

NUTRITION LABELING:
HOW EFFECTIVE IT IS IN REDUCING OBESITY?

A REVIEW OF PUBLIC POLICIES DEALING WITH NUTRITION LABELING

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Table of Contents

	Page
Acknowledgement	i
Executive Summary	iv
Chapter 1: Introduction – purpose and significant of study	
Background of the problem	3
Statement of the problem	4
Methods and procedures of the study	5
Importance of the study	5
Chapter 2: Review of the Literature	
Lack of nutrition knowledge contributes to obesity	10
Other influence	12
Previous research	13
Chapter 3: Policy Initiatives Regarding Nutrition Labeling	
The Nutrition Labeling and Education Act (NLE) of 1990	18
Multiple labeling systems.....	19
Labels requirement	20
Nutrition labelling in other Countries	21
Future consequences	22
Constraints and political feasibility	23
Alternatives	25
Chapter 4: Summary, Conclusion, and General Recommendations	
Summary	29
Conclusion	30

Recommendations	32
End discussion and analysis	35
References	37
Appendices:	
Appendix A - IRB Letter	43
Appendix B - Nutrition Labeling and Education Act of 1990	44

Executive Summary

Due to the link that has been established between obesity and processed and fast foods in America, recent research has emphasized examining the potential health benefits of providing nutrition information in fighting the nation's obesity epidemic. Nutrition label usage has been increasing due to the link between diet and health over the years; however, the rate of obesity has only increased since the passage of the Nutrition Labeling and Education Act (NLEA) of 1990. As a result, there has been increasing threats of legislation and regulation of both food labeling and food marketing practices in such a way that regulatory agencies have pointedly asked: how effective is nutrition labeling in reducing obesity in the US?

In attempting to answer this question, the paper focuses on nutrition labeling and its connection to obesity. This policy analysis is designed to provide the reader with an inside look on nutrition labeling policy's effect on obesity. It investigates the relationship between nutrition labeling and the rising obesity rates in the US and explores a plethora of practical considerations that must be addressed before labeling policies are implemented. The findings of this study can provide useful information to policy makers and nutrition labeling regulatory agencies on improving nutrition labeling system in the US. Ultimately, this policy analysis finding has the power to call the Nation's attention to how pervasive the problem is and how many people are struggling with the labeling system.

The project is divided into four chapters as follows:

- The first chapter discusses the purpose and significant of the study. Here, background of the problem is discussed, the statement of the problem is stated, methods and procedure are stated, and the importance of the study is defined.

- Chapter two gives an overview of the problem. This chapter determines the relationship between nutrition labeling and obesity based on previous research. The federal nutrition labeling bill is analyzed. The importance of the bill is highlighted and previous research on nutrition labeling is analyzed which delves into more detail about the nutrition labeling policies. In the last section of this chapter, the potential solutions are briefly discussed.
- In the third chapter, policy alternatives are analyzed. This chapter explores alternative policies and solutions to deal with the nutrition labeling, discuss comparison to future consequences, and spillovers and externalities. The end of this chapter explore constraints and political feasibility of the current nutrition labeling policies.
- The fourth and final chapter of this paper examines the alternatives and provides recommendations. The recommendations are: [1] to provide real serving size of food to make it easier for consumers to understand nutrition information; [2] to improve the ingredient list so that consumers will know exactly what they are getting; [3] for FDA to require labels for unpackaged foods; [4] to get rid of the qualified health claims and replace it with a —traffic light” system; and [5] to specified instead of generalized nutrition information.

The findings and conclusions presented in this report were, of course, determined independently. The fact is the current nutrition labeling system is not perfect; therefore, there is still a lot that need to be done when it comes to nutrition labeling in America.

CHAPTER 1

Chapter 1

Introduction: Purpose and Significant of the Study

In an attempt to simplify food products' nutritional qualities even more for consumers, the Food and Drug Administration (FDA) developed a nutrition labeling system. Nutrition labeling is based on the premise that providing consumers more information can help them understand the nutritional content of foods, which will lead them to improve their purchase decisions and eat a healthier diet (Cowburn & Stockley, 2005). Nutrition labeling should improve people's knowledge about nutrition and reduce the rate of obesity in the United States of America (USA).

Nutrition labeling refers to a list of nutrients on a food label accompanied by some form of quantifying mechanism. Nutrition labeling of foodstuffs is currently regulated by the FDA. The Nutrition Labeling and Education Act (NL&E Act) of 1990, signed by President George H.W. Bush, gives the FDA authority to require nutrition labeling of most foods regulated by the agency, and to require that all nutrient content claims (for example, 'high fiber', 'low fat', etc.) and health claims meet FDA regulations. In other words, under this law, nutrition labeling must appear on the food label or in accompanying labeling. The aim of nutrition labeling is to provide consumers with the necessary information to enable them to make safe, healthy and sustainable choices. The FDA defines 'healthy' as having or indicating good health (general condition) in body and mind, and free from infirmity or disease.

On the other hand, many Americans are becoming unhealthy and more are increasingly purchasing processed foods and eating more meals out. As a result, nutritional data is needed to help people make healthier choices. Americans spend 48% of their food dollars eating outside of the home (National Restaurant Association, 2006). The fast food and restaurant industry was

projected to grow at a rate of 3% through 2007, marking 15 years of consecutive growth (Technomic Inc., 2006). Indeed, many in the food industry have responded to America's increasing health food consciousness by adding a variety of healthy options to their products. However, less effort has gone into helping customers select these healthier food choices.

Background of the Problem

Obesity is a major health issue in America. Lack of nutrition information is related to greater weight gain and obesity. Studies have found that frequently eating in restaurants where nutrition information is not provided is related to higher intakes of fat, sodium and soft drinks, and lower intakes of nutrient-dense foods, such as vegetables (Binkley, Eales, & Jekanowski, 2000).

While many people believe that the culprit is the lack of nutrition information, nutritional labeling regulation has been around for more than a decade. Moreover, the rate of obesity has increased rapidly in the past two decades as well as become a controversial public health and public policy issue. Currently, many experts in the health field have targeted nutrition labeling as a means to help decrease the rising prevalence of obesity. Obesity causes a wide range of serious complications and increases the risk of premature illness and death, raising public-health concerns (Ebbeling, Ludwig, & Pawlak, 2002).

The wide range of factors contributing to food choices is compounded by the incredible variety of foods and consumption opportunities available today. Each day, people make choices among thousands of food products, choices about whether to eat at home or in a variety of restaurants, and choices about lifestyles, such as diet quality and exercise. As a result of nearly unlimited choice, a policy targeting nutrition labeling could have surprising unintended

consequences. Nutrition labeling is one of the most promising strategies for preventing obesity in the US (Kuo et al, 2009).

Statement of the Problem

Every year, more than 300,000 Americans die from diet-related diseases and conditions such as obesity (Centers for Disease Control and Prevention, 2007). According to the National Conference of State Legislatures (NCSL), annual direct medical expenses attributable to obesity in the United States were estimated at \$75 billion for 2003 (2010). Taxpayers fund about half of these obesity-attributable expenditures through Medicare and Medicaid (NCSL, 2010).

Obesity has become a serious threat to the health of Americans. These diseases have taken a heavy toll on people, especially low income families and people who eat out a lot. In the same manner, nutrition and the quality of life are intimately related. Studies show that good nutrition can promote quality of life and optimal functioning. Therefore, taking in recommended nutrition each day will increase the chance of a longer life. However, most of the foods people consume are not nutritious enough to provide the recommended nutrition needed daily and many other do not know how to read nutrition labels; and this is where the problem lies.

The problem of obesity in America has no single cause. Rather, obesity is the result of multiple factors acting together over time, including genetic (Loos & Bouchard, 2003) and environmental factors (Hill & Peters, 1998; Hill *et al.*, 2003). Similarly, there will be no single solution to the problem of obesity; it will be brought under control only as a result of coordinated, complementary efforts from a variety of sectors of society. The obesity epidemic will not be solved quickly; therefore, any long-lasting reversal of this phenomenon will itself be

a long-term process. With this in mind, some health advocates have called for a tax increase on processed and take out foods.

Methods and Procedures of the Study

This paper was informed through a literature review. Journal articles, books, and websites were used as references. Many of the journal articles, from a variety of journals, were accessed through the University (California State University, Bakersfield) library catalog. Websites were also utilized as sources. In many of the articles and books, the Centers for Disease Control and Prevention (CDC) and the US Department of Health and Human Services (USDHHS) were cited as a major source of both statistics and policy. As such, the CDC website was searched for relevant information.

The primary method used to analyze this project was gathering and using existing quantitative data from a compilation of existing nutrition labeling policies, making comparisons where appropriate, and placing them in context when possible. A literature review concerning the relationship between nutrition labeling and obesity and research studies regarding nutrition labeling was conducted. In the end, recommendations on how to make nutrition labeling effective on obesity will be made.

Importance of the Study

This paper explores policies and solutions with nutrition labeling issues. The intention of nutrition labeling is to bring healthy living to people and to produce an environment that supports a healthy lifestyle. Without strong interventions, obesity rates among the population will continue to increase and people will still remain uneducated about the importance of good

nutrition and proper dieting. Obesity is not just an issue for the obese population, but for a society as a whole. Therefore, addressing this issue is vital.

The analysis examined recent evidence of nutrition labeling policies efforts to improve people's knowledge about nutrition. In particular, the research synthesis reviewed studies that have examined the use of nutritional labeling and the potential impact of labeling on consumers' food and beverage selections. In the end, the paper provides recommendations to the nutrition labeling policies and provides a feedback loop so that these policies can adapt and achieve maximum benefits. The result of this analysis may allow for future decisions regarding policy concerning nutrition labeling to be made with more information and knowledge and allow people to be more informed and knowledgeable in making decisions regarding food. Finally, the result could also be beneficial to other similar policies with similar issues.

CHAPTER 2

Chapter 2

Review of the Literature

It has been almost two decades since the Nutrition Labeling and Education Act (NLEA) was introduced. The intent was to empower consumers to make more informed purchasing decisions. With obesity becoming a national priority, policy makers and health advocates have begun to question the effect of nutrition labels. On the other hand, a wealth of nutrition information is at everyone's finger-tips these days and everyone seems to have an opinion about what one should be eating. It is no secret that good nutrition plays an essential role in maintaining health. While people already know it is important to eat a healthy diet, people may find it more difficult to sort through all of the information about nutrition and food choices and understand nutrition information on foods. The lack of knowledge on nutrition labeling and how consumers use nutrition information has become a target for combating obesity. These demands are based on the belief that people need to be better educated about the nutritional value of the foods they purchase and that misunderstanding nutrition facts has contributed to the obesity problem. This chapter will provide the evidentiary support to validate these claims.

The average American diet is low in fiber, calcium, magnesium, potassium and vitamins A, C and E. The Nutrition Labeling and Education Act (NLEA) passed by the US Congress in 1991 required all food packages to contain nutrition information in label form. Most labels must include the serving size, the number of calories, calories from fat, total fat and amount of saturated and trans fat, cholesterol, sodium, fiber, sugar, and protein. In addition, nutrient information per serving has to be placed in the context of a daily diet.

According to Choices magazine, 54 percent of consumers say they read nutrition labels and use the information to make purchasing decisions (2010). This number is up 24 points since 1990; however, there is no observed decrease in obesity rates. NLEA was also intended to

encourage food manufacturers to make healthier products that would allow them to use various marketing claims, such "Low Fat" if the ingredients met certain standards. Although the food manufacturers responded with dozens of fat-modified products, obesity has only increased. This has led many to conclude that further confusion exists among consumers about portion sizes, calories, and weight management.

The practice of poor nutrition is one of the many factors often linked to obesity. In fact, research shows people today are consuming more than the recommended amounts of sugar, total fat, and saturated fat, while not consuming enough fruits, vegetable, fiber, and calcium. People, especially youth, are consuming far too much processed food, chicken bites, French fries, macaroni and cheese, and sodas, on a regular basis (Goel, 2009). Many people eat processed food now more than ever before. Many processed foods are high in fat and sugar, making weight gain likely. For nutrition labeling to impact peoples' food purchasing decisions, people need to know how to use the information. Consumers must be able to read the label, understand the information, and then make decision on consumption based on the information provided. Sometimes the federally mandated labels, chock-full of useful information, are notoriously difficult to understand. Some professional nutritionists even admit to having a hard time using the information to make smart food purchases. Moreover, even shoppers who understand the labels do not have the time to compare five or six or more of same type of foods before moving to the next aisle for their next purchase. The fact is that shoppers can-not really go wrong choosing between an apple and an apple-pie. However, the decisions are a lot less clear when shoppers are trying to decide between Cheerios and wheaties. This is what makes shoppers frustrated.

As it stands, shoppers are swamped with packaging and advertisements that scream "low-fat," "fortified," "sugar-free" and dozens of other healthy promises. There are times when regular mayonnaise may actually be healthier than the low-calorie option, or the full-fat organic peanut butter is a better choice than the "light" name-brand product; however, figuring that out takes knowledge and time (Lewis et al, 2009). A consumer's perceptions of serving size are highly unreliable and can unknowingly vary by as much as 20% (Wansink, 2004). With discretely packaged items, such as a 12-ounce can of a soft drink or a single-serving candy bar, the intended serving size is obvious. In many other contexts, however, such as a one-pound bag of M&M's, a large box of granola, or a full 24-ounce bowl of macaroni and cheese, the appropriate serving size is more ambiguous. In the absence of salient, unambiguous serving-size information, people must infer what the appropriate serving size is from other cues. Although such inferences might be based on prior experience, they might also be made on the basis of cues that are found on a package or nutrition label. The purpose of this chapter is to determine the relationship between nutrition labeling and obesity based on previous research.

Lack of Nutrition Knowledge Contributes to Obesity

Poor nutrition is associated with an increased risk of a number of chronic health conditions including cardiovascular disease, diabetes, some cancers, high blood pressure, as well as overweight and obesity. Sixty-eight percent of U.S. adults are obese (Flegel et al, 2010) and thirty-two percent of children are obese (Ogden et al, 2010). Over the past 10 years, obesity has increased 60 percent among U.S. adults. The incidence of obesity has risen dramatically over the past two decades. Obesity in an individual is the result of an energy imbalance in intake and output. Although the cause of this imbalance on a population level is not fully understood,

changes in the food environment, including the proliferation of convenience foods high in energy and fat content, have paralleled the obesity epidemic. Efforts to both prevent and manage obesity usually emphasize nutrition information/knowledge, (e.g. appropriate food choices and methods of calorie reduction). An underlying assumption of this approach is that poor understanding or lack of knowledge about nutrition labels leads to weight gain.

While people are generally aware of the health hazards of obesity, many people have no clue what they should be eating, let alone how much. Most consumers use the nutrition information provided and their intuitive beliefs to make inferences about missing attributes that are important for their decision (Broniarczyk and Alba, 1994). With nutrition, however, such inferences can result in inappropriate generalizations (Garretson and Burton 2000; Kozup, Creyer, and Burton, 2003; Wansink, 2004). In 1998, the Andrews, Netemeyer, and Burton studies show that consumers falsely infer that foods low in cholesterol are also low in fat. Similarly, there is anecdotal evidence that some consumers erroneously believe that low-fat nutrition claims indicate fewer calories (National Institutes of Health, 2004). People do not realize that when the FDA determines whether low-fat nutrition claims are appropriate, it considers only the amount of fat, not the number of calories.

The fact is that the less educated one is, the less likely it is that one will have the tools to find out what to eat or how much to eat. People with less education tend to have little or no knowledge on nutrition, let alone healthy foods. Hence, we encounter new phenomena such as the obese teens who sued McDonald's because they thought a steady diet of McDonald's was healthy in the year 2008. —What we did in making nutrition labeling mandatory did not help obesity. In fact, some people would say it hurt ... The first thing we notice is this contradiction about the fact that we had mandatory nutrition labeling for ten years, and the situation got

steadily worse during that time." -*Former Food and Drug Administration Commissioner Lester Crawford at the World Obesity Congress and Expo, 2004.*

Other Influences

While nutrition labeling has become a focus of considerable attention by researchers, media, health professionals, and government authorities, it is of considerable relevance to understand how people perceive nutrition labeling and its connection to obesity.

In the 1990's, supermarket shelf labeling programs grew rapidly and become a popularity contest among food manufacturers. In addition to this, nutrition labeling programs and seals of FDA nutrition facts panel also began to appear on food containers and boxes with the American Heart Association food certification program leading the way. The American Heart Association food certification program allowed a Heart Check Symbol to appear on foods low in saturated fat and cholesterol. Not to be outdone, more than a decade later, Kraft Foods launched its Sensible Solutions program. The Sensible Solution program offers a broad range of food choices across Kraft brands to help people make smart choices for meals and snacks (Kraft Foods website, 2010).

Following the foot-steps of the American Heart Association food certification program and the Kraft Foods Sensible Solution program, for the very first time in the USA, in 2006 a supermarket joined the quest to help consumers shop for healthier products. Hannaford Brothers Supermarket launched its "Guiding Stars" program to assist its consumers in making healthier choices. The program rank foods with 0 to 3 stars, with 3-stars being the highest rating. As of today, similar programs are now being used at supermarkets and by supermarket most

manufacturers, such as Giant Foods, Stop & Shop, and Mars, Kellogg's, Sara Lee, General Mills, Con-Agra, Coca-Cola, PepsiCo, and Unilever (Armstrong, 2010).

Although some believe that programs or seals that are intended to help shoppers make healthier choices rather confused shoppers, little is known about that. However, it is evident that most people find food labels as a credible information sources. In fact, according to study published in a scientific journal, shoppers are more likely to trust nutrition symbols approved by third parties such as health organizations, like the American Heart Association.

Previous Research

Many recent consumer choice studies suggest that the effect of nutritional information may be modest. For example, a Pennsylvania State University study of food intake among normal-weight women found that explaining the concept of energy density (number of calories per gram of food) and providing nutrition information on labels during meals in a laboratory setting had impact on subjects' energy intakes. A restaurant study in England found that providing nutrition information alone without educating consumers on how to use it had no effect on overall energy and fat intake of patrons. In fact, the presence of 'lower-fat' information was associated with fewer restaurant patrons' selecting the target dish. Another study in an Army cafeteria found no significant difference between sales before and after nutrition labeling for either average "healthy" (labeled, containing less than 15 grams of fat and 100 milligrams of cholesterol per serving) entrée sales or the proportion of healthy entrées to total entrée sales (*Amber Waves, 2005*).

Some study estimates of impacts on obesity have been made with regard to nutrition labeling of restaurant menus. A recent study of pre and post calorie labeling of Starbucks' menu

items estimated a 6% reduction in calories per sales transaction, and further projected a decrease in long-term body weight of less than 1% (Bollinger, Leslie, & Sorensen, 2010). An impact assessment in Los Angeles County estimated that restaurant menu labeling could decrease the annual weight gain of residents by 41%, based on estimates from other reports that 10% of restaurant patrons select reduced-calorie meals as a result of menu labeling with an average calorie reduction per meal of 100 kcal (Kuo et al., 2009).

A new study scheduled to be published in the February issue of the American Journal for Preventive Medicine found that mandatory fast food menu labeling does not help change consumers' dietary habits (2011). The study found that nutrition facts added to menu at Taco Time restaurants in King County, Washington had not had any effect on consumers' purchasing habits. In King County, a mandatory menu labeling regulation intended to curb the obesity epidemic went into effect in January 2009 to require all restaurant chains with 15 or more locations to post nutrition facts for menu items. Calorie information is required to be posted at the point of purchase. Dr. Eric Finkelstein, from Duke-National University of Singapore (NUS) Graduate Medical School and health officials in Seattle and King County, compared purchasing behaviors at the Taco Time restaurants with and without nutrition facts labels provided. He found the menu labeling did not affect the total sales and average calories per purchase. Dr. Finkelstein said the results suggest that mandatory menu labeling is unlikely to affect the obesity epidemic. Dr. Finkelstein was cited saying the problem is not the lack of nutrition information but rather the lack of knowledge on nutrition information.

Nutrition labeling has become an important focus of political and legislative initiatives targeting the cause of obesity. Recently across the nation, some states and counties including New York, California, and Kings County, Washington has adopted a fast food and chain

restaurant nutrition labeling policies (also known as the Menu Labeling Bill) since the FDA's NLEA did not require restaurants and fast foods to comply with the same standards. These states have also become actively involved in developing obesity prevention strategies both in schools and communities in boosting their state competitiveness.

All of these studies have approached the problem of nutrition labeling and obesity from different perspectives. The studies were structured and executed carefully, covering a wide range of variables. However, one visible gap that seemed to stand out in all of the studies was that the researchers did not discuss income influence. A person's economic income plays a central role in determining how much or what a person eats which can influence a person's eating habits. Poor people from inner city rarely have access to super markets. They must rely on corner stores that rarely stock fresh lean meats, fruits and vegetables, so they buy the cheap processed food. Or they eat at McDonalds, Krispy Kreme or Taco Bell because the food is cheap, tasty and plentiful. These people also tend to assume food availability equals food is healthy and that serving size and nutrition claims are what makes food healthy. The ambiguity regarding serving sizes and inferential mechanisms suggest that relative nutrition claims could create misleading "health halos" that lead consumers to believe that food that contains fewer something (e.g. calories, fat) is acceptable or appropriate to consume more when the food is described as being lower in something (e.g. calories, fat). Therefore, the hypothesis is that a relative nutrition claim communicated by a low something label and the lack of knowledge on how to use label increases food intake because it increases a consumer's serving-size estimate.

The literature did not also mention whether the research participants were asked about what they can afford to buy or eat. If they had included these variables and showed how a person

eating habits are, it would have played an important part of what may lead to obesity. The studies would have been even more complete.

Labeling is an area of critical concern among regulators such as the U.S. Food and Drug Administration (FDA). Although much is known about how nutrition labels influence health beliefs and purchase intentions (Moorman et al., 2004), the pressing issue for the FDA is how relative nutrition claims influence single-occasion intake (Blakely, 2005). A particularly acute concern is that labels may lead to the overconsumption of nutrient-poor and calorie-rich snack foods by the 65% of U.S. consumers who are already overweight and obese (Hedley et al., 2004).

There is an association between obesity and the lack of knowledge on nutrition information. Obesity will continue to be a growing problem unless we improve understanding of nutrition information, healthy eating, as well as creating an environment that supports these behaviors. To respond to the complex combination of social, cultural, environmental and behavioral factors that contributes to the growing number of obese Americans, efforts are underway to raise awareness and encourage healthy eating and a more active lifestyle. Policymakers are striving to promote opportunities for nutritious food choices in schools, workplaces, and communities. This evident that healthy eating lowers people risk for many chronic diseases, including obesity. Yet a large gap remains between nutrition recommendations and what Americans actually eat. The next chapter will delves into more detail about the Nutrition Labeling and Education Act (NLEA) of 1990.

CHAPTER 3

Chapter 3

Policy Initiatives Regarding Nutrition Labeling

The federal nutrition labeling system in America is a very complex and intricate system. Although the labeling system have provided consumers with the information necessary to maintain healthy dietary practices, the system is not perfect but rather a healthy effort to help people. The nutrition labeling system is set up in a way that only certain food groups can be regulated (e.g. breads/cereal/rice/pasta, fruits/vegetables, milk/yogurt/cheese, and beans/nuts), while other foods such as meat, poultry, frozen and dried eggs and the labeling of alcoholic beverages and tobacco are not regulated. This system prohibits the FDA from being able to control all food labeling and makes it difficult to achieve proper nutrition labeling.

The overwhelming need for analyzing the nutrition labeling system stems from the fact that obesity in America is now a growing epidemic. There is increasing evidence of a positive correlation between snack food and fast food consumption and rising rates of obesity in the US population (Nielsen & Barry, 2003; US Department of Health and Human Services, 2001). Several studies have concluded that consumers do not understand food package nutrition information as it is currently provided (Levy, Patterson, Kristal, & Li, 2000; Young & Nestle, 2002). It appears that the nutrition labeling system and structure are not in accordance with how people are using it. The purpose of this chapter is to convey the results found in various research and legislative policies and to analyze the current Nutrition Labeling and Education Act (NLEA) policies.

The Nutrition Labeling and Education Act (NL&E Act) of 1990:

On November 8, 1990, the president of the USA (George H.W. Bush) signed into law the Nutrition Labeling and Education Act (NL&E Act). This act represents the first comprehensive

revision of the food labeling requirements of the Food, Drug and Cosmetic Act (FD&C Act).

The law gives the Food and Drug Administration (FDA) authority to require nutrition labeling of most foods regulated by the agency, and to require that all nutrient content claims (for example, 'high fiber', 'low fat', etc.) and health claims meet FDA regulations. In other words, under this law, nutrition labeling must appear on the food label or in accompanying labeling. The FDA is the scientific regulatory agency responsible for the safety of all foods (except meat, poultry, frozen and dried eggs and the labeling of alcoholic beverages and tobacco), cosmetics, drugs, biologics, medical devices, and radiological products. Regulations are meant to be beneficial for a community with an emphasis on improving costs and quality on foods (Morgan, 1980). However, the system is very unique in its own way. To compensate for this unique system, the FDA is very strict on controlling and coordinating those foods that can be regulated and usually charges (punish) the food manufacturers if they fail to follow the rules.

People opposing the NLEA (mostly, food manufacturers) believe it is burdensome and costly, and they assume that it would have cost the food industry billions of dollars annually. Another concern with the NLEA is that it fails to address the real causes of obesity focusing attention exclusively on just providing nutrition data. The actual text of the bill is in appendix B.

Multiple Labeling Systems

One issue with the nutrition labeling system is that it is not a single labeling system but rather multiple labeling systems which befuddle consumers even more than they already are. Between the federal nutrition labels, product marketing, and brand names that promise health benefits, it is no wonder consumers are frustrated and making poor choices. This system makes it more confusing for the general public. When people determine how much to eat, the multiple

labels can provide both objective and subjective consumption cues. Objective consumption cues, such as serving-size information, explicitly suggest an amount to eat on a single occasion.

Subjective consumption cues, such as those provided by endorsed nutrition claims or by relative nutrition claims (e.g., low fat), do not specify a serving size. However, they may influence how much a person infers to be a reasonable amount to eat, and they may influence how much pleasure or guilt a person anticipates feeling by eating that amount. Although it is nearly impossible to develop a simple labeling system that would apply to every consumer, if the government is going to regulate nutrition information, they will need to step it up to make it effective to everyone.

Labels Requirement

Food labels are not always required, as long as no health claims are made. Generally speaking, it is costly to acquire and disseminate nutritional information; therefore, foods produced in limited quantities or by small businesses, ready-to-eat foods, or foods packaged for immediate consumption are exempt. For this reason, foods such as those sold in vending machines, snack bars, bakeries, restaurants, etc. are not required to have nutritional information. Moreover, foods that contain only insignificant amounts of nutrients considered important under the law do not need labels.

Without a doubt or question, it is easy to determine when there is no nutrition information. However, the problem is when nutrition information is limited. But as long as the company providing the food is small, and the label does not say "Nutrition Facts" or make specific health claims based on nutrients claimed to be in the product, it appears that the manufacturers do not have to follow standard format or procedures of the nutrition labeling

regulation. And if manufacturers do not have to follow the usual nutrition label regulations, manufacturers can create their own rules for presenting nutrition information. As a result, if one assumes anything about portion size and methods of determining nutrient counts based on the food label laws, one may be wrong.

The problem identified in the literature and that is specific to this policies is if proper nutrition labeling is difficult to achieve then it will take a toll on the people. Although there is a growing body of literature on how use of nutritional labelling influences peoples' food purchasing decisions, much work is still needed to refine the labeling regulations.

Nutrition Labelling in Other Countries

Unlike America where nutrition labelling is mandatory, in other part of the world, nutrition labelling is voluntary or optional but necessary if health claims appear on the labels or advertising; this is the case in Europe. In Europe, nutrition labelling is harmonised. The European nutrition labelling system is optional; however, it becomes compulsory if a nutrition claim is made on the label, in a presentation, or in advertising.

In the 1980s, the European Commission aimed to put in place a comprehensive nutrition labeling system of better regulation for Europe and to help consumers make healthy, sustainable dietary choices; therefore, Directive 90/496/EEC Act was passed. The Directive 90/496/EEC Act entered into force on January 1, 1990. The Directive 90/496/EEC regulates food stuffs in Europe, under which nutrition labeling is optional, unless a nutrition claim is made. That is a suggestion that a food has particular nutritional properties, such as being low in fat – is made in the labeling, advertising or presentation of the product. In this case it is compulsory for producers to provide nutrition information, in the standardized format stipulated by the Directive (EUROPA, 2009).

Some parts of Europe (such as the United Kingdom) use a system called the “traffic light” system (red, amber, and green) to give consumers information at a glance about the content of key nutrients relevant to health. This scheme uses red to indicate the least healthy foods and green for most healthy foods. On the other hand, other countries in Europe use the front-of-the package labeling system (Europe Agri, 2010).

Like America, the European nutrition labeling system is not perfect and sparks numerous criticisms. Although many independent research reveals that consumers find the system to be simple and as the most informative way to make healthier choices about the products they buy, the rate of diet related diseases, especially obesity, has only increased in Europe, indicating that something must not be working (Smithers, 2010) .

Future Consequences

With today’s fast-pace life style where most people have corporate jobs that require long hours at work, people do not have the time to read nutrition labels. The fact is that people need to be better educated about the nutritional value of the foods they purchase and that misunderstanding about nutrition facts will lead to over-eating. The consequences of not educating the public could result in an increase in obesity.

Currently, the inability to translate awareness to action on nutrition labeling is one of the reasons people are still eating poorly, despite knowing about the consequence of poor nutrition. When people go to the supermarket, the only way to know if they are choosing a healthy food is by reading the nutrition facts and ingredient listed for products they are contemplating. And if people do not understand the information provided, it is not going to be easy to comprehend. In 2010, the Journal of the American Dietetic Association published a study that looks at the use of

nutrition labeling by consumers when shopping at the supermarket. Using a nationally representative sample of US adults, the researchers found the following: [1] more than 6 out of 10 of participants reported using the Nutrition Facts panel, [2] half looked at the list of ingredients, [3] 4.5 out of 10 looked at serving size, and [4] 4 out of 10 reviewed health claims at least sometimes when deciding to purchase a food product.

The scientists found a correlation between label usage and healthier food choices and consumption. Assuming healthier food leads to lower weight (portion size is also important), one can postulate that getting more people to use nutrition labels properly will help lower obesity. However, nutrition labels are not “user-friendly” enough. In many cases, health claims on the front of package obfuscate the less glamorous ingredients and nutrients in a product. If people could more readily understand what they were really getting, perhaps their choices would improve.

There are many possible changes in nutrition labeling that could help people make better choices. Unfortunately, the food industry is not interested in any changes, and with a strong lobby will fight legislation to change the existing label. This problem continues to negatively impact the nutrition labeling system.

Constraints and Political Feasibility

An issue facing policy makers and other opinion leaders is that there is little guidance to know which policy proposals would have greatest public health impact and which would be the most politically feasible (Wang & Brownell, 2005). Scientific findings on obesity cannot alone establish policy priorities. Data from fields such as tax policy, agricultural economics, trade policy, marketing, and political science need to be synthesized to help establish policy priorities.

Given the gravity of the problem and the potential cost of implementing these policies, it is crucial to know two basic things about nutrition labeling policies:

1. their *political feasibility* - that is, the likelihood that nutrition labeling policies will receive a favorable hearing from policy makers; and
2. their *potential public health impact* - that is, the likelihood that nutrition labeling will help reduce and/or prevent obesity.

Public health experts and economists have converged on the idea that conditions should be created where behaviors that improve health and well-being become the default (Choi et al. 2003; Thaler & Sunstein, 2003). With minds differing on whether a policy will enhance society's welfare, the public interest is a flexible concept to accommodate such a range of view. Culture differences may also explain diverging views on what is in the public's best interest. However, in this policy analysis, it is clear that the public's interest is apparent and easily understood, but the environment and its structure are also complicated and complex. What is apparent is that the federal government regulates nutrition labels. What is complicated is how the general public uses nutrition labels information. All solutions and recommendations in chapter four are as complex as the situation itself. Nutrition labeling policies affect the health of the nation. Decisions not made in the public's interest (e.g. the proposed tax increase on processed and fast foods), can result in adverse consequences for the welfare of society. There has been newly created friction between food manufacturers and Congress because of the situation. This is harmful to the public's interest in the aggregate. This has also complicated the decision making process. The fact is that future decisions regarding nutrition labeling policies are going to be constrained and the feasibility of implementing any solution will surely impact the general public.

Alternative: New Policies for Nutrition Labeling

Given the consensus on nutrition labeling and rising fears about obesity's prevalence, numerous federal, state, and local policies have been proposed to help people with food selection and prevent obesity. On a federal level, there has been a flurry of rhetoric about the gravity of the problem with poor nutrition and a number of bills introduced on both sides of the aisle, although actual passage of these bills has not occurred (Kersh & Monroe, 2005). For example, the Personal Responsibility in Food Consumption Act (H.R. 339), which was introduced in July 2003 and would outlaw lawsuits against food and beverage companies, passed in the House but was not brought to a vote in the Senate. This so-called —Cheseburger Bill,” however, was enacted by at least fourteen states, with at least eighteen others considering similar legislation (Kersh & Monroe, 2005). Moreover, Congressional Democrats have proposed more progressive obesity legislation, although as of July 2007, nothing has passed both chambers of Congress.

1. The first alternative to the current nutrition labeling situation is a new policy to emphasize local control over federal or universal standards. A tenet of economic theory holds that the flow of information among market participants plays a critical role in the efficient operation of markets. In the US, most small towns make or produce their own food (e.g. Real California produces). Therefore, it makes sense to emphasize local control over federal standard. Moreover, this approach could be a good enough effort to reduce or prevent obesity as local standards tend to be less variable and in many cases stronger than universal standards. One advantage is that the local government can control the food market inefficiencies by taking over nutrition information initially coordinated the by the local manufacturers and making the information available to consumers.

This is clearly beneficial to consumers as they are now more informed as to the exact attributes of the product. Choices will be more closely in line with preferences, and uncertainty regarding the nature of product attributes is minimized during the choice process. Manufacturers that produce goods with desirable attributes also gain, as they are rewarded for marginal improvements in the quality of various attributes. Another advantage is that the local government has economies of scale in verifying, monitoring, and disseminating information locally better than the federal government. The drawback will be on foods coming in from out of state or town with a different labeling system. The new policy should also allow the local government to exert local control over the specific language and guidelines of the labeling. More importantly, this policy should address nutrition education, nutrition guidelines for all food available, compliance with meal nutritional regulation, and a plan for implementation of the policy.

2. The second alternative is to use a scientifically-based guidelines for healthy foods instead of marketing claims from the food industry or guidelines developed by the food industry and place simple labels on the front of the packages that denote the number of servings and calories per serving. The current system which place labels on the back of the package is very complicated. Studies from the U.S. and elsewhere have found the system to be confusing and that it does little to affect consumer decisions. Front of the package labeling, which has emerged in the past three to four years, promises to be more effective due to their ability to provide a simple, quick, easy to understand label format. An advantage of this system is that it will allow consumers to identify and steer clear of food products that cause

them problems quicker than the back of the package labeling. Moreover, critical nutrition information such as calories, saturated fat, trans fat, and sodium will be a lot more clear to consumers. Calories and serving sizes will be prominent on front-of-package labels. Easy-to-understand household measures should be used to help consumers visualize realistic serving sizes. On the down side, the system is based on criteria that serve industry purposes more than to promote public health; therefore, it might confuse the public. The fact is it is over-consumption, not under-consumption - that is the overwhelming problem affecting Americans' health. Therefore, hyping the positive might just be an entirely unnecessary and will only serve to obfuscate real health risks.

This analysis and some of the recommendations provided are based on the structure of the federal nutrition labeling system. Improving the nutrition of America is a key focus of government policy. The effort to improve the labeling system in America is not without controversy. The fact is that a lot has to be done with regard to nutrition labeling and obesity, and the first step in the right direction is to educate the public on nutrition labeling. This will ensure that people make healthy food choices when purchasing food. The basic principle is that when people know and understand nutrition information, people will make healthier choices; therefore, the quality of life improves. —The truth is the only people likely to take advantage of nutrition labels are those who are already health conscious” *FDA chief Lester Crawford told attendees of the World Obesity Congress and Expo in July, 2004.*

CHAPTER 4

Chapter 4

Summary, Conclusion, and General Recommendations

Summary

The food landscape for Americans has been deteriorating in recent years; and this has taken a heavy toll on Americans' health. On the one hand, nutrition labels have been called informative, straightforward, and crucial to consumers. On the other hand, some argue that nutrition labels are confusing, overly complex, and irrelevant. Nutrition labels are intended as a tool to help people make healthier choices at point of purchase. Over the years, consumer research suggests that current labels are not well understood, and rarely used by the general public. As a result, both federal and state legislators as well as regulators have struggled to update nutrition labeling standard for several years. The lack of knowledge on the use of nutrition information is viewed by many as a major contributor to obesity and has consequently been targeted as a means to help limit the rising prevalence of obesity in the US. Policy makers, the lay public, and experts across many fields agree that obesity is a major public health problem in the US. Future trends in the food industry are difficult at best attempt to predict; however, the challenges that lie ahead must be faced whole heartedly, head on, and from a holistic approach. Collaboration with the food industry to improve or change the current label standard will be vital factor for future success in preventing and reducing obesity. The findings of this policy analysis clearly define the necessity for a labeling policy change to fight the obesity problem. However, due to the fact that most nutrition labeling policies are moderately feasible with low or very little impact on obesity, it is hard to implement a new policy.

Although nutrition labeling alone is not expected to be sufficient in modifying behavior ultimately leading to improved health outcomes, it may be used by individuals and nutrition

professionals as a valuable and motivating tool in the efforts to combat obesity. Possible changes to the current label that have been suggested include bolding calorie information, reporting the total nutrient intake for foods likely to be consumed in a single sitting, and using more intuitive labeling that requires less cognitive processing such as a red, yellow, and green 'traffic light' signs on the front of the label. There are many reasons to why obesity is an epidemic in America; however, one of the main reasons is the lack of knowledge on the use of nutrition information.

Conclusions

In this era of increasing obesity and increasing threats of regulation of food labeling practices, many people are wondering how nutrition labels influence food consumption. The rate of obesity among the U.S. population has increased substantially (Center for Disease Control and Prevention, 2009) putting millions of Americans at heightened risk for cardiovascular disease, diabetes, cancer, arthritis and breathing complications (U.S. Department of Health and Human Services, 2007). Since the passage of the Nutrition Labeling and Education Act (NLEA) of 1990, which was intended to help consumers make healthier choices, the FDA has made it a priority to regulate food labeling. The NLEA of 1990 played a role in improving the overall dietary quality in some of the population which will sometimes use the nutrition label (Savage & Johnson, 2006). However, obesity has only increased indicating that something must not be working. Studies show that nutrition labels are not 'user friendly' and that most consumers do not understand nutrition information provided. When nutrition information are not 'user friendly' to the consumers, discrepancies occur between actual nutrition content of food and what the consumer believes to be the nutrition content of food. Giving consumers easy access to nutrition information allows consumers to make well informed dietary decisions; however, not educating

consumers on how to use the information does no good. Given the obesity epidemic, the trend towards eating away from home, and the consumers' tendency to underestimate levels of undesirable nutrients in foods, empowering consumers with the knowledge of nutrition composition may lead to more healthful food choices (Harnack & French, 2003). In turn, this may have a significant public health benefit, namely in reducing consumers' calorie and undesirable nutrient intake which could help reduce the rate of obesity in the US.

This policy analysis also concludes that since limited legislation exists on providing nutrition information, there is not an established best practice for determining to what extent nutrition information impact peoples purchasing decision. The FDA can only regulate certain foods, making the labeling system very complex.

On the other hand, what motivates people to purchase processed food or to eat out varies so much based on context: the purchasing environment, their socio-economic status, their emotional state, their hunger, and many more; therefore, a label is unlikely to interrupt the purchasing decision except in a small number of cases. Given the ubiquity of food, the effort retailers and restaurant chains put into subtly influencing the purchasing patterns and the hundreds of millions of dollars food companies invest in sophisticated marketing campaigns, this policy analysis also concludes that a label's impact is minimal. With that said, there is a role for some kind of a new system. A system that will be able to provide a simple, quick, easy to understand label format and one that will help combat obesity. The FDA will need to step up their game in order to see better results because the current labeling system is not working. If we truly want nutrition labels to combat obesity or any diet related disease, it will require government regulation and taxation, large scale public health, education, and media campaigns along with real efforts to increase access to and affordability of healthy foods in America.

Nutrition labels are the primary gateway for healthy selection, often providing consumers with the necessary information to enable them to make safe, healthy, and sustainable choices. Therefore, it should be consistent, coherent and transparent (have clarity of meaning) in order to enable a high degree of compliance and to optimize its outcomes. This policy analysis is important to provide policy alternatives from the current one.

Recommendations

There are multiple recommendations for the current crisis of the nutrition labeling system.

1. The first recommendation would be to provide real serving size. This is a strong recommendation because the current serving sizes provided are defined by the food manufacturers and this is very confusing to many consumers. For example, a 16 oz bag of pretzels contains 15 servings for the whole entire package. On the —Nutrition Facts”, the manufacturer shows a serving of 20 minis pretzels which is just 1 serving out of the 15 servings at 110 calories per serving, instead of showing the serving size for the whole 16 oz bag. In this case, consumers who have no knowledge of using nutrition information are more likely to mistaken the 110 calories per a serving of 20 minis pretzels (1 serving) for the whole entire package and eat the whole package. Therefore providing a serving size for the whole entire package will make it easier for consumers to understand nutrition labeling better.
2. The second recommendation is to improve the ingredient list. In this case, the ingredient list should include not just a list of each ingredient, but its ratio in the

product out of 100%. For example, the ingredients for frosted mini-wheats (bite size), which reads- whole grain wheat, sugar, high fructose corn syrup, and gelatin, would read- whole grain wheat [35%], sugar [30%], high fructose corn syrup [25%], and gelatin [10%]. This would give consumers a better idea of what they are really getting and by how much they are getting.

3. A third recommendation is for the FDA to require labels for unpackaged foods. Currently, nutrition labeling for unpackaged food is optional, unless a nutrition claim, such as being low in fat, is made in the labeling, advertising or presentation of the product. In this case, it is compulsory for producers to provide nutrition information. Although the ingredient list for most unpackaged foods would be short (e.g. beef ribs, pear, etc.), by using shelf-side nutrition information for produce and meats, consumers can educate themselves on which products provide which vitamins and minerals. Some supermarkets are providing this kind of information already, but there is no uniformity.
4. A fourth recommendation is to get rid of the qualified health claims and replace it with a “traffic light” system. Currently, the FDA allows manufacturers to plaster health claims on products based on sound scientific evidence. However, in the past few years, even limited research has become acceptable, as long as the claim is then qualified with tiny mouse print at the bottom of the package. Moreover, consumer research shows that the so-called qualified health claim such as those by the American Health Association only leads to over-eating. This does not serve consumers’ best interest and creates a false halo of health where it should not. On the other hand, the traffic light (red, yellow, and green) system will give

consumers information at a glance about the content of key nutrients relevant to health. The scheme uses red to indicate the least healthy foods and green for most healthy foods. This system is currently in use in the United Kingdom, and even though it is not a perfect system it has been proving to impact consumers purchasing decision.

5. The fifth recommendation is on specificity. In other words, the nutrition information provided needs to be specified not generalized. For example, natural flavor and artificial flavors – what do they really mean? Most consumers do not know what these words mean and why they are even labeled on food boxes or containers in the first place. These terms need to be broken down and further explain to consumers because it is very hard on consumers if manufacturers used terms like these without telling them what they mean.

This policy analysis concludes that the current nutrition labeling structure is an inefficient system that will not combat the obesity epidemic unless clearer policies are passed. The outcome is the increasing prevalence of obesity in the nation. The purpose of nutrition labeling is to provide consumers with the necessary information to enable them to make safe, healthy, and sustainable choices. Both the agency responsible (the FDA) for regulating the system and the food manufacturers have to work collaboratively and work together to solve the current labeling crisis that appears to have no end in sight. The inevitable outcome of a poorly designed and unmanaged system is failure. Therefore, it is the final recommendation of this policy analysis that the FDA begins working towards creating an improved and more efficient and effective nutritional labeling system - the kind of system that will create a competitive market environment in which dynamic, efficient, innovative operators can make full use of the power of

labeling to sell their products, and most of all, the kind of system that will combat obesity in the US. Nutrition labeling should be consistent, coherent, and transparent (have clarity of meaning) in order to enable a high degree of compliance and to optimize its outcomes.

End Discussion

Subsequently, since this policy analysis was conducted, the food industry has agreed to a new nutrition labeling system. The new labeling system, which is not regulated by the Food and Drug Administration (FDA) yet, recommends that select information from the nutrition facts panel on the back-of-pack to be featured on the front-of-pack for processed foods and beverages. This new system is designed to help consumers make sound nutritional choices at the supermarket and is also a response to a request First Lady Michelle Obama made last March in her effort to fight childhood obesity.

Currently, many experts in the health field believe that the food industry wants to come up with its own front-of-package labeling system before the FDA comes up with one for them. As one expert stated "you simply can't leave it to an industry [food] with so much money at stake to label its products in a way to benefit public health," *Kelly Brownell, director of the Rudd Center for Food Policy and Obesity at Yale University*. What is unique about this new system is that the food industry, who has been opposing nutrition labeling policies for more than a decade, came up with this idea. Therefore, the question arises once again: who is really benefiting from this new system? The simple answer is not very simple at all. There are alternatives and recommendations that have been provided in this policy analysis; however, these are merely potential solutions. Hopefully, through these recommendations, the answers will become more

simplified; the public are the ones suppose to be benefiting, not the food industry and or the policy makers.

References

- Armstrong, K. (2010). Stumped at the Supermarket: Making Sense of Nutrition Rating Systems. Retrieved on January 20, 2011 from http://www.reversechildhoodobesity.org/webfm_send/128
- Ashton, D. (2004). Food Advertising and Childhood Obesity. *Journal of the Royal Society of Medicine*. 97(2):51-52.
- Binkley J, Eales J, & Jekanowski M. (2000). The Relation between Dietary Change and Rising U.S. Obesity. *International Journal of Obesity*. 24(8): 1032–1039
- Blakely, Shirley R. (2005), Personal correspondence, Food and Drug Administration, Rockville, MD (June 2).
- Bowman, S. & Vinyard, B. (2002). Fast Food Consumption of U.S. Adults: Impact on Energy and Nutrient Intakes and Overweight Status.
- Centers for Disease Control and Prevention (2007). Physical Activity and Good Nutrition: Essential Elements to Prevent Chronic Diseases and Obesity. Retrieved on October 20, 2010 from <http://www.cdc.gov/nccdphp/publications/aag/dnpa.htm>
- Center for Disease Control and Prevention. (2009). U.S. Obesity Trends: Trends by State 1985-2008. Retrieved on January 27, 2011 from Center for Disease Control and Prevention Web Site: <http://www.cdc.gov/obesity/data/trends.html>.
- Choi, J., Laibson, D., Madrian, B., Metrick, A. (2003). Optimal Defaults. *American Economic Review Papers and Proceeding*. 93 (2):180-85.
- Choice magazine: 3rd Quarter (2010). Can Nutrition Labeling Affect Obesity? Retrieved on December 12, 2010 from http://www.choicesmagazine.org/magazine/pdf/article_140.pdf
- Cowburn, G. & Stockley, L. (2005). Consumer Understanding and Use of Nutrition Labeling: a Systematic Review. *Public Health Nutrition*. 8:21-28

EUROPA. (2010). Nutrition Labeling. Retrieved on January 27, 2011 from:

http://europa.eu/legislation_summaries/consumers/product_labelling_and_packaging/121092_en.htm

Europe Agri. (December 23, 2010). Health Council: Political Agreement on Nutrition Labeling

Garretson, A.J. & Burton, S. (2000). Effects of Nutrition Facts Panel Values, Nutrition

Claims, and Health Claims on Consumer Attitudes, Perceptions of Disease-Related Risks, and Trust,” *Journal of Public Policy & Marketing*, 19: 213–27.

Goel, G. (2009). Improving Children’s Dietary Habits: Holistic Health. *BellaOnline*. Retrieved

on August, 2010 from <http://www.bellaonline.com/articles/art38450.asp>

Harnack, L. & French, S. (2008). Effect of Point of Purchase Calorie Labeling on Restaurant and

Cafeteria Food Choices: A Review of the Literature. *International Journal of Behavioral Nutrition and Physical Activity*. 5: 51.

Hedley, A. A., Ogden, C.L., Johnson, L.C., Carroll, D. M., Curtin, R.M. & Flegal, K.M. (2004).

Prevalence of Overweight and Obesity Among U.S. Children, Adolescents, and Adults, 1999-2002,” *Journal of the American Medical Association*. 291 (23), 2847–50.

Hill, J.O. & Peters, J.C. (1998). Environmental Contributions to the Obesity Epidemic. *Science*.

280(5368):1371-4.

Flegal, K.M., Carroll, M.D., Ogden, C.L., Curtin, L.R. (2010). Prevalence and Trends in Obesity

Among US Adults, 1999-2008. *Journal of the American Medical Association*. 303(3), 235-241.

Kersh, R., & Monroe, J. (2002). How the Personal Becomes Political: Prohibitions, Public

Health, and Obesity. *Studies in American Political Development*. 16:162-175.

- (2005). Obesity, Courts, and the New Politics of Public Health. *Journal of Health, Politics, Policy, and Law*. 30:840-68.
- Kozup, C. J., Creyer, H.E., & Burton, S. (2003). Making Healthful Food Choices: The Influence of Health Claims and Nutrition Information on Consumers' Evaluations of Packaged Food Products and Restaurant Menu Items. *Journal of Marketing*. 67: 19–34.
- Kuo, T., Jarosz, C.J., Simon, P., & Fielding, J.E. (2009). Menu labeling as a Potential Strategy for Combating the Obesity Epidemic: A Health Impact Assessment. *American Journal of Public Health*. 99(9), 1680-1686.
- Levy, L., Patterson, R.E., Kristal, A.R., & Li, S.S. (2000). How Well do Consumers Understand Percentage Daily Value on Food Labels? *The American Journal of Public Health*. 14: 157–60.
- Lewis, J.E., Arheart, K.L., LeBlanc, W.G., Fleming, L.E., Lee, D.J., Davila, E.P., Cabán-Martinez, A.J., Dietz, N.A., McCollister, K.E., Bandiera, F.C., & Clark, J.D. (2009). Food Label Use and Awareness of Nutritional Information and Recommendations among Persons with Chronic Disease. *American Journal of Clinical Nutrition*. 90(5), 1351-57.
- Liu, D. (2011). Nutrition Facts Label Does Not Help Curb Obesity Epidemic - Retrieved on November, 2010 from http://www.foodconsumer.org/newsite/Politics/32/nutrition_facts_label_0115111228.htm
- 1
- Loos, R.J. & Bouchard, C. (2003). Obesity - Is it a Genetic Disorder? *Journal of Internal Medicine*. 254: 401-25.
- Moorman, C. (1990). The Effects of Stimulus and Consumer Characteristics on the Utilization of Nutrition Information. *Journal of Consumer Research*. 17 (3), 362–74.

- National Restaurant Association. (2006). *Restaurant Industry Fact Sheet*. Retrieved on October 20, 2010 from http://www.restaurant.org/research/ind_glance.cfm
- Nielsen, S.J., & Barry, M. P. (2003). Patterns and Trends in Food Portion Sizes: 1977–1998. *The Journal of the American Medical Association*. 289: 450–3.
- Ogden, C.L., Carroll, M.D., Curtin, L.R., Lamb, M.M., & Flegel, K.M. (2010). Prevalence of High Body Mass Index in US Children and Adolescents, 2007-2008. *Journal of the American Medical Association*. 303(3), 242-249.
- Ollberding, N.J. & Wolf, R. L. (2010). Food Label Use and its Relation to Dietary Intake among US Adults. *Journal of the American Dietetic Association*. 110 (8): 1233-1237.
- Reid, D.J. & Hendricks, S.M. (1994). Consumer Understanding and Use of Fat and Cholesterol Information on Food Labels. *Canadian Journal of Public Health*. 85: 334–7.
- Savage, L.C. & Johnson, R.K. (2006). Labeling in Restaurants: Will it Make a Difference? *British Nutrition Foundation Nutrition Bulletin*. 31:332-338.
- Smithers, R. (2010). MEPs Reject 'Traffic Light' Food Labeling System. Retrieved on January 27, 2011 from: <http://www.guardian.co.uk/lifeandstyle/2010/jun/16/meps-reject-traffic-light-food-labelling>
- Technomic, Inc. (2006). American Exchange Market Brief, July. *The Economy*. Retrieved on October 26, 2010 from http://www.technomic.com/operator/amexmarketbriefs/Marketbrief_7-06.pdf
- Thaler, R. H., & Sunstein, C. R. (2003). Libertarian Paternalism. *American Economic Review*. 93:175-79.
- US Department of Health and Human Services (2001). Overweight and Obesity Threaten US Health Gains. Retrieved on October 25, 2010 from <http://www.hhs.gov/news/press/>

- Wang, S. S., & Brownell, K. D. (2005). Public Policy and Obesity: The Need to Marry Science with Advocacy. *Psychiatric Clinics of North America*. 28:235-252
- Wansink, B. (2004). Environmental Factors that Increase the Food Intake and Consumption Volume of Unknowing Consumers. *Annual Review of Nutrition*. 24:455–79.
- Young, L. R. & Nestle, N. (2002). The Contribution of Expanding Food Portion Sizes to the US Obesity Epidemic. *The American Journal Public Health*. 92: 246–9.

APPENDICES

Appendix A

Institutional Review Board for Human Subjects Research**Anne Duran, Ph.D.**Department of Psychology
Scientific Concerns**Roseanna McCleary, Ph.D.**Masters of Social Work
Scientific Concerns**Thomas Blommers, Ph.D.**Department of Modern Languages
Nonscientific/Humanistic Concerns**Lily Alvarez, B.A.**Kern County Mental Health
Community Issues/Concerns**Grant Herndon**Schools Legal Service
Community Issues/Concerns**Tommy W. Tunson, J.D.**Criminal Justice
Community Issues/Concerns**Kathleen Gilchrist, Ph.D.**Department of Nursing
Scientific Concerns**Paul Newberry, Ph.D.**Department of Philosophy/
Religious Studies
Nonscientific/Humanistic Concerns
IRB/HSR Chair**Yeunjoo Lee, Ph.D.**Department of Special Education
Nonscientific/Humanistic Concerns**Steve Suter, Ph.D.**Department of Psychology
Research Ethics Review Coordinator
and IRB/HSR Secretary**Date:** 09 February 2011**To:** Diana Hackman, PPA Student**cc:** Paul Newberry, IRB Chair
Chandrasekhar Commuri, Public Policy & Administration Department**From:** Steve Suter, Research Ethics Review Coordinator**Subject: Protocol 11-21: Not Human Subjects Research**

Thank you for bringing your protocol, "**Nutrition Labeling: How Effective It Is in Reducing Obesity**" to the attention of the IRB/HSR. On the form "*Is My Project Human Subjects Research?*" you indicated the following:

I want to interview, survey, systematically observe, or collect other data from human subjects, for example, students in the educational setting. **NO**

I want to access data about specific persons that have already been collected by others [such as test scores or demographic information]. Those data can be linked to specific persons [regardless of whether I will link data and persons in my research or reveal anyone's identities]. **NO**

Given this, your proposed project will not constitute human subjects research. Therefore, it does not fall within the purview of the CSUB IRB/HSR. Good luck with your project.

If you have any questions, or there are any changes that might bring these activities within the purview of the IRB/HSR, please notify me immediately at 654-2373. Thank you.

Steve Suter, University Research Ethics Review Coordinator

Appendix B

Nutrition Labeling and Education Act of 1990

H.R.3562

Sponsor: Rep Waxman, Henry A. [CA-24] (introduced 10/31/1989)

Related Bills: H.R.3028, S.1425

Latest Major Action: 11/8/1990 Became Public Law No: 101-535.

Summary:

10/24/1990--Passed Senate amended.

Nutrition Labeling and Education Act of 1990 - Amends the Federal Food, Drug, and Cosmetic Act (FDCA) to deem a food misbranded unless its label bears nutrition information that provides:

1. the serving size or other common household unit of measure customarily used;
2. the number of servings or other units per container;
3. the number of calories per serving and derived from total fat and saturated fat;
4. the amount of total fat, saturated fat, cholesterol, sodium, total carbohydrates, complex carbohydrates, sugars, total protein, and dietary fiber per serving or other unit; and
5. subject to conditions, vitamins, minerals or other nutrients.

Authorizes the Secretary of Health and Human Services to:

1. require certain information to be highlighted;
2. require additional nutrients to be included in the labeling; or
3. exempt nutrients from the labeling requirement.

Allows nutrition information on food received in bulk containers at a retail establishment to be displayed at the location in the establishment at which the food is offered for sale.

Directs the Secretary to provide, for raw agricultural commodities and raw fish (defining "fish" to mean aquatic animal life), for furnishing the nutrition information by issuing voluntary nutrition guidelines. Applies the voluntary guidelines only to the 20 varieties most frequently consumed of each of vegetables, fruit, and raw fish. Allows the Secretary to apply the guidelines regionally.

Directs the Secretary, if the Secretary finds after 30 months that there is not substantial compliance with the voluntary guidelines, to issue regulations requiring the nutrition information to be provided for frequently consumed varieties of vegetables, fruit, and raw fish. Regulates the location, content, and manner of presentation of the information. Prohibits prosecution for minor violations if there has been substantial compliance.

Exempts from the labeling requirements food:

1. sold for immediate consumption in restaurants, or sold to restaurants for sale or use in restaurants;
2. processed and prepared primarily in a retail establishment and not for immediate consumption in the establishment;
3. including certain infant formulas;
4. which is a medical food;
5. which is customarily processed, labeled, or repacked in substantial quantities at establishments other than those where it was originally processed or packed;
6. in small packages containing no nutrition information;
7. which contains insignificant amounts of all the nutrients and does not make any claim with respect to the nutritional value of the food;
8. sold by certain small businesses, unless the label provides nutrition information or makes a nutrition claim; and
9. sold by a distributor to restaurants or certain other establishments. Allows the Secretary to require, if a food contains insignificant amounts of more than half the nutrients required to be included in the labeling, that the amounts of such nutrients be stated in a simplified form.

Requires certain vitamins and minerals to include nutrient information in their labeling as appropriate and as specified by the Secretary.

Directs the Secretary to issue regulations which:

1. require the nutrition information on labels to be conveyed in a manner which enables the public to readily observe and comprehend it and to understand its relative significance in the context of a total daily diet;
2. establish standards to define serving size or other unit of measure;
3. permit the inclusion of certain information beyond that which is required; and
4. permit single statements or ranges when there are minor variations in the nutritional value or the food is comprised of an assortment of similar foods which have variations in nutritional value.

Directs the Secretary to carry out consumer education regarding nutrition labeling.

Sets forth the circumstances under which nutrition and health claims may and may not be made for foods. Regulates the presentation of claims, including claims involving cholesterol, saturated fat, or fiber. Authorizes the Secretary to prohibit claims that are misleading in light of another nutrient in the food.

Exempts from certain regulations:

1. terms contained in the brand name of a food, if the name was in use on that food before October 25, 1989;
2. the term "diet," when used in the brand name of a soft drink and subject to other requirements;
3. a statement regarding the percentage of vitamins and minerals in the food in relation to recommended daily consumption; and
4. infant formulas subject to specified provisions of the FDCA and medical foods as defined in the Orphan Drug Act.

Allows proceedings for the enforcement, or to restrain violations, of the amendments made by this Act to be brought in the name of a State in which the food that is the subject of the proceedings is located (in addition to the existing authorization to bring such actions to enforce the FDCA in the name of the United States).

Declares that a food which makes a claim which characterizes the relationship of its constituents to a disease or a condition, or makes a claim with respect to a dietary supplement of vitamins, minerals, herbs, or similar nutritional substances, in accordance with the requirements of this Act, is not, solely because of such claim, a drug under specified provisions of FDCA.

Prohibits, subject to exception, a State or its subdivision from establishing or continuing in effect any requirement for a food that is the subject of a standard of identity, or any labeling requirement that is not identical to the requirements of this Act. Provides for exemption petitions by States if a State or local requirement would not cause any food to be in violation of Federal law, would not unduly burden interstate commerce, and is designed to address a particular need for nutrition information which is not met by the requirements of this Act.

Deems any food (currently, any food without a prescribed definition and standard of identity) misbranded unless it bears any common or usual name of the food and lists optional ingredients. Requires a beverage containing vegetable or fruit juice to bear a statement of the percentage of the vegetable or fruit juice in the food. Provides exceptions for spices, flavorings, and colors not required to be certified under specified provisions. Modifies provisions relating to the procedures for the establishment of regulations concerning definitions and standards of identity.

Source: The library of Congress. Retrieved on November 22, 2010 from <http://thomas.loc.gov/cgi-bin/bdquery/z?d101:HR03562:@@@D&summ2=3&%7CTOM:/bss/d101query.html%7C>