

Nutrition Education Approaches: Public Information Supply

The economic approach to consumer information on nutrition depends on two assumptions: that the consumer believes acquiring information will lead to benefits and that the consumer can use the information to reap the benefits. Helping consumers achieve this belief and ability is an intermediate goal of nutrition education.

Those educating consumers about nutrition ultimately aim to change eating behavior so that people reap the benefits of better nutrition and reduced risks of disease. At the motivated, action stage of consumer behavior, the economic calculation of costs and benefits of information, as described by Stigler and others, applies.

How effective is nutrition education? To answer this question, USDA sponsored a systematic review of nutrition education. The results were published in the December 1995 issue of the *Journal of Nutrition Education* (Contento et al.). This chapter relies on the results of that review.⁴

Theoretical Considerations From Nutrition Education

The review classifies theoretical models into two basic types: knowledge-attitude-behavior models and "other," which includes motivational, behavioral change, and community development models. Knowledge-attitude-behavior models assume that when consumers are informed about components of a healthy diet, they will modify their attitudes and their diet. In general this approach has not been successful in changing behavior. Knowledge of healthful diets alone will not affect behavior; people also must be motivated to change. The knowledge-attitude-behavior approach has often been applied by providing "how-to" knowledge—how to have a healthy diet—without also motivating people. People may become motivated to change their habits if they believe healthy eating will produce improved health and reduce risk of chronic disease. Unless consumers are convinced that consumption of fat can increase risks of cancer and heart disease, their knowledge that pretzels contain less fat than potato chips is not likely to precipitate a switch from potato chips to pretzels.

⁴Much of the same literature was also reviewed in an earlier National Academy of Sciences study (Thomas, ed., 1991).

Models in the second category, basically "other," are not sharply distinct from each other or from the knowledge-attitude-behavior models. Models that focus on individual behavior first emphasize the need for motivation, such as a threat to be averted or a gain to be acquired. Threats are apparently more effective motivators than gains. The models also require that individuals believe they are capable of carrying out actions necessary to improve their health. Additional aspects of individual change models emphasize that individuals interact with others and evaluate and alter their behavior based on the interaction. Finally, these models identify stages of behavioral change: precontemplation, contemplation of change, decision to change, overt behavioral change, and maintenance of change. Nutrition education programs need to target the appropriate stage of change to alter behavior.

Additional theories should be considered with respect to education programs targeting individuals. The information processing approach asserts that individuals have a finite capacity to process information and, therefore, process information by using "rules of thumb," by searching the environment, and by using their own memories for clues. This approach resembles the economic approach because it emphasizes the costs of acquiring and using information. The applications to nutrition education are direct. Nutrition education can provide rules of thumb—5 A Day (meaning five servings of fruits and vegetables a day), so consumers need not remember the specific nutrients provided by different fruits and vegetables. Consumers' tendency to search the environment for information is important for developing programs at the point of purchase or choice. In addition, the message itself needs to be considered carefully. Communication theory and marketing practices can contribute in the search for effective messages.

Examples of Interventions

Cases in which nutrition educators have changed consumers' eating habits illustrate these considerations. In addition, many of the successfully targeted behaviors require little or no additional time or money than the less healthful behavior: the consumer simply picks up one cafeteria item rather than the other or selects from different menu items or products on a grocery store shelf.

Three national health campaigns used media heavily: the National High Blood Pressure Education Program, initiated in 1972; the National Cholesterol Education Program, initiated in 1985; and the 5 A Day for Better Health program, initiated in 1992. Nutrition educators used focus groups, concept tests, and message tests to determine if their message about blood pressure was effectively informing the target audience. By 1985, the share of people aware of the link between high blood pressure and heart disease had increased from 29 percent in 1972 to 92. Physician visits for hypertension and the percentage of diagnosed hypertensives under treatment increased as well.

When the cholesterol program began, 65 percent of people understood the link between cholesterol levels and heart disease, but only 35 percent of people had had their cholesterol checked. The campaign aimed to change this. By 1990, 65 percent of adults reported having had their cholesterol checked.

The 5 A Day for Better Health program advocates, through media and other channels, that individuals consume five servings of fruits and vegetables each day. The amount of information disseminated about the program was impressive. Within 1 month, there were 1,800 media messages. Within 1 year, all governors had signed proclamations of support, 225 newspapers had carried stories, and 1 million brochures had been distributed about the program. Results were less encompassing than for the other two campaigns:

The campaign and the principal message had substantial penetration during 2 years: the percentage of Americans who knew that five or more were the number of servings of fruits and vegetables to eat each day for good health rose from a baseline of 8% to 29% and the percentage who believed that eating fruits and vegetables would “quite likely” help prevent cancer rose from 45% to 64%. On the other hand, 13% (up from 8%) reported that it would be “very hard” to eat five or more servings of fruits and vegetables per day (Contento et al., page 314).

Excluding potatoes, per capita fresh fruit and vegetable consumption increased 34 percent between 1970 and 1996, while processed fruit and vegetable consumption increased 18 percent. This campaign, higher incomes, and other sources of information apparently produced

some shift in diets; however, most of the change occurred before the campaign’s kickoff in 1992 (Putnam and Gerrior).

Contento et al. note that these national campaigns and other information sources appear to have had a strong secular effect in reducing risk factors for heart disease over the 15 years preceding the review. In fact, many smaller, community-scale studies using media and other communication channels found that both their control communities and their targeted communities improved. It was difficult to achieve statistically significant effects in targeted community populations in addition to the national effects.

Many nutrition education efforts are conducted in small groups, as part of larger Federal programs, in community settings, and at work sites. Groups can be effective at each stage of change when they first motivate consumers to alter their eating habits and then inform and educate people about how to change. Because group settings differ so widely, it is difficult to characterize the results of all attempts to change behavior. Generally, more effective programs are interactive, tailored to the clients, and run for a long time.

Nutrition education interventions at the point of choice occur in stores, restaurants, work-site cafeterias, and vending machines. Point-of-choice programs generally involve labeling the food, shelf, or menu with nutritionally relevant information such as “low fat.” The review found that these programs change choices while they are present, but change generally does not persist once the labels are withdrawn. The initial success and lack of persistence of these approaches is consistent with an information-processing view of consumers. This view asserts that consumers will rely on signals from the environment rather than their memories. When the information is absent, consumers revert to old habits.

Conclusions From a Review of Nutrition Education Interventions

The conclusions of the literature review reinforce the theoretical considerations for conditions for success in nutrition education that advocates action:

1. Motivation must be present. Consumers must perceive personal consequences from undertaking or not undertaking change.

2. Messages advocating action must be clear and relevant to consumers' situations. For some, messages must emphasize motivation and consequences; for others, messages should emphasize how to's. An important part of a nutrition education program is determining in advance the state of knowledge and attitudes of the target population.

3. Advocated actions must be understood by consumers, who must feel capable of implementing them. From an

additional economic perspective, if advocated actions are low-cost in money, time, and effort, consumers will be more likely to adopt them.

4. Reminders via media or at points of choice are effective while they continue. Thus, nutrition education must be a continuing effort, not a one-time program.