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Primary Health Care Providers' Attitudes and Counseling Behaviors Related to Dietary Sodium Reduction

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High sodium intake is associated with increased blood pressure.¹ Average sodium intake among US adults far exceeds recommendations.² Primary care physicians and nurse practitioners are the first line of medical care and can influence opinions and behaviors of their patients.^{3,4} Although some information exists about perceived advice from health professionals related to sodium reduction,⁵ little is known about health care providers' own perceptions about sodium intake and patient counseling behaviors about reducing sodium intake. We used data from DocStyles, a Web-based survey of health care providers. Participants included health care providers who practiced in the United States; worked in an individual, group, or hospital setting; and had practiced medicine for a minimum of 3 years. In 2010, family/general practitioners (FGPs), internists, and nurse practitioners were asked questions on sodium. Response rates were 45.2% for FGPs and internists combined and 52.6% for nurse practitioners.

The sodium intake component of this survey consisted of 6 questions assessing health care providers' opinions and perceived counseling behaviors related to reducing dietary sodium intake. The survey also included questions about health care provider characteristics, including sociodemographic (age, sex, and race/ethnicity), medical practice (type of practitioner, practice setting, years of practice, whether they practice at a teaching hospital, and the financial situation of the majority of their patients), and health-related behavior (self-reported height and weight; the number of days per week they eat at least 5 cups of fruit or vegetables; smoke cigarettes, cigars, or pipes; and exercise or keep their heart rate up for at least 30 min/d).

Differences in response frequency were determined with 2 tests for categorical variables and Mann-Whitney test for Likert scales. All analyses were conducted using SPSS statistical software (SPSS Inc).

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Results

The 2010 Survey included 539 FGPs, 461 internists, and 254 nurse practitioners. Compared with internists and FGPs, a higher percentage of nurse practitioners were female, non-Hispanic white, and obese eTable; <http://www.archinternmed.com>).

The majority of primary health care providers agreed or strongly agreed with the statement “Most of my patients should reduce their sodium intake” (Table). More than 94% indicated “cut down salt” as advice they provided to adult patients about preventing and treating high blood pressure. When asked what specific advice they provided to patients on how to consume less salt, 87% of health care providers indicated “read nutrition labels for sodium” and “eat less processed foods”; 78% reported they provided examples of specific foods to avoid; 73% advised to cook with less sodium; and 69% advised to remove the salt shaker from the table. When asked which patients they advised to consume less salt, a majority indicated patients with prehypertension, hypertension, or chronic kidney disease but not African American patients or patients with diabetes or older than 40 years. The proportion who reported giving advice varied little by sociodemographic, health, behavior, and practice characteristics with 1 exception: compared with health care providers in all other race/ethnic groups (<40%), 60.5% of African American providers advised their African American patients to consume less salt ($P<.001$). Thirty-one percent of primary health care providers reported the biggest barrier to counseling their prehypertensive and hypertensive patients about sodium intake was that “patients are unlikely to comply”; 22% cited “lack of time”; and 11% reported “patients have other immediate health issues.”

Comment

The majority of primary health care providers agree that their patients should reduce sodium intake; report providing specific advice in line with recommended strategies; and counsel patients with prehypertension, hypertension, or chronic kidney disease to consume less salt. In contrast to 2010 dietary guidelines, a minority of health care providers report counseling patients with diabetes or older patients to consume less salt. Also, a minority of providers of race/ethnicity groups other than African American report counseling African American patients to consume less salt.

The most frequent types of advice provided to patients were in line with current recommended strategies to reduce sodium intake.⁷ Interestingly, the majority of health care providers also indicated they advise patients to remove the salt shaker or add less salt during cooking, despite current knowledge that for most people these behaviors are unlikely to result in major salt reduction.⁷

The results should be interpreted in the context of some potential selection and reporting biases. The survey was not a nationally representative sample of physicians or nurse practitioners, and health care providers who are more concerned about patient care may be more likely to respond and respondents may overstate their counseling behaviors. However, physicians were selected to be representative of the age, sex, and race/ethnicity of the American Medical Association master file.

Our results suggest that more effort is required to inform health care providers about the need for all patients to reduce sodium intake and their ability to make a difference in their patient's behavior.⁸ Specifically, the primary care physicians and nurse practitioners' knowledge, attitudes, and practices regarding dietary salt intake will play an important role in the effort to reduce sodium intake for Americans, especially for those who seek care for hypertension and other cardiovascular diseases.

References

1. Meneton P, Jeunemaitre X, de Wardener HE, MacGregor GA. Links between dietary salt intake, renal salt handling, blood pressure, and cardiovascular diseases. *Physiol Rev*. 2005; 85(2):679–715. [PubMed: 15788708]
2. United States Department of Agriculture. What we eat in America, NHANES 2007–2008, individuals 2 years and over (excluding breastfeeding children), day 1 dietary intake data, weighted. Revised August 2010. http://www.ars.usda.gov/SP2UserFiles/Place/12355000/pdf/0708/Table_3_NIN_INC_07.pdf. Accessed August 29, 2011
3. Viera AJ, Cohen LW, Mitchell CM, Sloane PD. High blood pressure knowledge among primary care patients with known hypertension: a North Carolina Family Medicine Research Network (NC-FM-RN) study. *J Am Board Fam Med*. 2008; 21(4):300–308. [PubMed: 18612056]
4. Kreuter MW, Chheda SG, Bull FC. How does physician advice influence patient behavior? evidence for a priming effect. *Arch Fam Med*. 2000; 9(5):426–433. [PubMed: 10810947]
5. Ayala C, Tong X, Valderrama AL, Ivy A, Keenan N. Actions taken to reduce sodium intake among adults with self-reported hypertension: HealthStyles survey, 2005 and 2008. *J Clin Hypertens (Greenwich)*. 2010; 12(10):793–799. [PubMed: 21029342]
6. US Department of Health and Human Services and US Department of Agriculture. Dietary Guidelines for Americans, 2010. 7th. Washington DC: US Government Printing Office; 2011.
7. IOM (Institute of Medicine). Strategies to Reduce Sodium Intake in the United States. Washington, DC: National Academies Press; 2010.
8. Havas S, Dickinson BD, Wilson M. The urgent need to reduce sodium consumption. *JAMA*. 2007; 298(12):1439–1441. [PubMed: 17895460]

Table
Physician attitudes and counseling related to dietary sodium reduction DocStyles 2010

| | Overall (n=1254) | Family (n=539) | Internist (n=461) | Nurse Practitioner (n=254) | P- value |
|---|------------------|----------------|-------------------|----------------------------|----------|
| Agreement with the statement "Most of my patients should reduce their sodium intake." (%) | | | | | |
| Strongly disagree | 0.3 | 0.4 | 0.2 | 0.4 | 0.423* |
| Disagree | 2.6 | 2.8 | 2.6 | 2.0 | |
| Neither agree nor disagree | 11.1 | 12.6 | 8.5 | 12.6 | |
| Agree | 55.4 | 54.9 | 54.9 | 57.5 | |
| Strongly agree | 30.6 | 29.3 | 33.8 | 27.6 | |
| "Cut down salt" be an advice for adult patients about preventing high blood pressure? (%) | 94.1 | 94.2 | 94.4 | 93.3 | 0.833 |
| "Cut down salt" be an advice for adult patients about treating high blood pressure? (%) | 96.1 | 96.8 | 95.2 | 96.1 | 0.42 |
| Which of the following types of patients do you advise to consume less salt? | | | | | |
| Pre-hypertensive patients | 65.7 | 69.2 | 65.1 | 59.4 | 0.024 |
| Hypertensive patients | 74.2 | 78.1 | 75.1 | 64.2 | <0.001 |
| Chronic kidney disease patients | 65.0 | 67.7 | 65.3 | 58.7 | 0.044 |
| Diabetic patients | 43.5 | 45.3 | 44.3 | 38.6 | 0.193 |
| Hispanic patients | 18.4 | 18.6 | 18.0 | 18.9 | 0.952 |
| African American patients | 33.9 | 34.5 | 33.6 | 33.1 | 0.913 |
| American Indian patients | 14.3 | 14.5 | 14.1 | 14.2 | 0.985 |
| Asian patients | 12.5 | 12.8 | 13.2 | 10.6 | 0.582 |
| Adults over age 40 | 19.9 | 19.1 | 19.5 | 22.4 | 0.528 |
| All adults | 22.6 | 18.9 | 21.9 | 31.5 | <0.001 |
| None of these | 0.6 | 0.2 | 0.7 | 1.6 | 0.072 |
| What specific advice do you provide patients about how to consume less salt? (%) | | | | | |
| Read nutrition labels for the sodium content | 86.8 | 85.5 | 86.6 | 89.8 | 0.256 |
| Give examples of specific foods to avoid | 77.9 | 74.0 | 79.4 | 83.5 | 0.007 |
| Remove the salt shaker from the table | 68.9 | 67.5 | 67.9 | 73.6 | 0.189 |
| Eat less processed food | 86.8 | 88.5 | 82.9 | 90.2 | 0.007 |

| | Overall (n=1254) | Family (n=539) | Internist (n=461) | Nurse Practitioner (n=254) | P- value |
|---|------------------|----------------|-------------------|----------------------------|----------|
| Cook with less sodium | 73.0 | 73.7 | 71.1 | 75.2 | 0.463 |
| Other advice | 7.9 | 8.9 | 5.9 | 9.4 | 0.120 |
| Do not provide specific advice | 1.5 | 1.5 | 1.3 | 2.0 | 0.781 |
| What is your biggest barrier to reduce dietary sodium intake with hypertensive or prehypertensive patients (%) | | | | | |
| No major barriers | 25.1 | 26.0 | 25.4 | 22.8 | 0.037 |
| Not enough scientific evidence | 2.2 | 1.7 | 2.2 | 3.5 | |
| Lack of resources for patient education | 5.8 | 3.7 | 6.5 | 9.1 | |
| Patients have other immediate health issues | 11.2 | 12.1 | 9.3 | 13.0 | |
| Patients are unlikely to comply | 30.9 | 28.9 | 34.1 | 29.5 | |
| Lack of reimbursement | 2.7 | 3.5 | 2.4 | 1.6 | |
| Lack of time | 21.9 | 24.1 | 20.2 | 20.5 | |

* p-value was obtained by Mann-Whitney U test