

Use of Sodium Information on the Nutrition Facts Label in New York City Adults with Hypertension



Tali Elfassy, MSPH; Stella Yi, PhD, MPH; Donna Eisenhower, PhD; Ashley Lederer, RD; Christine J. Curtis, MBA

ARTICLE INFORMATION

Article history:

Accepted 31 July 2014

Available online 25 October 2014

Keywords:

Sodium reduction

Sodium

24-hour urine collection

Nutrition Facts label

Hypertension

2212-2672/Copyright © 2015 by the Academy of Nutrition and Dietetics.

<http://dx.doi.org/10.1016/j.jand.2014.08.027>

ABSTRACT

The Nutrition Facts (NF) label was established to help individuals monitor their nutrient intake and select healthier foods. This tool is particularly useful for individuals for whom dietary improvements are recommended, such as those with hypertension. Study objectives were to examine the independent association between hypertension and frequency of use of the NF label for sodium information and determine whether frequent use in individuals with hypertension was associated with differences in mean sodium intake assessed through 24-hour urine samples. Data came from the New York City Community Health Survey Heart Follow-Up Study, a cross-sectional study conducted in 2010 in a representative sample of New York City adults ($n=1,656$). Participants were asked questions regarding frequency of checking the NF label and also had 24-hour urine samples collected to assess actual sodium intake. Results indicated that hypertension was associated with frequent use of the NF label for sodium information (adjusted odds ratio 1.71, 95% CI 1.07 to 2.73). In individuals with hypertension, sodium intake did not differ between frequent vs non-frequent use of the NF label for sodium information (3,084 mg/day vs 3,059 mg/day; $P=0.92$). Although individuals with hypertension compared to those with no hypertension had 71% higher odds of frequently using the NF label for sodium information, suggesting they may be interested in decreasing sodium intake, sodium intake did not differ by frequency of NF label use among those with hypertension. Future research should explore strategies to ensure that when nutrition information is used, it is translated into meaningful results, especially in individuals with health concerns such as hypertension.

J Acad Nutr Diet. 2015;115:278-283.

CARDIOVASCULAR DISEASE (CVD) CONDITIONS THAT can be modified by diet, such as hypertension, have reached epidemic levels¹ and contribute to CVD being the leading cause of death in the United States and New York City.^{2,3} Lifestyle modification, especially improving diet by consuming less sodium and increasing fruit and vegetable intake, has been shown to be effective in inhibiting the progression of hypertension and in preventing, or even reversing, CVD morbidity.⁴⁻⁶

To help consumers make better food choices, the US Congress passed the Nutrition Labeling and Education Act in 1990, which required all food manufacturers to display standardized nutrition labels.⁷ Nutrients that were associated with priority health concerns, such as sodium, were emphasized on the Nutrition Facts (NF) label.⁸ The expectation was that in making such information available, consumers would more readily be able to follow dietary recommendations.⁸

The demographic characteristics of individuals using the NF label are well documented, with higher use in women and those with higher education levels.⁹ Research in those with hypertension show that these individuals are more likely to

use the NF label for sodium information than those without hypertension.¹⁰⁻¹³ Similarly, individuals with hypertension are also more likely to report engaging in sodium reduction behaviors than individuals without hypertension.¹⁴ Less is known about whether using the NF label for information on sodium is associated with lower sodium intake in people with hypertension. A study using a 24-hour dietary recall to assess sodium intake found that, in subjects with hypertension, increased use of the NF label did not translate into healthier eating patterns.¹¹ Otherwise, the association between NF label use for sodium information and actual sodium intake in those with hypertension has not previously been characterized using the gold-standard of 24-hour urine collection.

Our objectives were to assess the independent association of hypertension with frequency of NF label use for sodium information, and determine whether there is an association between self-reported frequency of NF label use for sodium information and 24-hour urinary sodium excretion as a biomarker of dietary sodium intake for individuals with hypertension.

SUBJECTS AND METHODS

Study Design

Data for this analysis came from the New York City Community Health Survey (CHS) Heart Follow-Up Study (HFUS), a cross-sectional study conducted in 2010 to assess population-based sodium intake from a representative sample of New York City adults. Details of the study can be found in the comprehensive methodology report.¹⁵ Study participants were recruited from the CHS, an annual telephone survey conducted by the New York City Health Department that includes 8,000 to 10,000 adult New Yorkers.¹⁶ To obtain a representative sample of noninstitutionalized adult New Yorkers, the CHS uses a dual frame sample design consisting of random-digit-dial landline telephone exchanges and a second frame of cellular telephone exchanges that cover New York City. The CHS also incorporates a disproportionate stratified random sample design to allow for analysis at the city, borough, and neighborhood levels. Upon completion of the CHS interview, respondents were asked three questions to determine eligibility for HFUS participation: whether they were pregnant (if female), whether they were breastfeeding or lactating (if female), and whether they were currently receiving or had received kidney dialysis during the past 12 months. Any respondents who answered “yes” to any of the three questions were ineligible for HFUS participation. Eligible CHS survey respondents were given detailed explanations of the HFUS and invited to participate. Study participants answered survey questions, collected urine for a 24-hour period, and had a home visit scheduled. During the home visit, a medical technician was required to follow a welcome script.¹⁷ The protocol included checking the identification of the person to verify he or she was the intended study participant and asking for the informed consent form. The visit did not continue if consent forms were not signed. The technician then took anthropometric measurements (height and weight), and seated blood pressure according to a standardized study protocol,¹⁵ aliquotted the urine, and sent it directly to the research laboratory. Sodium measures were linked to participant survey responses. The Institutional Review Board of the NYC Health Department approved this study.

Participation

The 2010 CHS response rates were 17% and 28% for landline and cellular telephone exchanges, respectively. Cooperation rates among those who were reached were 77% among landline contacts and 94% among cellular contacts. Of the 2010 CHS participants screened for HFUS participation, 5,830 were found to be eligible. A total of 2,305 agreed to provide a 24-hour urine sample; of these 1,775 (or 30.4% of the 5,830 eligible CHS participants) provided a sample that could be analyzed by the laboratory. HFUS participants were statistically significantly more likely than CHS participants not recruited into HFUS to be Hispanic, to be younger than age 65 years, to have lower income, and to be obese. However, no significant differences in self-reported high blood pressure or general health status were observed.¹⁵ Incomplete urine samples were defined as those provided by participants who reported missing a collection and samples with a total urine volume <500 mL or urinary creatinine <6.05 mmol in men and <3.78 mmol in women (both being biologically

implausible).¹⁵ The final analytic sample size was 1,656 because 119 urine samples were deemed incomplete.

Measurement and Definitions

In addition to using validated questions, extensive cognitive testing was conducted to establish face validity of survey questions. Hypertension was defined as a “yes” answer to the validated¹⁸ question, “Have you ever been told by a doctor or other health professional that you have hypertension (also known as high blood pressure)?” Prior research has shown that consumers are unlikely to pay attention to nutrients on the NF label that they do not deem to be personally relevant.^{10,19} Therefore, although measured blood pressure was available in this dataset, the study definition for hypertension was derived via self-report of diagnosed hypertension to best capture individuals in whom sodium information would have perceived relevance (ie, those who aware of their hypertension status).

Based on questionnaires from the National Health and Nutrition Examination Survey,²⁰ NF label use was first assessed with the question, “The Nutrition Facts panel on a food package is the printed box that includes calories and nutrient information. It is typically on the back or side of the package. How often do you use the Nutrition Facts panel when deciding whether or not to buy a food product?” Response choices were: always, most of the time, sometimes, rarely, or never.

Only individuals who reported using the NF label (rarely or more often) were asked follow-up questions about how often they used serving size and sodium information on the NF label, also based on the National Health and Nutrition Examination Survey questionnaires.²⁰ The serving size information on the NF label is cited as the first place to start when using the NF label.²¹ As such, in our analysis it was used as a tool to help characterize how the NF label was used by the study population. NF label use for serving size and sodium information were assessed with the questions: “When you look at the Nutrition Facts panel to decide about a food product, how often do you look for information about... [serving size, sodium]?” (two separate questions). The answer choices for both questions were: always, most of the time, sometimes, rarely, or never. As in previous studies on NF label use,^{13,22} responses were dichotomized to capture frequent (always or most of the time) or nonfrequent use (sometimes, rarely, or never) for serving size and sodium.

All demographic characteristics were derived via self-report through the survey component. Obesity was defined by having a body mass index ≥ 30 calculated by measured height and weight. Twenty-four-hour urine samples were analyzed for sodium using the ion-selective electrode potentiometric method and the Jaffe kinetic colorimetric method for creatinine on a modular analyzer (DPP Modular Analyzer, Hoffman-La Roche). Lab values were normalized to a 24-hour period before analysis.

Statistical Methods

All analyses were performed using weights to account for survey design and nonresponse so that results were representative of New York City adults as a whole. The prevalence of hypertension was assessed and age-adjusted to the US 2000 standard population. Demographic characteristics

Download English Version:

<https://daneshyari.com/en/article/2653946>

Download Persian Version:

<https://daneshyari.com/article/2653946>

[Daneshyari.com](https://daneshyari.com)