	
	60–88	3.11 (.42)	
I would come here more often if they increased the number of healthy choices on the menu.	18–39	2.46 (.80)	.62 / .45
	40–59	2.34 (.72)	
	60–88	2.35 (.79)	
Anything that is “healthy” on a menu probably tastes bad.	18–39	1.97 (.65)	.30 / .17
	40–59	1.82 (.60)	
	60–88	1.82 (.65)	
Options			
<i>If the following options were available, how likely is it you would ask for them when you placed your order? (1=not at all likely; 2=somewhat likely; 3=very likely)</i>			
Butter or margarine “on the side”	18–39	2.03 (.84)	.92 / .80
	40–59	1.98 (.76)	
	60–88	2.00 (.82)	
Regular sour cream “on the side”	18–39	1.98 (.88)	.42 / .50
	40–59	2.05 (.76)	
	60–88	1.89 (.84)	
Regular salad dressing “on the side”	18–39	2.12 (.85)	.11 / .49
	40–59	2.37 (.75)	
	60–88	2.21 (.79)	
Low-fat sour cream “on the side”	18–39	1.54 (.88)	.94 / .92
	40–59	1.52 (.75)	
	60–88	1.56 (.81)	
Low-fat salad dressing “on the side”	18–39	1.70 (.93)	.47 / .28
	40–59	1.72 (.84)	
	60–88	1.66 (.87)	

	Age group (years)	Mean (s.d.)	p-value overall/test for trend
Fresh fruit as a side dish	18–39 40–59 60–88	2.43 (.74) 2.39 (.65) 2.49 (.67)	.65 / .59
Fresh/steamed vegetables as a side dish	18–39 40–59 60–88	2.25 (.87) 2.38 (.75) 2.40 (.72)	.44 / .23
Smaller portions of entrees (at a lower price than the full portion)	18–39 40–59 60–88	1.97 (.73) 2.07 (.82) 2.36 (.68)	.005 / .002
Meat that is grilled or baked instead of breaded or fried	18–39 40–59 60–88	2.34 (.68) 2.37 (.71) 2.56 (.66)	.12 / .07
Fish that is grilled or baked instead of breaded or fried.	18–39 40–59 60–88	2.05 (.80) 2.19 (.83) 2.33 (.82)	.14 / .05
Whole grain bread instead of white	18–39 40–59 60–88	2.44 (.76) 2.38 (.82) 2.56 (.76)	.34 / .40
Low calorie dessert	18–39 40–59 60–88	1.59 (.74) 1.69 (.82) 2.00 (.83)	.005 / .003
Low fat milk	18–39 40–59 60–88	1.73 (.84) 1.91 (.88) 2.05 (.94)	.12 / .04
Leave out (“hold”) one or more high-fat ingredients (for example from a sandwich)	18–39 40–59 60–88	1.80 (.68) 1.82 (.79) 2.10 (.79)	.03 / .02