

Obesity and Food Behaviors in Vermont
Vermont Poll 2004

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Introduction

The word *obesity*, commonly understood in American society today as the “disease of excess body fat,” has become a very familiar term in the nation’s vocabulary in recent years (Kral, 2001). Obesity has increased by over 20% in the past ten years, and more than half of American adults are currently overweight or obese (Newby et al, 2003). This epidemic, however, is not a new topic of study. Over half a century ago in 1952, the American Heart Association recognized obesity as a high risk factor for cardiac complications (Nestle, 2000). Cardiac problems are among the many medical conditions that can be caused by obesity, a disease for which the medical and social costs are enormous. The Journal of the American Dietetic Association has estimated that obesity-related illnesses contribute to 6.8% of U.S. healthcare costs (Harnack, 2003).

The increasingly fast pace of the U.S. has forced people to eat meals on the go and away from home. Fast food restaurants have enjoyed strong demand for quick, inexpensive and convenient meals. Recent attempts by these establishments to accommodate choices for the health-conscious consumer—e.g., low-fat and low calorie items—have had little success (DeMaria, 2003). Fast food restaurants have triumphed, however, with portion size. Given the same price, larger portion items look more attractive to the consumer (DeMaria, 2003). The option to choose unhealthy over healthy foods is a *food behavior* characteristic.

Individuals make decisions everyday as to what to eat and where to get their food. These decisions are the individual’s food behaviors. The behaviors can be subconsciously or consciously made, depending on the situation and the individual. The action of certain food behaviors can play a part in reasons why people are overweight. In this study, we assess the degree to which people in Vermont are overweight and look at Vermonters’ food behaviors. We examine how food behaviors among Vermonters influence their weight, and how demographics influence both weight and food behavior.

Methods and Data

The data used in this report came from this year’s Vermont Poll, a telephone survey conducted annually by the Center for Rural Studies at the University of Vermont. The 2004 Vermont Poll asked residents questions on issues related to public policy in Vermont as well as questions about demographics. Trained and supervised interviewers administered the survey using Computer-Aided Telephone Interviewing (CATI) software. The survey took place between the hours of 4:00pm and 9:00pm during February 2004. Telephone numbers were selected through random digit dialing from a list of all Vermont households with active, land-based phone lines. The survey required its respondents to be Vermont residents who were 18 years of age or older. The sample was statistically representative of the adult Vermont population with a 95 percent level of confidence.

The sample contained 693 respondents, and 646 of those who were called completed the entire survey. Forty-five percent (45%) of the sample were male, and 55% were female. The average age in the sample was 50 years old. The median household income category was \$35,001 to \$50,000. The median education level completed was some college with no degree, and 41% of respondents reported completing a bachelor's degree or higher. The majority of households consisted of two adults, with only 37 percent of respondents with one child or more in the house.

Analysis

In this study, we examine the characteristics and behaviors of Vermonters to get a better picture of who is overweight and why. The focus of this study is to:

1. *Determine the extent to which Vermonters are overweight;*
2. *Examine how certain demographics influence being overweight;*
3. *Explore how eating at home, eating at fast food restaurants and the number of meals eaten per day influence weight; and,*
4. *Consider how certain food behaviors are influenced by demographics.*

In order to look at the relationships between weight and food behaviors, we grouped people into two categories: overweight or not overweight. We used three major food behaviors: frequency of eating fast food meals; frequency of meals eaten per day; and, frequency of meals prepared at home.

Four questions from the Vermont Poll targeted obesity and food behaviors. The questions were worded as follows:

(Q.13): How many meals do you eat in a typical day?

(Q.14): To the best of your knowledge how many times did you eat meals from a fast food restaurant in the last week?

(Q.15): To the best of your knowledge, how many times did you eat home-prepared meals made from scratch in the last week?

(Q.114): Overweight status – due to the sensitive nature of the topic, this information had to be obtained by asking a series of questions. Height and weight information were obtained, and then the respondent's Body Mass Index (BMI) was calculated. BMI is a measure used frequently by the medical profession to determine whether an individual is overweight.

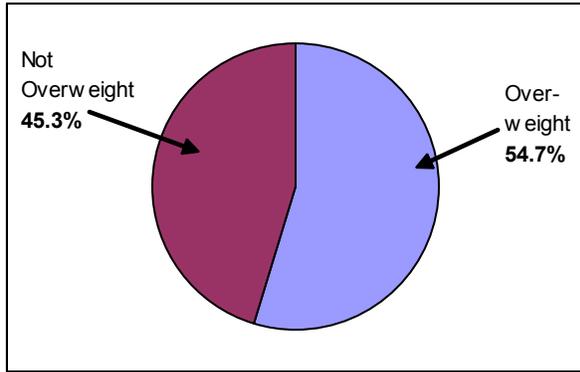
The demographics of gender, age, education level and income were used to examine their influences on obesity and food behaviors. We used two age groups in our analysis: adults between 18 and 35 years old, and those over age 35. When examining the effect of educational attainment on weight and food behaviors, we looked at people without a bachelor's degree and people with a bachelor's degree or higher. We established two income groups for our analysis: Vermonters with an annual household income of \$35,000 or less, and those with an income of greater than \$35,000.

We used the Statistical Package for Social Scientists (SPSS) to conduct our analysis. "Significance" values noted throughout the report indicate findings at confidence levels of 90% or greater. For example, a significance value of 0.05 indicates a result that is significant at a 95% level of confidence.

Results

According to the information on height and weight received from our respondents, more than half of our sample of Vermonters was considered overweight (Figure 1).

Figure 1: Percent of Vermonters Considered Overweight (n=581)

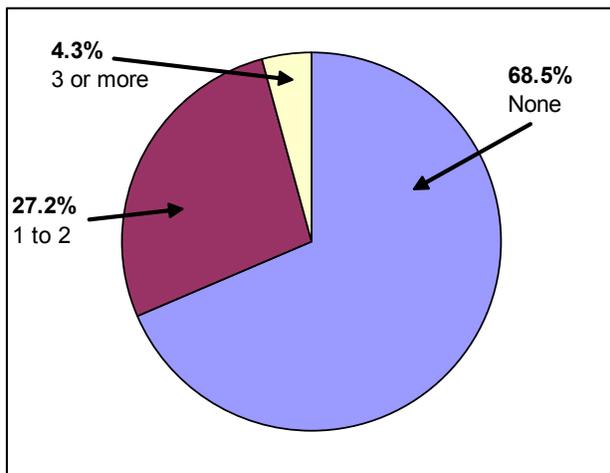


Source: Center for Rural Studies, University of Vermont, 2004 Vermont Poll

Most Vermonters in the survey reported eating 2 meals or 3 meals per day. The majority (64.5%) reported eating 3 meals per day, while 25% said they ate 2 meals per day. Only 4.3% ate just 1 meal per day, and 6.1% reported eating 4 or more meals in a typical day.

When participants were asked how many fast food meals they ate in the last week, most Vermonters (68.5%) said they had not eaten fast food at all. About 27% of respondents said they ate at a fast food restaurant once or twice in the last week, while only 4.3% of our sample reported eating 3 or more fast food meals during the last week (Figure 2).

Figure 2: Fast Food Meals Eaten in the Last Week (n=645)



Source: Center for Rural Studies, University of Vermont, 2004 Vermont Poll

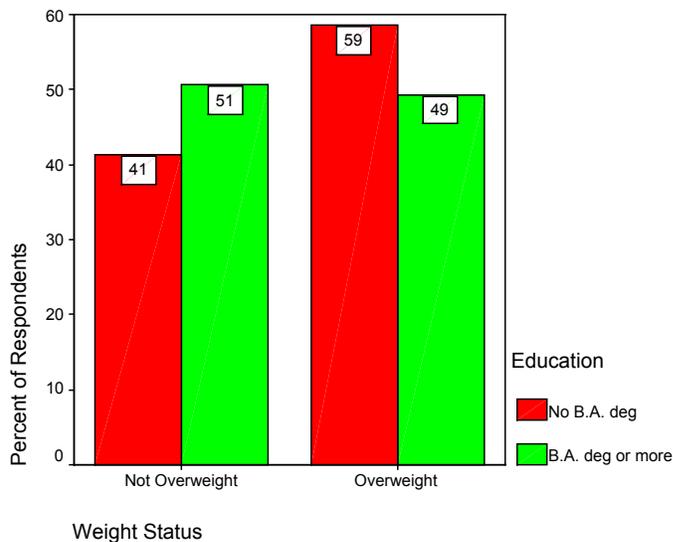
While Vermonters did not appear overall to be heavy consumers of fast food, we did not find them to be eating only home-cooked meals made from scratch. When asked how many home-prepared meals made from scratch they had eaten in the last week, 41.5% said they had eaten between 0 and 7 homemade meals (no more than 1 per day). About 21% of the participants reported eating between 8 and 14 homemade meals (between 1 and 2 per day), while just over one third (35.1%) of the participants ate between 15 and 21 home-prepared meals in the last week (between 2 and 3 per day). The median number of home-cooked meals eaten was 12 per week, and we used this measure to divide our sample into two groups: those who ate 12 or more home-cooked meals per week (at or above the median), and those who ate less than 12 home-cooked meals per week (below the median).

Demographic Influences on Weight and Food Behaviors

In our investigation of influences on weight status, we found education level, gender and eating at fast food restaurants to have a relationship to one's weight (Figures 3 and 4).

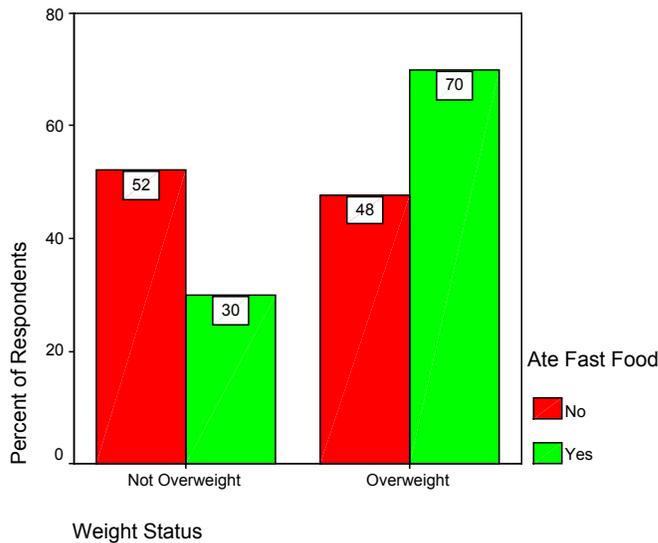
- Females were less likely to be overweight (44.5%) than males (67%) (significance < 0.001);
- People with a bachelor's degree or higher were less likely to be overweight (49.4%) than people who did not have a bachelor's degree (58.7%) (significance = 0.027); and,
- People who went to a fast food restaurant in the last week were more likely to be overweight (70%) than people who did not eat at a fast food restaurant (48%) (significance < 0.001).

Figure 3: Weight Status and Education Level
(n=581) (significance value = 0.027)



Source: Center for Rural Studies, University of Vermont, 2004 Vermont Poll

Figure 4: Weight Status and Ate Fast Food in the Last Week
(n=581) (significance value < 0.001)



Source: Center for Rural Studies, University of Vermont, 2004 Vermont Poll

Of the remaining demographic factors, we found no significant relationship between being overweight and income level, nor did we find any significant relationship between age and being overweight. Among the other food behaviors, we did not find weight status to be related to the number of meals eaten in a typical day or the number of homemade meals eaten during the week.

People who ate at fast food restaurants appeared to fall into a specific demographic profile. Men, individuals without a college degree, and people between the ages of 18 and 35 were found more likely to have eaten at a fast food restaurant in the last week. No significant relationship was found between income level and having eaten at a fast food restaurant.

- Males were more likely to go to a fast food restaurant (36.7%) than females (26%) (significance = 0.004);
- People without a bachelor's degree were more likely to go to a fast food restaurant (35.7%) than those with a bachelor's degree or higher (24.3%) (significance = 0.003); and,
- People between the ages of 18 and 35 were more likely to eat at a fast food restaurant (39.4%) than people above the age of 35 (29.5%) (significance = 0.046).

People who ate more home-prepared meals made from scratch also tended to have certain characteristics. We found that women, people with more education, younger adults and those with more income ate home-cooked meals more often than others.

- Females were more likely to have eaten 12 or more meals prepared at home in the past week (54.8%) compared to males (44.2%) (significance = 0.008);
- People with a bachelor's degree or higher were more likely to have eaten 12 or more meals at home (55.6%) compared to people without a bachelor's degree (45.4%) (significance = 0.013);

- People older than 35 years of age were more likely to eat 12 or more meals prepared at home (52%) than people between 18 and 35 years old (38.5%) (significance < 0.001); and,
- Those with household incomes above \$35,000 annually were more likely to eat 12 or more meals prepared at home (51.1%) than those who had incomes of less than \$35,000 (42.8%) (significance = 0.07).

Lastly, our analysis showed the typical number of meals eaten in a day was only influenced by one's level of education. Vermonters with a bachelor's degree or higher were more likely to eat 3 or more meals per day (74.9%) compared to those without a bachelor's degree (67.3%) (significance = 0.044). We did not find gender, income or age to have any significant influence on the number of meals eaten per day.

Conclusions and Implications

From our analysis of weight status, food behaviors and demographic influences, several results may have implications for public health education and further study.

More than half of Vermonters surveyed (54.7%) were found to be overweight, and those who had eaten fast food during the week were much more likely to be overweight. The percentage of Vermont residents who were overweight parallels the trend across the nation. And, while the majority of Vermonters (68.5%) had not eaten fast food during the week prior to the survey, those who had eaten fast food that week were significantly more likely to be among those who were overweight. Further research may help uncover more about the behaviors of those who are overweight but do not eat at fast food restaurants.

Amongst the demographic characteristics, gender and education had the most influence on food behaviors and weight status. We found males more likely to be overweight and more likely to have eaten at a fast food restaurant compared to females. Females tended to eat more home-prepared meals from scratch. Vermonters without a bachelor's degree were more likely to be overweight and more likely to have eaten at a fast food restaurant in the past week compared to those with higher educational attainment. People with a bachelor's degree or higher were more likely to eat more home-prepared meals from scratch.

As one ages and earns more, eating home-cooked meals prepared from scratch is more common. Vermonters between the ages of 18 and 35 were more likely to have eaten at a fast food restaurant, while those older than 35 were more likely to have eaten more home-cooked meals. People making more than \$35,000 in household income were more likely to have eaten more home-prepared meals during the week than those with less income.

Given these findings, it may be reasonable to target more public health resources toward males, younger individuals, people with less education and those with lower incomes in the effort to prevent obesity and weight-related health conditions. Future studies on food behaviors might focus on specific fast food items associated with weight gain and obesity.

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