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Menu Labeling Imparts New Information About the Calorie Content of Restaurant Foods

Hayden Stewart, Jeffrey Hyman, and Diansheng Dong

What Is the Issue?

U.S. Food and Drug Administration regulations require chain restaurants to clearly and prominently display the calorie content of menu items. Major fast-food restaurants, for example, need to post the number of calories in burgers, sandwiches, and other foods on their menu boards; in full-service restaurants, calories are noted in the menus. Some localities around the United States previously had implemented their own regulations. In New York City, where menu labeling has been required since 2008, researchers found that about 28 percent of the customers at a fast-food eatery adjusted their order after noticing calorie information. In Philadelphia, where local menu labeling regulations also had been implemented, 34 percent of the customers at a full-service restaurant adjusted their order after noticing calorie information. Whether a particular consumer responds to menu labeling may furthermore vary with his or her pre-existing knowledge of nutrition. Behavioral economics postulates that, when restaurants do not provide explicit calorie information, consumers may use rules-of-thumb nutrition knowledge to judge the calorie content of meals. For example, a consumer may know that deep-fried foods are typically higher in calories, whereas meals containing fruits and vegetables are generally lower in calories. If such simple rules are effective for discriminating among restaurant meals, then some people already may be able to identify the foods that best satisfy their needs and wants without the help of menu labeling. In this study, we investigate the effectiveness of rules-of-thumb nutrition knowledge for judging the calorie content of restaurant meals, and the extent to which menu labeling imparts additional information.

What Did the Study Find?

Prior to the passage of menu labeling laws, when restaurants were not required to provide explicit calorie data, Americans may have relied on their own knowledge of nutrition to guess the calorie content of foods. This may have worked to some extent since consumers can deduce the healthfulness of restaurant foods from some readily observable cues, as noted by the American Heart Association (AHA) and the National Heart, Lung and Blood Institute

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(NHLBI), among others. For example, as a rule of thumb, Americans should expect deep-fried foods to be higher in calories. If consumers want to lessen the amount of calories they consume, they also should seek out meals rich in fruits and vegetables, and avoid side dishes like French fries and onion rings.

This study confirms that consumers can discriminate fairly well between low- and high-calorie menu items using only rules of thumb. Results show that some simple rules of thumb are fairly reliable predictors of actual calorie content. They and other information available at the point of sale also explain about half of the total variation in calories in restaurant foods. Nonetheless, rules of thumb are blunt tools, and less effective for discriminating among foods that differ modestly in calorie content. For example, a consumer who knows some rules of thumb highlighted by the AHA and the NHLBI already should understand that a chicken sandwich meal at one fast-food restaurant contains fewer calories when ordered with a side dish of applesauce (800 calories) instead of French fries (1,190 calories). However, the same consumer may be unaware whether a sandwich featuring a deep-fried chicken fillet is more or less caloric than the same restaurant's signature hamburger, holding constant the side dish (720 calories with the applesauce, 1,110 with the fries). Similarly, when examining the menu at one full-service restaurant chain, this consumer may be unable to discriminate between a chicken breast served with bacon, cheese, and fried potato wedges (1,172 calories) and a cheeseburger served with fried potato wedges (1,238 calories).

Using rules of thumb can also lead to suboptimal choices because they are not always correct. For example, when dining at a fast-food chain restaurant, consumers should not consider meals less caloric, on average, just because they include fruits or vegetables. Indeed, many of the highest calorie burgers and sandwiches available at fast-food restaurants include lettuce and other vegetables. Similarly, when comparing the most indulgent, highest calorie meals available at a sit-down restaurant, consumers can disregard any rule of thumb about deep-fried foods being the more caloric. Deep-fried foods may actually be lower in calories than other highest calorie choices (such as a pasta dish).

Overall, consumers who have a basic knowledge of nutrition learn less new information from menu labeling than other consumers. However, prior to the labeling, even these consumers could make only crude choices among high- and low-calorie foods. Providing calorie information on menus should help all Americans to better assess the healthfulness of restaurant foods as well as the taste, cost, and convenience and make finer adjustments in their food choices and behavior, if they wish.

How Was the Study Conducted?

A representative consumer was assumed to know some rules-of-thumb nutrition knowledge provided by the AHA and the NHLBI. We then collected detailed information on 361 meals sold by 2 fast-food chains and 5,752 meals sold by 6 sit-down restaurant chains. Finally, we conducted several statistical tests to measure our representative consumer's ability to discriminate among these meals using the rules of thumb. The more information he or she can figure out about the calories in the restaurant foods, the less new information menu labeling imparts, all else constant. Ordinary least squares and unconditional quantile regression models are estimated to gauge whether our representative consumer can understand variation in calories between restaurant meals in general as well as between meals that vary modestly in calorie content.