

A Survey of undergraduate student perceptions and use of nutrition information labels in a university dining hall

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Abstract

Objective: To examine undergraduate student perceptions and reported use of nutrition information labels in campus dining halls.

Design: Paper surveys were administered to a convenience sample of undergraduates.

Setting: This study was conducted at an urban United States university.

Method: A survey about perceptions and use of nutrition information labels in the dining halls was distributed to 487 students over a three-month period during the 2009–2010 academic year.

Results: Of survey respondents, 98% were in favour of making nutrition information available to students, while 96% preferred the information to appear in the dining halls or both in the dining halls and online, rather than online only. Some 88% of survey respondents indicated that the labels affect their food choices at least sometimes.

Conclusion: The results suggest that college and university dining halls should consider student opinion when deciding whether to provide nutrition information labels in the dining halls.

Keywords

Menu labelling, nutritional information, obesity

Introduction

Poor diet and obesity are major public health concerns¹ that have led to growing interest in public health policies to address these problems. One such policy, implemented in states and cities

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across the United States, and included in the Patient Protection and Affordable Care Act, is menu labelling.² Menu labelling is a policy that requires chain restaurants to post kilocalorie (calorie) information on menus and menu boards. The hope is that menu labels will provide consumers with nutrition information about foods consumed outside the home, which account for approximately half of total food expenditures.³

The existing research on menu labelling is mixed, with some studies finding that it promotes the ordering and consumption of foods of lower caloric value⁴⁻⁶ and others finding no effect of menu labelling on food purchases.⁷⁻⁹ However, few studies have examined the perceptions and impact of menu labels in college and university dining halls. One study conducted in a university dining hall found that the presence of nutrition information cards was associated with decreases in the energy content of purchased entrees.¹⁰

Recently, out of fear of exacerbating eating disorders, Harvard University pulled their nutrition labels from their dining halls while maintaining nutrition information online.¹¹ Indeed, college age women are an at-risk population for eating disorders,¹² making it especially important to consider how university policies impact the development of such problems. On the other hand, making the transition from eating at home and/or buying lunch in high school to effectively eating three meals a day in the typical all-you-can-eat college cafeteria buffet can be challenging. Research has shown that people tend to overeat when they are exposed to a wide variety of foods and served large portion sizes,^{13,14} which might partially explain why students often gain weight in college.¹⁵ Therefore menu labels that provide nutrition information could be especially helpful for students trying to navigate a new and complex food environment.

The aim of the present study was to conduct a survey of undergraduate students at an urban, Ivy League university to ascertain student perceptions and reported use of the menu labels in that university's dining halls, with the goal of informing college and university policies about nutrition information use in cafeteria settings.

Method

At the university where this survey was conducted, all dining halls provide nutrition labels for prepared foods, which include information about serving size, ingredients, calories, fat, sugar, carbohydrates, protein, sodium, cholesterol, and trans fats. A survey was distributed to undergraduate students from tables set up at a central location on the university campus and outside of one of the dining halls, from October 2009 to January 2010. The survey was distributed to students Monday through Thursday from 12:30–1:30pm and 2:00–2:30pm on central campus and from 5:30–7:00pm outside a dining hall. Students walking by were asked if they would like to participate in a five-minute survey about the university dining halls, for which they would receive US\$2. Participants were eligible if they were undergraduate students of the university older than 18 years of age. To reduce selection bias during the recruitment phase, there was no mention of the survey's purpose of examining perceptions of nutrition information in the dining halls. Upon obtaining written consent, participants were asked to complete a survey, which included a variety of questions about perceptions and use of nutrition labels in the dining halls. The survey also included questions about sex, class year, height, and weight. In the final month of data collection, two additional questions were added to the survey asking about the influence of the labels on selecting lower-calorie and/or healthier options, and feelings of embarrassment when looking at the labels.

Statistical analyses

All analyses were conducted in SPSS version 18 (SPSS Inc., Chicago, IL). Percentages are reported for each survey question. A subset of survey questions of interest for gender and weight status comparisons (normal weight vs. overweight/obese defined as a body mass index (BMI) $> 25\text{kg/m}^2$) were selected *a priori*, and chi square analyses were conducted to test for group differences.

Results

Participants

Four hundred eighty-seven students initiated the survey. All completed responses were included in data analysis, and reported percentages were adjusted accordingly based upon the response rate. Fifty-six per cent of the respondents were female. Body mass index (BMI) was calculated by dividing weight in kilograms by height in meters squared (kg/m^2). The average BMI in the sample was $22.53 \pm 2.88\text{kg/m}^2$ (range: $17.09\text{--}43.89\text{kg/m}^2$); 17% of participants were overweight or obese. Ninety-six per cent of students reported consuming two or more meals per day in the dining halls, and 22% of respondents reported having special dietary restrictions, such as being vegetarian or vegan, or having food allergies or religious restrictions. The results for each survey question are displayed in Table 1.

Desire for nutrition information

Ninety-eight per cent of students surveyed indicated it was a good idea to make nutrition information available either online or in the dining halls for each meal. Ninety-six per cent reported that they wanted nutrition information in the dining hall only or both in the dining hall and online. Sixty-five per cent of surveyed students were in favour of the dining hall expanding the number of items accompanied by a nutrition information card.

Reported use of nutrition information

Eighty-eight per cent of survey respondents indicated that nutrition information sometimes, often, or always affects their food choices. Thirty-three per cent of students surveyed believed nutrition information posted online *never* impacts food choices, while only 4% of students believe that nutrition information in the dining halls *never* influences food choices. Ninety-nine students also completed the two additional survey questions added in the final month of the survey. Of those, 48% of respondents reported using the labels to choose lower-calorie and/or healthier foods in the dining halls. However, 29% reported they would feel embarrassed holding up the line for food because they were reading the nutrition label.

The majority of students reported that the calorie and ingredient information were the most important aspects of the nutrition information cards, followed by fat content, while the fewest number of people reported being interested in vitamins and minerals. Of the 22% of students with special dietary needs, 81% reported using the nutrition information labels or online information to help them make food choices based upon their dietary needs.

Table 1. Yale university 2009–2010 academic year dining hall nutrition information survey results (%) for total sample and by gender and BMI.

Survey question	Total sample (N = 487)	Men (N = 210)	Women (N = 273)	Normal weight (N = 395)	Overweight and obese (N = 79)
Believe nutrition information affects food choices at least sometimes	88	81	93	89	81
Most important part of nutrition information card:					
Calories	72	62	80*	72	77
Ingredients	55	53	57	58	47
Fat	50	46	54	52	44
Have looked at nutrition information on Yale dining hall website	39	29	47*	39	41
Think it is a good idea to make nutrition information available for each meal online or in the dining hall	98	98	99	99	97
Want to see nutrition information:					
Online only	4	5	4	5	4§
Dining hall only	45	48	42	44	45
Both online and in dining hall	51	47	54*	51	51
Want to see more nutrition information cards in the dining hall	65	61	69	66	65
Believe presenting nutrition information:					
Puts people at moderate or high risk for <i>developing</i> eating disorders	9	4	12*	8	6
Increases risk of <i>exacerbating</i> existing eating disorders	29	21	34*	28	28
Makes recovery from an eating disorder more difficult	34	23	42*	34	35
Would feel embarrassed holding up the dining hall line to read a nutrition information card	29	22	35	27	33
Believe nutrition labels in the dining halls influenced them to choose lower calorie and/or healthier options	48	35	59*	42	67§

*Difference in survey responses between men and women was significant at $p < .05$ level. §Difference in survey responses between normal weight and overweight/obese individuals (BMI > 25 kg/m²) was significant at $p < .05$ level.

Eating disorders and nutrition information card perceptions

Ninety-one per cent of respondents reported that nutrition information cards had little or no effect on the development of an eating disorder, while 29% felt the labels have at least a moderate likelihood of exacerbating existing eating problems among those with eating disorders and 34% believe the labels make it difficult to recover from an eating disorder.

Gender comparisons

Chi square analyses did not reveal any significant differences between men and women in reported awareness of the dining hall labels ($\chi^2(1) = .71, p = .398$), the opinion that having the labels is a good idea ($\chi^2(1) = 1.25, p = .264$) and desire for more nutrition information cards in the dining halls ($\chi^2(1) = 3.04, p = .081$). Women were more likely to report looking at nutrition information online ($\chi^2(1) = 15.16, p < .001$) and looking at the cards more frequently in the dining halls ($\chi^2(4) = 15.76, p = .003$). They were also more likely to prefer the information be available both online and in the dining halls ($\chi^2(2) = 387.5, p < .001$). Women were more likely to report that calorie information was one of the most important aspects of the nutrition information card ($\chi^2(1) = 20.54, p < .001$) and that the labels have influenced them to choose lower calorie and/or healthier options in the dining halls ($\chi^2(1) = 5.60, p = .018$). Comparisons on the eating disorder survey questions indicated that women were more likely to believe that the labels would promote the development of an eating disorder, exacerbate eating disorder symptoms, and/or make recovery from an eating disorder more difficult ($p < .001$ for all comparisons).

Body weight comparisons

Comparisons between overweight/obese and normal weight individuals revealed that overweight/obese individuals were least likely to want the nutrition information online only ($\chi^2(2) = 79.96, p < .001$) and were more likely to report the labels influenced them to make lower calorie and/or healthier food choices in the dining halls ($\chi^2(1) = 3.87, p = .049$). There were no other significant differences based on weight status.

Discussion

The findings from this survey revealed that the overwhelming majority of students surveyed want nutrition information cards displayed in the dining halls on campus. The results also highlight the strong desire for students to view the information either in the dining hall only or both online and in the dining hall, as opposed to online only. Having the information available at the time of food selection is likely to have a greater impact on food choices than providing it online, where students must seek it out and do not have it available at the point of decision making. Indeed, most of the students surveyed believed that nutrition information cards in the dining halls were likely to have some influence on students, as opposed to online information, which more students felt was unlikely to have any impact. Importantly, overweight/obese students were the least likely to prefer viewing the information online only. Taken together, these findings suggest that the students sampled prefer having the information available in the dining halls, rather than online only. In addition, the majority of the students surveyed reported looking at the labels at least sometimes, and nearly half reported selecting a lower-calorie and/or healthier option because of the labels. Overweight/obese students were also more likely to report that the labels influenced them to choose a lower-calorie and/or healthier food option.

The survey findings also suggest that nutrition information cards provided in the dining halls should, at a minimum, include calorie, ingredient, and fat information. Having this information only, rather than also providing information about other nutrients (i.e. vitamins and minerals) might be more beneficial, given that students reported rarely paying attention to other information when making food choices. However, additional research to understand the optimum amount of information to place on menu labels would be useful.

Given that nearly 30% of the students surveyed reported they would feel embarrassed holding up the line for food because they were reading the nutrition label, dining hall managers should ensure that the nutrition information label has a large enough font so that students can easily view it without stopping in the line. The survey results also indicated that many students would like the nutrition information cards to appear on more food items. This suggests that dining halls should consider providing nutrition information not only for prepared foods, but also for other frequently consumed items, such as beverages, cereals, and salad bars. Colleges and universities should also be aware of the needs of those individuals with reported dietary restrictions, which was nearly a quarter of students in this sample. The results from this study revealed that the majority of these students use nutrition information cards to make important dietary decisions.

In contrast, it remains unknown how nutrition labels impact those students who struggle with eating disorders. Student perceptions regarding this topic were mixed. Only a small minority of students believed that nutrition labels would significantly contribute to the development of an eating disorder, but about a third of students felt that nutrition labels might exacerbate or make it more difficult to recover from an eating disorder. We cannot conclude whether this perception is based on experience or speculation. Future research should assess why students felt that way (e.g. it was their own experience; they had learned this from friends with eating difficulties). More research is needed to assess the actual experiences of students struggling with eating disorders to understand the impact nutrition labels might have on this vulnerable population. Once an effect of nutrition labels on eating disorder symptoms is evaluated, universities and colleges can decide how to consider this information in the context of the desire by many students to have the information in the dining halls. While some gender differences emerged, such as women being more inclined to examine the nutrition labels and believing the labels were more likely to have an adverse impact on eating disorder symptoms, both men and women agreed it was a good idea to have the labels, and in fact wanted the labels expanded to more food items.

Limitations

This study is limited by a small sample size relative to the university's undergraduate population, which is approximately 5,200 students, and the use of a convenience sample even though the purpose of the survey was not disclosed during the recruitment phase. In addition, the survey was only conducted on one university campus and results may differ based upon the school and location. The results are also limited because they capture students' reported use of nutrition labels, but do not reflect actual behaviour.

Conclusions

This survey provides important information that can help inform university and college policies about providing nutrition information labels in dining halls. Based on the results that the majority of students want the information in the dining halls, and many report using it to make food choices, colleges and universities should consider implementing or maintaining nutrition labels in their dining halls.

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