Published in final edited form as:

Patient Educ Couns. 2009 November ; 77(2): 314–318. doi:10.1016/j.pec.2009.03.032.

Focus Groups Inform a Web-Based Program to Increase Fruit and Vegetable Intake

Sharon J. Rolnick, PhD, MPH¹, Josephine Calvi, MPH², Jerianne Heimendinger, ScD, MPH, RD⁴, Jennifer B. McClure, PhD⁵, Mary Kelley, BA¹, Christine Johnson, PhD³, and Gwen L. Alexander, PhD³

Sharon J. Rolnick: cheri.j.rolnick@HealthPartners.com; Josephine Calvi: Josephine.calvi@kp.org; Jerianne Heimendinger: Jerianneb@earthlink.net; Jennifer B. McClure: McClure.j@ghc.org; Mary Kelley: mary.e.kelley@HealthPartners.Com; Christine Johnson: cjohnso1@hfhs.org; Gwen L. Alexander: galexan2@hfhs.org

¹ HealthPartners Research Foundation, Minneapolis, MN

² Kaiser Permanente Georgia, 3495 Piedmont Road, Atlanta, GA 30341

³ Henry Ford Health System, Detroit, MI

⁴ Consultant, Manitou Springs, CO

⁵ Group Health Center for Health Studies, Seattle, WA

Abstract

Objective—To use focus groups to inform a web-based educational intervention for increased fruit and vegetable (FV) consumption.

Methods—Twelve groups (participants =137, aged 21–65) were recruited from four geographically diverse health systems. Four groups were stratified by gender and eight by race (white and African American) and gender. Questions included perceptions of healthy eating, factors that encourage or serve as barriers to FV consumption and features preferred for a web-based educational intervention.

Results—Though knowledgeable about healthy eating, participants did not know how to achieve or always care about healthy nutritional choices. Motivators for FV consumption included being role models and health concerns. Barriers included: lack of time, expense and FV availability. Website preferences included: visuals, links, tailored materials, menu suggestions, goal setting assistance, printable summaries and built in motivation. The developers incorporated nearly all suggestions.

Conclusion—Focus groups provided needs-based tactical strategies for an online, education intervention targeting factors to improve FV consumption.

Practice Implications—Focus groups can provide valuable input to inform interventions. Further, web-based programs' abilities to offer information without time or geographic constraints, with capacity for tailoring and tracking progress makes them a valuable addition in the arsenal of efforts to promote healthy behaviors.

*Corresponding author: Sharon J Rolnick; Ph.D., MPH, HealthPartners Research Foundation, P.O. BOX 1524, MS 21111R, Minneapolis, MN 55440-1524, Telephone: 952-967-5016, Fax: 952-967-5022, e-mail Cheri.J.Rolnick@healthpartners.com.

Publisher's Disclaimer: This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Keywords

Fruit and Vegetable Consumption; Patient education; Internet; Focus Groups; Web-based interventions; Health Maintenance Organization

1. Introduction

A diet rich in fruit and vegetables (FV) is associated with the prevention of numerous diseases. [1–5] While FV consumption benefits have received attention, studies indicate that most adults do not meet the recommended daily minimum servings [6–10] and knowledge appears insufficient to modify behavior. [11–14] Interventions, including counseling as well as tailored, print-based education, have had some success but are limited due to cost and reach. [7, 15–20] However, internet interventions are unconstrained by time and geographic boundaries. [16, 21–25]

To inform the design of a web-based intervention to increase FV intake, we conducted focus groups in four health systems with geographic and racial diversity. The purpose of this paper is to present focus group findings which informed the web-based intervention for the Making Effective Nutritional Choices for Cancer Prevention: The MENU Study. [26]

2. Methods

This study was conducted as part of the HMO Cancer Research Network, a population-based consortium, funded by the National Cancer Institute and committed to the study of cancer. [27] Four of five collaborating HMOs (Henry Ford Health System/Health Alliance Plan (Detroit, Michigan), HealthPartners and HealthPartners Research Foundation (Minneapolis, Minnesota), Kaiser Permanente Georgia (Atlanta, Georgia), and Group Health (Seattle, Washington) obtained institutional review board permission for these analyses.

2.1 Participants

All participants were HMO members, aged 21–65, not pregnant, not employed in the health field, and residing in the area $\geq$ three years. Participants had English as a first language, ate <7 FV servings/day and used e-mail at least twice a week. Ineligibility included patients undergoing treatment for cancer, taking anticoagulation medications, or having a diagnosis for which diet change was contraindicated.

Anticipating that dietary behavior might vary by gender or race, [28–30] the 12 focus groups were stratified on these factors. Four groups were divided by gender only and eight by race [white versus African American (AA)] and gender.

2.2 Subject Recruitment

Recruitment strategies varied by site but included targeted (age, race, sex) random sample mailings and flyers placed in clinics. Prospective participants were contacted by phone, screened for eligibility and scheduled into the appropriate focus group. Approximately 12 people were scheduled per group, with the expectation that eight would attend.

Prior to the focus groups, participants were invited to visit a web-based program (HealthMedia® Nourish™; HealthMedia, Inc.) a prototype for web-based interventions that provided personalized feedback about increasing FV intake.

2.3 Focus Group Sessions

Each session lasted approximately two hours, followed standardized methods,[31] a scripted discussion, and was facilitated by the same investigator (GA) along with a local HMO staff member. Topics included food preferences, purchasing and preparation, attitudes, beliefs and perceptions on healthy eating, and factors that encourage or serve as barriers to eating FV. Focus groups also discussed the Nourish™ website's navigation, design features and educational content. Findings were used to optimize the applicability and appeal of the MENU intervention. Sessions were audiotaped and notes were taken. At the conclusion, participants completed a survey on demographics and received a \$50.00 reimbursement.

2.4 Data Analysis

Audiotapes were transcribed locally and de-identified. Responses were collated by question and thematic analysis by two authors identified common themes. A third author independently reviewed analyzes for final data interpretation [32]. Frequencies were run on all variables and chi-squares were used to assess differences by race and/or gender.

3. Results

There were a total of 137 participants in the 12 focus groups. Participants were predominantly well educated (post high-school: 59%), ate 3–6 FV per day (60%) and used the Internet frequently (70%) (Table 1).

3.1 Perceptions of healthy eating

Most participants (regardless of gender or race) were aware of aspects related to healthy eating. Participants offered numerous recommendations on what to eat, what to avoid and behaviors to adopt (Table 2). When commenting on why women eat more FV than men, both genders felt this was due to women's increased responsibility for food. Both sexes perceived women as health and weight conscious and as media targets for “messages about nutrition” because they are mothers and family care-takers. They are also more responsible for food shopping (80% women versus 50% men) and preparation (85% versus 25%).

3.2 Factors that Encourage or Serve as Barriers

Two primary motivations for FV intake were serving as role models and concerns for personal and family health (Table 2). This was true across sex, race and region. Convenience was also key. Having “grab and go” pre-cut vegetables, while more expensive, was appealing, as were fruits that are easy to peel (bananas), rather than “messy” (oranges) or “get in my teeth” (apples). Participants reported fewer barriers for FV consumption in the summer due to the increased variety, availability, freshness and affordability.

Barriers included: time, expense, inconvenience and lack of concern, particularly if “feeling ok.” Most participants reported not eating enough FV, but only half expressed concern. Men were more complacent than women. They commented that the places they go (work, ballpark, golf course, bar, traveling) did not foster good nutritional behaviors. Men felt less pressure to be thin, paid less attention to health/weight and attributed women's concern for eating FV to control weight to being “less... physically active than men”.

3.3 Web-Based Nutrition Intervention

Using the Nourish™ website as a reference, participants discussed their web preferences (Table 3). They preferred easy access and navigation. Nourish™ was too long, “too dense”, log-on was often slow and its navigation was problematic.

They requested “short and focused” “how-to” information with illustrations showing portion sizes, food preparation and determining ripeness. They recommended links to information and printable summaries usable as daily reminders. Men particularly wanted to self-navigate across program features, selecting topics of interest rather than following a prescribed order.

When asked how a web-based program could encourage FV intake, participants suggested information on daily serving amounts and meal plans, testimonials from people who benefitted by eating more FV and realistic goal setting. They preferred personalized materials and information on the consequences of non-attention to healthy eating. The intervention should motivate them; “wellness is something to look forward to” and monitor progress.

4. Discussion and Conclusion

4.1 Discussion

This qualitative study explored attitudes and behaviors related to FV consumption among a gender-balanced, medically-insured, racially and geographically-diverse population, who generally knew about healthy food consumption but not how to achieve FV recommendations. Focus group participant comments were consistent with the literature regarding healthy eating: what to eat, not eat and behaviors to employ. [33–35] Also consistent were motivating factors for eating FV, especially for women.[34,36,37] The literature purports, and our findings substantiate, that women are more concerned with food quality, nutrition, weight management and have more self-efficacy for FV intake.[37–39] Women take more responsibility for food purchase and preparation, and are more apt to read materials stressing the importance of healthy eating.[38] The barriers - time, money, and convenience - were also consistent with previous findings. [34,40–44] Others have also reported on the need for flexibility if programs are to be successful.^{51, 55}

Participants’ exposure to the sample website prior to focus group participation afforded a rich discussion on website content, appearance and navigation. The MENU developers incorporated most suggestions into the intervention. 34 The resultant web-site was light on text, easy to navigate, included videos on food preparation with printable summaries of ingredients and included requested topics, such as how to select ripe produce and clean it of pesticides, nutritional values, setting reasonable goals, FV substitutions and strategies for getting children to eat FV. The website encouraged participants to try new kinds of FV and provided a large selection of recipes. In-depth information was placed as sidebars and links were imbedded within the content.

4.1.1 Study Limitations—Participants were self-selected volunteers, primarily white, over age 31, and with higher-level education. Findings may be limited to our insured, generally healthy adult sample, having access to the Internet and not necessarily representative of the general population. Other weaknesses include the one-time data capture and a fairly high FV consumption at baseline. We also may have enhanced the analysis had we maintained a stronger audit trail and by use of qualitative software for analysis. However, the numerous groups from four health systems with sex, racial and geographic diversity strengthened our understanding of attitudes and behaviors around eating FV. Contrary to our expectations, there were no differences in comments by sex or race. To our knowledge, no other gender and race-stratified focus groups have been reported across multiple geographic regions on FV intake.

4.2 Conclusion

Multiple, stratified focus groups informed the construction and content of a multi-faceted web-based intervention designed to improve FV consumption.

4.3 Practice Implications

Focus groups proved valuable in providing tactical strategies that were incorporated into an online, education intervention targeting factors to improve FV consumption. Further, web-based programs' abilities to offer information without time or geographic constraints, with capacity for tailoring and tracking progress towards a goal makes them a valuable addition in the arsenal of efforts to promote healthy eating and healthy lifestyles. In addition, once shown to be effective, a web program could be adapted for specific target groups on a variety of topics.

Acknowledgments

We acknowledge the National Cancer Institute for funding this study, Marci Campbell, PhD, RD for her assistance in directing the focus of the manuscript, and the MENU Study team, including individuals not listed as authors on this manuscript, who all contributed to this success of this study.

This study was funded by the National Cancer Institute (U19 CA79689-030, Increasing Effectiveness of Cancer Control Interventions, Edward H. Wagner, MD, PI

References

1. Adams SM, Standridge JB. What should we eat? Evidence from observational studies. *South Med J* Jul;2006 99(7):744–748. [PubMed: 16866057]
2. Bowen D, Beresford S. Dietary interventions to prevent disease. *Ann Rev Public Health* 2002;23:255–286. [PubMed: 11910063]
3. Pavia M, Pileggi C, Nobile CG, Angelillo IF. Association between fruit and vegetable consumption and oral cancer: a meta-analysis of observational studies. *Am J Clin Nutr* May;2006 83(5):1126–1134. [PubMed: 16685056]
4. Potter JD. Vegetables, fruit, and cancer. *Lancet* Aug 13–19;2005 366(9485):527–530. [PubMed: 16099275]
5. Rayner M. Vegetables and fruit are good for us so why don't we eat more? . *Br J Nutr* Aug;1998 80(2):119–120. [PubMed: 9828751]
6. Fruit and vegetable consumption among adults--United States 2005. *MMWR Morb Mortal Wkly Rep* Mar 16;2007 56(10):213–217. [PubMed: 17363889]
7. Anderson AS, Cox DN, McKellar S, Reynolds J, Lean ME, Mela DJ. Take Five, a nutrition education intervention to increase fruit and vegetable intakes: impact on attitudes towards dietary change. *Br J Nutr* Aug;1998 80(2):133–140. [PubMed: 9828754]
8. Casagrande SS, Wang Y, Anderson C, Gary TL. Have Americans increased their fruit and vegetable intake? The trends between 1988 and 2002. *Am J Prev Med* Apr;2007 32(4):257–263. [PubMed: 17383556]
9. Starkey LJ, Johnson-Down L, Gray-Donald K. Food habits of Canadians: comparison of intakes in adults and adolescents to Canada's food guide to healthy eating. *Can J Diet Pract Res* Summer;2001 62(2):61–69. [PubMed: 11518556]
10. Serdula MK, Gillespie C, Kettel-Khan L, Farris R, Seymour J, Denny C. Trends in fruit and vegetable consumption among adults in the United States: behavioral risk factor surveillance system, 1994–2000. *Am J Public Health* Jun;2004 94(6):1014–1018. [PubMed: 15249308]
11. Axelson M, Federline T, Birnberg D. A meta-analysis of food and nutrition-related research. *J Nutr Edu* 1985;17:51–54.
12. Shepherd R, Stockley L. Nutrition knowledge, attitudes and fat consumption. *J Am Diet Assoc* 1987;87:615–619. [PubMed: 3571779]
13. Shepherd R, Towler G. Nutrition knowledge, attitudes, and fat intake: application of the theory of reasoned action. *J Hum Nutr Diet* 1992;5:387–397.
14. Worsley A. Nutrition knowledge and food consumption: can nutrition knowledge change food behaviour? *Asia Pac J Clin Nutr* 2002;11(Suppl 3):S579–S585. [PubMed: 12492651]
15. Noar SM, Benac CN, Harris MS. Does tailoring matter? Meta-analytic review of tailored print health behavior change interventions. *Psychol Bull* Jul;2007 133(4):673–693. [PubMed: 17592961]

16. Pomerleau J, Lock K, Knai C, McKee M. Interventions designed to increase adult fruit and vegetable intake can be effective: a systematic review of the literature. *J Nutr* Oct;2005 135(10):2486–2495. [PubMed: 16177217]
17. Resnicow K, Davis RE, Zhang G, et al. Tailoring a fruit and vegetable intervention on novel motivational constructs: results of a randomized study. *Ann Behav Med* Apr;2008 35(2):159–169. [PubMed: 18401673]
18. Kreuter MW, Skinner CS, Steger-May K, et al. Responses to behaviorally vs culturally tailored cancer communication among African American women. *Am J Health Behav* May–Jun;2004 28(3):195–207. [PubMed: 15152880]
19. Ruud JS, Betts N, Kritch K, Nitzke S, Lohse B, Boeckner L. Acceptability of stage-tailored newsletters about fruits and vegetables by young adults. *J Am Diet Assoc* Nov;2005 105(11):1774–1778. [PubMed: 16256762]
20. Stevens VJ, Glasgow RE, Toobert DJ, Karanja N, Smith KS. One-year results from a brief, computer-assisted intervention to decrease consumption of fat and increase consumption of fruits and vegetables. *Prev Med* May;2003 36(5):594–600. [PubMed: 12689805]
21. Brug J, Campbell M, van Assema P. The application and impact of computer-generated personalized nutrition education: a review of the literature. *Patient Educ Couns* Feb;1999 36(2):145–156. [PubMed: 10223019]
22. Kroeze W, Werkman A, Brug J. A systematic review of randomized trials on the effectiveness of computer-tailored education on physical activity and dietary behaviors. *Ann Behav Med* Jun;2006 31(3):205–223. [PubMed: 16700634]
23. Oenema A, Tan F, Brug J. Short-term efficacy of a web-based computer-tailored nutrition intervention: main effects and mediators. *Ann Behav Med* Feb;2005 29(1):54–63. [PubMed: 15677301]
24. Wantland DJ, Portillo CJ, Holzemer WL, Slaughter R, McGhee EM. The effectiveness of Web-based vs. non-Web-based interventions: a meta-analysis of behavioral change outcomes. *J Med Internet Res* Nov 10;2004 6(4):e40. [PubMed: 15631964]
25. Norman GJ, Zabinski MF, Adams MA, Rosenberg DE, Yaroch AL, Atienza AA. A review of eHealth interventions for physical activity and dietary behavior change. *Am J Prev Med* Oct;2007 33(4):336–345. [PubMed: 17888860]
26. Alexander GL, McClure JB, Calvi J, et al. MENU choices: A randomized clinical trial evaluating online interventions to improve fruit and vegetable consumption. *JAMA*. Under Review
27. Wagner EH, Greene SM, Hart G, et al. Building a research consortium of large health systems: the Cancer Research Network. *J Natl Cancer Inst Monogr* 2005;(35):3–11. [PubMed: 16287880]
28. Reynolds KD, Baranowski T, Bishop DB, et al. Patterns in child and adolescent consumption of fruit and vegetables: effects of gender and ethnicity across four sites. *J Am Coll Nutr* Jun;1999 18(3):248–254. [PubMed: 10376781]
29. Serdula MK, Coates RJ, Byers T, Simoes E, Mokdad AH, Subar AF. Fruit and vegetable intake among adults in 16 states: results of a brief telephone survey. *Am J Public Health* Feb;1995 85(2):236–239. [PubMed: 7856784]
30. Thompson B, Demark-Wahnefried W, Taylor G, et al. Baseline fruit and vegetable intake among adults in seven 5 a day study centers located in diverse geographic areas. *J Am Diet Assoc* Oct;1999 99(10):1241–1248. [PubMed: 10524389]
31. Krueger, RA. *Focus Groups: A Practical Guide for Applied Research*. Vol. 2. 1994.
32. Morgan, DL. *Focus groups and qualitative research*. Newberry Park, CA: SAGE Publications; 1988.
33. Anderson ES, Winett RA, Wojcik JR. Self-regulation, self-efficacy, outcome expectations, and social support: social cognitive theory and nutrition behavior. *Ann Behav Med* Nov-Dec;2007 34(3):304–312. [PubMed: 18020940]
34. Eikenberry N, Smith C. Healthful eating: perceptions, motivations, barriers, and promoters in low-income Minnesota communities. *J Am Diet Assoc* Jul;2004 104(7):1158–1161. [PubMed: 15215777]
35. Paquette MC. Perceptions of healthy eating: state of knowledge and research gaps. *Can J Public Health* Jul-Aug;2005 96(Suppl 3):S15–19. S16–21. [PubMed: 16042159]
36. Greaney ML, Lees FD, Greene GW, Clark PG. What older adults find useful for maintaining healthy eating and exercise habits. *J Nutr Elder* 2004;24(2):19–35. [PubMed: 15778155]

37. O'Doherty J, Holm L. Preferences, quantities and concerns: socio-cultural perspectives on the gendered consumption of foods. *Euro J Clin Nutr* 1999;53:351–359.
38. Wardle J, Haase AM, Steptoe A, Nillapun M, Jonwutiwes K, Bellisle F. Gender differences in food choice: the contribution of health beliefs and dieting. *Ann Behav Med* Apr;2004 27(2):107–116. [PubMed: 15053018]
39. Watters JL, Satia JA, Galanko JA. Associations of psychosocial factors with fruit and vegetable intake among African-Americans. *Public Health Nutr* Jul;2007 10(7):701–711. [PubMed: 17381950]
40. Buller DB, Woodall WG, Zimmerman DE, et al. Formative research activities to provide Web-based nutrition education to adults in the Upper Rio Grande Valley. *Fam Community Health* Oct;2001 24(3):1–12. [PubMed: 11563940]
41. John JH, Ziebland S. Reported barriers to eating more fruit and vegetables before and after participation in a randomized controlled trial: a qualitative study. *Health Educ Res* Apr;2004 19(2): 165–174. [PubMed: 15031276]
42. Lea E, Worsley A, Crawford D. Australian adult consumers' beliefs about plant foods: a qualitative study. *Health Educ Behav* Dec;2005 32(6):795–808. [PubMed: 16267149]
43. McConaghy J. Adults' beliefs about the determinants of successful dietary change. *Community Health Stud* 1989;13(4):492–502. [PubMed: 2627786]
44. Kratt P, Reynolds K, Shewchuk R. The role of availability as a moderator of family fruit and vegetable consumption. *Health Educ Behav* Aug;2000 27(4):471–482. [PubMed: 10929754]

Table 1

Participants' Demographic Characteristics

	Groups by race and gender			Groups by gender only		Total*
	Southeast*	Midwest1*	Northwest*	Midwest2*		
Number of focus groups	4	4	2	2	12	
Number of participants	40	47	27	23	137	
Age (years)						
• 21–30	5%	28%	7%	17%	15%	
• 31–40	13%	26%	30%	22%	22%	
• 41–50	40%	23%	33%	17%	29%	
• 51–60	35%	19%	19%	35%	26%	
• 61–65	8%	4%	11%	0%	6%	
Gender						
• male	43%	49%	55%	43%	47%	
• female	58%	51%	45%	57%	53%	
Education						
• High school graduate	8%	15%	11%	4%	10%	
• Some college	35%	32%	22%	30%	31%	
• College graduate	43%	30%	19%	39%	33%	
• Post-graduate	15%	23%	48%	26%	26%	
Race or ethnicity						
• Black	45%	51%	11%	4%	34%	
• White	55%	49%	78%	91%	64%	
• Hispanic	0%	0%	0%	4%	<1%	
• Other	0%	0%	11%	0%	2%	
Usual servings of F&Vs per day						
• No servings	0%	2%	0%	9%	2%	
• 1–2 servings	20%	53%	35%	39%	38%	
• 3–6 servings	80%	45%	65%	52%	60%	
Internet use in past 7 days						
• Once	0%	6%	4%	74%	4%	
• Couple of times	35%	28%	23%	22%	28%	
• Many times	65%	66%	73%	4%	68%	

* Percentages may not add up to 100% due to rounding.

* Percentages may not add up to 100% due to rounding.

Table 2

Focus Group Participant Comments on Healthy Eating, Motivators and Barriers to Fruit and Vegetable Consumption

Comments on Healthy Eating	
Things to Eat More of	Things to Eat Less of
Lean meats	Salt
Less meat	Sugar
More fish	Fat
Brown carbohydrates	Oils
Fiber	Fried food
Low fat food	Fresh rather than processed
Water	Anything you can't pronounce (additives)
Fruits and Vegetables	
Fresh rather than canned	
Behaviors to Promote Healthy Eating	
Eat balanced meals	Do not eat late in the evening
Eat only when hungry	Avoid super-sized meals
Eat breakfast	
Watch portion size	
Motivator for FV Consumption	Barriers to FV Consumption
Role models for children and family	Time
Responsibility to plan healthy meals for children	Expense and affordability
	Poor FV quality (taste/freshness) in winter
Health concerns for self and family	Convenience issues "what can I grab?" "not messy"
Noticing health benefits: being regular, fewer allergies	Men feel immortal, don't think about health or are "too macho" for FV
feeling cleansed, clearer skin, weight loss, more energy, FV are not filling	
handling stress better, being mentally alert, less arthritis	Laziness and complacency
pain less guilt	Lack of recipes
	Bored of same tastes/uninteresting recipes
	Concern about treatment of food supply (pesticides)
	Constant change of health recommendations " <i>an apple a day is not good enough, now it's 5 a day</i> "

Table 3

Focus Group Participant Suggestions for Web-Based Education

Visual Presentation of Material	
Suggestion	Examples of information to include
Keep it short	"put fruit on cereal"
Provide visual illustrations	Portion sizes Food preparation Determining ripeness
Provide links to articles and additional information ^{**} (<i>additional information provided in optional side bar links</i>)	Research findings on health benefits of eating fruits and vegetables in general Recipes with fruits and vegetables
Content of information	
Provide testimonials on healthy eating [*]	Popular culture heroes (i.e., Lance Armstrong) Person with health issue (i.e., cancer/heart disease)
Tailor material (<i>age group tailoring done</i>)	Explain how FV affect certain groups (e.g., women's health throughout stages - youth, pregnancy, mid-life, old age)
Provide menu suggestions	Incorporating the correct amount of fruits and vegetables
e-mail tips (<i>e-mails sent when web-site had new tips</i>)	How to "hide" vegetables within recipes Suggestions for increasing whole grains or fiber Substitution lists Use of "old"/over-ripe fruits
Discuss consequences (<i>minimally incorporated</i>)	Health consequences of not eating FV vegetables Economic consequences: spend now on FV to save on health care costs in the future
Setting goals	Help to set realistic goals
Helpful Motivators	
Build in motivation	Incentives/Reward System (e.g., gold stars) Chart progress
Printable summaries (<i>web-site pages were printable</i>)	Daily reminders
Interactive message board [*]	Sharing thoughts and experiences

* Only testimonials and an interactive message board were not included. We did not have the resources to obtain testimonials or meet the demands of monitoring a message board.

** Links to other websites were not included in the MENU intervention to reduce the possibility of contamination of intervention effects.