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Chefs' Perception of the Importance of Nutrition in Menu Planning

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Abstract: This study surveyed chefs attending the American Culinary Federation Chefs Forum 2001. They were surveyed regarding their perceptions of the role of nutrition in menu planning. The results showed that chefs strongly agree that food service professionals view nutrition as important in menu planning. The chefs, however, did not perceive that the number of customer requests for modified menu items was increasing or that consumers consider nutrition an important factor when selecting a restaurant. The study found that the chefs' personal health conditions, length of work experience, and recent nutrition education were significantly related to nutrition issues in menu planning. The survey also indicated that chefs no longer perceive that the preparation of low-fat foods requires additional work, and that they can be made equal in taste to foods containing higher amounts of fat.

Key words: Chef, nutrition, menu planning

Introduction

Consumers and foodservice operators view eating out as a necessity with today's fast-paced lifestyle (Spence, 1995; Strauss, 1994). According to a report issued by the United States Department of Agriculture (USDA) (Kantor, 1998), more than two out of three adults say that going out to a restaurant with family or friends not only offers an opportunity to socialize, but optimizes their time by dispensing with cooking and cleaning tasks. The frequency of eating away from home has risen by more than two-thirds over the past two decades and commercially prepared food accounts for 34% of the typical person's total calorie intake (Hunter, 2000). It is anticipated that the upward trend of eating commercially prepared meals will continue in the foreseeable future.

At the same time that the number of meals consumers eat away from home is on the rise, the overall nutritional quality of the typical American diet is on the decline. The United States Department of Agriculture (USDA) (Lin *et al.*, 1999) reports that the nutrient content of meals consumed away from home is failing to keep pace with the nutritional improvements in home-prepared meals. Compared with home-prepared foods, commercially prepared foods have greater amounts of dietary components, such as saturated fat and calories, which Americans over-consume, and less of the nutrients, such as calcium and fiber, that are under-consumed.

This excessive consumption of fat and calories from commercially prepared meals is linked with America's obesity epidemic. In summarizing recent articles published in the Journal of the American Medical Association, Jonas (2001) reports that 63% of men and 55% of women are overweight. In the past twenty years, the prevalence of adult obesity has increased from 14.5 to 22.5%. Type 2 diabetes, gallbladder disease, coronary artery disease, osteoarthritis, hypertension, and elevated serum cholesterol are from 50 to 500% more common in obese individuals than normal weight people. Obesity is related to the consumption of commercially prepared foods and portion size plays a substantial role. A Tufts University Diet and Nutrition Letter survey found that serving sizes at a variety of popular restaurant chains far exceeded USDA guidelines (Linder, 2001).

Nutrition and the Restaurant Industry: Four out of ten deaths in this country are attributed, at least in part, to poor diet and lack of exercise (Dinkins, 2001). Given that the American public consumes 1 billion commercially prepared meals each week (National Restaurant Association, 2000), eating away from home has a tremendous impact on overall health. One goal of The Healthy People 2000 national health promotion and disease

prevention program is to "increase to at least 90 percent the proportion of restaurants and other institutional food service operators that offer identifiable low-fat, low-calorie food choices, consistent with the Dietary Guidelines for Americans" (Healthy People, 2000). Some restaurants have responded by offering healthy menu items ranging from low-fat tostados to full-course meals featuring seafood or chicken dishes that are low in sodium and fat but high in fiber and vitamins (Kurtzweil, 2000; Wenzel *et al.*, 1999).

The nutrition expertise of chefs is a key component in the continuing effort to convince consumers to change their eating habits and to seek out healthy food items when eating out. To accomplish this, consumers must adapt home eating habits to the commercial environment. Nutrition education for chefs is crucial if restaurants are to stay competitive in the future, as studies have shown that healthful food will be accepted by customers only if the food appeals to the senses, looks exciting and tastes good (Rouslin and Vieira, 1998).

Reichler and Dalton (1998) found that although chefs were practicing some healthful food preparation techniques, the factors of time, taste and training still posed barriers. For example, more than 50% of the chefs surveyed in this study agreed or strongly agreed that recipe modification was time consuming, and only 39% agreed or strongly agreed that food would taste good if current dietary guidelines were followed. The chefs acknowledged having responsibility for the nutrient content of the dishes prepared and providing nutrition information to patrons. The authors suggest that chefs and dietitians work together in food service settings to create foods that not only meet the dietary guidelines, but also enhance customer satisfaction with modified menu items.

Rouslin and Vieira (1998) found that chefs are becoming more nutrition aware and responsive to customers' demands for healthful menu items. A survey conducted by Fitzpatrick *et al.* (1997) found that customer satisfaction with lower-fat items was significantly greater than satisfaction with their higher fat counterparts, regardless of the menu-item type, dining experience, or respondent characteristics. But the majority of restaurateurs still report that although customers say they want healthier menu items, they do not consistently select healthful menu items (Jones, 1999).

Studies concerning the importance of nutrition in the consumers' selection of commercially prepared foods show conflicting results. The chefs surveyed by Reichler and Dalton (1998) did not think that customers were concerned about nutrition. A National Restaurant Association study reported in Frozen Food Digest (Wenzel, 1994) found that 55% of respondents considered the

nutritional content of food when eating out whereas a similar survey conducted by the Center for Science in the Public Interest found that 74% of adults considered healthy choices an important factor when selecting a restaurant (Lewis, 1994).

Restaurants are now and will continue to be a major source of food and nutrition for the American public. This escalating trend highlights the importance of the chef's role in offering and preparing healthful food. Consequently, this study was designed to examine current attitudes of chefs regarding the importance of nutrition in menu planning in today's food service establishments.

Materials and Methods

A questionnaire was developed by revising and expanding the survey of Palmer and Leontos (1995) that examined chefs' perception of nutrition before and after completing a series of nutrition education classes. The 2-part questionnaire administered in this study was contained 26 questions. The first part of the questionnaire addressed demographic information, including age and gender, and asked questions about the type of establishment in which chefs currently worked, the region of the country they came from, and whether they had received nutrition education during the last 5 years. The second part of the questionnaire included 16 questions measuring the chefs' attitudes toward low-fat menu items, healthy food preparation practices, the role of nutrition in the planning of menus, and the importance of nutrition for the maintenance of an individual's health. The survey was distributed to chefs participating in the American Culinary Federation Chefs Forum 2001, in Las Vegas, Nevada. Two hundred and fifty questionnaires were distributed and 181 were returned. One hundred and seventy-nine responses were deemed valid for data analysis for a total response rate of 72%. Table 1 shows the characteristics of the sample.

Table 1: Respondents' Profile

Item	Frequency	Percent
Age		
(31-34)	40	22.1
(41-50)	63	34.8
(51-60)	63	34.8
> 60	13	7.2
Total	179	98.9
Missing	2	1.1
Gender		
Male	140	77.3
Female	36	19.9
Total	176	97.2
Missing	5	2.8
Number of years of experience		
5-10	23	12.7
11-15	25	13.8
16-20	44	24.3
> 20	86	47.5
Total	79	89.9
Missing	2	1.1
Type of establishment		
Quick Service	1	0.6
Buffet	1	0.6
Family	6	3.3
Ethnic	3	1.7
Gourmet	14	7.7
Specialty	4	2.2
Education	96	53.0
Healthcare	9	5.0
Industrial	6	3.3
Other	39	21.5

Seventy percent of the chefs were in the range of 41-60 years of age and 48% had more than twenty years of experience in the

food service industry. The sample was distributed geographically throughout the country. Approximately half of the chefs were currently employed in a college or university setting.

The Statistical Package for the Social Sciences (SPSS) program was used to calculate the mean responses for chefs' attitudes about the role of nutrition in their work. A series of analysis of variance (ANOVA) was performed to identify the existence of significant differences among different backgrounds and demographic factors in relation to nutrition attitudes and practices. If any significant differences were found, a *post hoc* multiple comparison procedure using the Tukey method was used to further investigate significant differences among different groups based on respondents' background variables (i.e., gender, age, educational level, work environment, nutrition education, personal health history and type of restaurant establishment).

Results

Table 2 shows the descriptive analysis regarding chefs' perceptions about the role and importance of nutrition in their personal lives and in the restaurant environment.

Respondents strongly agreed with only items: "Nutrition is taken into consideration when planning menu items (4.5 on a 5-point scale)" and "Consumers take nutrition into consideration when making menu choices (4.3)."

Respondents displayed a high agreement toward the following items: "I try to cut down the fat in my own diet (4.0);" "I like the challenge of making low-fat food taste good (4.0);" "Consumers are concerned about fat in their diet (3.9);" and "People want low-fat choices on restaurant menus (4.0)," and "Nutrition plays an important role in the development of chronic disease (4.0)."

The responses to "The frequency of restaurant eating impacts an individual's nutritional health (3.7)," and "Customers with special nutritional needs can select appropriate items from our menu (3.9)" ranked between neutral and agree.

Two items received lower mean scores than the rest of the items: "Cooking low-fat items is more work than it is worth (2.1)," and "Low-fat food does not taste as good as high-fat food (2.7)."

These ratings indicate disagreement with the statements; in other words, chefs actually have a positive attitude toward the ease of preparation and taste of low-fat foods. Only two items generated neutral opinions: "Low-fat food does not taste as good as high-fat food. (3.1)"; and "The number of customer requests for modified menu items is increasing (3.1)."

In general, the respondents revealed homogenous attitudes about nutrition and there were very few significant differences among different groups based on respondents' background variables (i.e., gender, age, educational level, work experience, and type of restaurant establishment). The homogeneity of the responses may in part be attributed to the fact that the majority of the chefs in this sample, 53%, worked in an educational, rather than operational, capacity. Another explanation is that through education and continual training chefs in the American Culinary Federation share a common body of nutrition knowledge and have developed similar attitudes toward the importance of nutrition.

There were only three demographic variables that showed a significant relationship with perceptions regarding the importance of nutrition in personal food choices and in commercial menu offerings: personal health conditions, work experience, and nutrition education. Tables 3, 4, and 5 show the impact of personal health conditions, work experience, and nutrition education on perceptions about the role of nutrition in their personal and professional lives.

Whether or not a chef had experienced nutritionally related diseases, such as diabetes or heart disease, influenced their behavior with regard to the consumption of low-fat food items. For example, chefs who had such health conditions were more inclined to reduce fat in their diet. Further, the level of work experience influenced respondents' opinions about the amount of work required to prepare low fat items. Chefs with work experience of less than 5 years were inclined to agree that low-fat items represent more of an effort to prepare than chefs that had

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Table 2: Chefs' perceptions about the role and importance of nutrition in their personal and professional lives

Label	Item*	Mean	S.D.	N
Q 1	Low-fat food does not taste as good as high-fat food.	2.726	1.160	179
Q 2	I would feel comfortable serving a low-fat item even when it was not specifically requested.	3.848	0.9475	178
Q 3	I try to cut down on fat in my own diet.	4.005	0.9087	179
Q 4	Cooking low-fat items is more work than it is worth.	2.061	0.8646	179
Q 5	People like to eat low-fat food.	3.123	1.709	179
Q 6	I like the challenge of making low-fat food taste good.	3.955	0.8198	179
Q 7	Low-fat food does not taste as good as high-fat food.	3.150	0.8511	179
Q 8	Consumers are concerned about fat in their diet.	3.860	0.8853	179
Q 9	People want low-fat choices on restaurant menus.	3.972	0.8574	179
Q 10	Nutrition plays an important role in the development of chronic disease.	3.972	0.8574	179
Q 11	Nutrition is taken into consideration when planning menu items.	4.497	0.7140	179
Q 12	The frequency of restaurant eating impacts an individual's nutritional health.	3.748	0.9352	178
Q 13	Consumers take nutrition into consideration when making menu choices.	4.309	3.923	177
Q 14	The number of customer requests for modified menu items is increasing.	3.141	1.004	179
Q 15	Customers with special nutritional needs can select appropriate items from our menu.	3.921	0.8173	177
Q 16	Customers take nutrition into consideration when selecting a restaurant.	3.666	0.9273	178

*The respondent was asked to use a 5-point Likert-type scale (Strongly disagree = 1; Disagree = 2; Neutral = 3; Agree = 4; Strongly Agree = 5) for all questions.

Table 3: Significant differences regarding health conditions

Item*	Mean	F-value	P-value	
	Have heart disease or diabetes (N=35)	Do not have heart disease or diabetes (N=141)		
Q 3	4.34	3.95	5.58	0.019**

* Refer surveyed items to those in Table 2 ** Significant at the 0.05 level

Table 4: Significant work experience differences

Item*	Mean				F-value	P-value
	G 1 (N=23)	G 2 (N=25)	G 3 (N=43)	G 4(N= 85)		
Q 4	2.47	1.84	1.93	2.07	2.82	0.041**

*Refer surveyed items to those in Table 2. Grouping as follows: G1: less than 5 years of work experience, G2: 5-10 years G3: 11-15 years, G4: 16-20 years ** Significant at the 0.05 level

Table 5: Significant differences in regard to nutrition education received

Item***	Mean		F-value	P-value
	Have attended classes within past 5 years (N=119)	Have not attended classes within past 5 years (N=60)		
Q 11	3.84	3.56	3.46	0.064*

***Refer surveyed items to those in Table 1. *Significant at the 0.10 level

more experience. However, in general respondents disagreed with this statement. Finally, the consideration given to nutrition when planning a menu was influenced by the amount of nutrition education chefs experienced recently. Chefs who had attended nutrition classes within the past 5 years were more inclined to consider nutrition in their menu planning process, which is not surprising, as nutrition education is expected to increase their level of awareness.

Discussion

The neutral responses to the statements "The number of customer requests for modified menu items is increasing" and "Customers take nutrition into consideration when selecting a restaurant" have important implications for food service operators, chefs, and consumers. The majority of restaurateurs report that although customers say that they want healthier menu items, their purchasing behavior does not match their stated intentions (Jones, 1999). Taste remains the most important issue when ordering food. Although an increasing number of people display an *interest* in health and nutrition, restaurant patrons still do not consistently translate this interest into selecting healthy menu options or asking for them when they are not presented on the menu. The question remains as to whether this inconsistent consumer behavior represents a lack of personal dietary commitment, or perhaps a lingering negative attitude towards modified menu items. Commercial food service operators may wish to offer more nutrition conscious items, but are unable to do so unless it is profitable. In other words, customers who say they

want healthy food must request and order healthy food on a regular basis. Only then will operators find it necessary to modify their menu selections.

This survey showed a significant ($p < .05$) relationship between chefs who have heart disease and/or diabetes and with the reduction of fat intake in their personal diets. The effect of food choices certainly becomes stronger when it impacts one's own mortality. It is not unexpected, therefore, for chefs to make dietary modifications to improve their health. It is also likely that these chefs received dietary directives from medical professionals. Chefs with chronic conditions would serve as powerful examples within the profession of how appropriate nutrition choices and food preparation can prevent and manage life-style illnesses.

The number of years of work experience showed a significant ($p < .05$) difference in attitudes towards the amount of work involved in preparing acceptable low-fat menu items. Chefs with less than five years of work experience were more likely to feel that tasty low-fat items are more difficult to prepare than their higher-fat menu counterparts. This may be attributed to fewer years of general work experience, a lack of opportunity to learn about low-fat food preparation that also has exceptional taste, the inability to work in establishments that encourage low-fat recipe development, or personal inexperience in preparing creative low-fat meals.

In general, however, the chefs surveyed in this study disagreed with the statements that low-fat foods are difficult to prepare and do not taste as good as higher-fat menu items. These results differ from those of Reichler and Dalton (1998), thus possibly

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indicating a change in attitude towards low-fat recipe development. Rouslin and Vieria (1998) found that chefs were interested in applying more nutrition principles in commercial food service operations. Palmer and Leontos (1995) found a positive attitude change towards preparing low-fat food items after chefs completed a nutrition education course. These authors, as well as Sims-Bell (1998), conclude that opportunities exist for dietitians to market education that will not only teach nutritional requirements, but also empower chefs to accept responsibility for healthful menu planning.

A significant ($p < .10$) relationship was found between the response to the statement "Nutrition is taken into consideration when planning menu items" and having attended nutrition education classes within the past five years. Nutrition science and its application to practical life are continually evolving. Persons learning about recent advances in nutrition and its relationship to the risk reduction of certain chronic diseases are more aware of the importance of promoting healthful menu choices. This finding emphasizes the importance of providing nutrition education to chefs either via professional association seminars or on-the-job training.

The public's interest in nutrition, combined with the rise in the number of meals eaten away from home and the increase in the incidence of chronic diseases, represents a challenge and responsibility for today's chefs. This study shows that chefs strongly believe that food service professionals and consumers view nutrition as important in menu planning. Experienced chefs no longer perceive that the preparation of low-fat foods requires additional work, and that low fat-foods can taste great. This study found that personal health conditions, amount of work experience, and recent nutrition education were significantly related to nutrition in menu planning issues. These findings support the need for dietetics and culinary professionals to continue to work together to find innovative ways to improve chefs' knowledge and attitude towards nutrition, and to convince the public that making healthful selections when eating out is not only possible, but tasteful and enjoyable. Future research should continue to focus on identifying barriers to healthful eating in the commercial food service industry.

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