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Author Contributions: All authors had full access to all of the data in the study and take responsibility for the integrity of the data and the accuracy of the data analysis. *Study concept and design:* Koff and Vandivier. *Acquisition of data:* Koff, Freitag, and Vandivier. *Analysis and interpretation of data:* Linderman, Koff, Min, and Vandivier. *Drafting of the manuscript:* Linderman, Koff, and Vandivier. *Critical revision of the manuscript for important intellectual content:* Linderman, Koff, Freitag, Min, and Vandivier. *Statistical analysis:* Min and Vandivier. *Obtained funding:* Koff and Vandivier. *Administrative, technical, and material support:* Koff and Freitag. *Study supervision:* Vandivier.
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Additional Contributions: We thank health care providers throughout rural Colorado for their help identifying study subjects. Linda Gunnison, RRT, and Shannon James, BSN, assisted in recruiting and managing the patients in this study, and Debra Diaz helped create and manage the patient database.
Online-Only Material: eTables 1-4 are available at http://www.archinternmed.com.

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The Role of Gender in Examination and Counseling for Melanoma in Primary Care

Melanoma is increasing in incidence and is often not detected in time for curative excision, despite being clearly visible on the skin surface. More than 80% of the US population sees an outpatient medical provider annually[1]; however, primary care providers (PCPs) generally do not examine areas of skin where melanomas arise.[2] This study measures the role of gender in examination and counseling for melanoma in primary care.

Methods. Data for this analysis were collected at baseline for a randomized controlled trial to test the efficacy of a Web-based skin cancer early detection continuing education course (Basic Skin Cancer Triage curriculum) in a sample of primary care physicians.

We assessed PCP performance of skin examination, counseling for skin cancer issues during routine visits, skin cancer triage skills, attitudes and knowledge regarding skin cancer issues through physician surveys and skill tests, patient telephone interviews, and patient medical chart data collected by the research assistants. We recruited physician participants from 4 collaborating centers: Mid-Atlantic (center 1), Ohio (center 2), Kansas (center 3), and Southern California (center 4).

To study the binary-valued primary outcome of interest, we fit a generalized linear mixed-effects model. In this model, the main effects were physician gender and patient gender. The patient gender–physician gender interaction effect was also included in the model. To account for the correlation in the outcome among responses seen by physicians in the same clinic, we included a facility-specific random effect as an intercept in the logit link. Tests of statistical significance were conducted using the likelihood ratio test.

Results. Fifty-three primary care physicians completed the baseline assessment, of which 34 were men and 19 were women. Physician mean age was 48 years for men and 43 years for women.

A total of 1434 patients completed the baseline telephone survey (an average of 27 patients per physician). The patient population was predominantly white and non-Hispanic, with a slight predominance of women and a mean age of 56 years for both men and women. Only 29% of patients reported that their PCPs asked them to totally undress with or without removing undergarments.

Post–clinical examination telephone interviews demonstrated that female physicians performed skin examinations and asked patients if they usually examined their skin more frequently than male PCPs, both for male and female patients (**Table**). Female PCPs also were more active in discussing skin self-examination with their patients (Table).

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Table. Patient-Reported Physician Skin Cancer Prevention Activities

Physician Skin Cancer Prevention Activities Reported by Patient Postclinical Examination Telephone Interviews With Respect to Physician and Patient Gender	Reported Performance of Activities When Physician Was Female vs When Physician Was Male				Reported Performance of Activities When Patient Was Female vs When Patient Was Male			
	Among Female Patients (n=847)		Among Male Patients (n=587)		By Female PCPs (n=19)		By Male PCPs (n=34)	
	OR (95% CI)	*P* Value	OR (95% CI)	*P* Value	OR (95% CI)	*P* Value	OR (95% CI)	*P* Value
Partially/completely undressed	2.1 (0.8-5.4)	.14	3.1 (1.4-6.9)	.005	0.4 (0.3-0.6)	<.001	1.5 (0.8-3.0)	.27
Partial/full-body skin examination	2.6 (1.2-5.3)	.01	2.4 (1.3-4.3)	.004	0.8 (0.6-1.0)	.07	0.7 (0.4-1.2)	.23
Asked patients if they usually examine skin	1.9 (1.1-3.5)	.03	2.0 (1.3-3.3)	.004	0.9 (0.6-1.2)	.37	0.9 (0.6-1.5)	.73
Asked patients if they perform TSSE	1.7 (0.9-3.2)	.08	1.8 (1.1-2.8)	.01	0.9 (0.6-1.4)	.64	0.9 (0.5-1.6)	.83
Patients told to examine skin	2.3 (1.2-4.4)	.01	1.6 (1.0-2.8)	.08	0.8 (0.6-1.1)	.19	0.6 (0.3-0.9)	.02
Patients told how to TSSE	2.4 (1.1-5.2)	.02	2.1 (1.1-3.8)	.02	1.0 (0.6-1.6)	.94	1.2 (0.7-2.1)	.56

Abbreviations: OR, odds ratio; PCP, primary care physician; TSSE, thorough self-skin examination.

Physician surveys revealed that female physicians were significantly more likely than their male colleagues to report performing full-body skin examination ($P=.07$) and negotiating with patients to set a goal regarding skin self-examination ($P=.005$). Male PCPs were more likely than women to report confidence in performing full-body skin examination ($P=.04$) and in diagnosing skin cancer ($P=.03$), but they were more likely to report that skin cancer prevention counseling was not a priority ($P=.02$).

Patient medical chart data demonstrated that more female physicians charted performance of any skin examination ($P<.001$). A greater percentage of female health care providers documented coming to agreement with patients on skin self-examination ($P=.01$). Male PCPs were more likely to chart the date of their patients' last ($P<.001$) and next ($P=.008$) planned full-body skin examination.

Postclinical examination telephone interviews revealed that male patients were more likely to be asked to undress than female patients by female PCPs but not by male PCPs (Table). Male patients were told by male PCPs to examine their skin more frequently than female patients (Table). No other behaviors varied significantly by patient gender.

Comment. This study's limitations include the self-reported nature of the data, allowing for recall bias related to the respondent's characteristics. Its strengths include use of 4 geographically diverse centers with a large sample size of patients and physicians.

The significantly greater focus on skin cancer control activities by female physicians has not previously been documented to our knowledge. Female PCPs have been noted to be more likely than male physicians to report performing any gender-specific prevention such as breast examinations, Papanicolaou tests, and mammography orders for female patients; this likelihood was not found to be significant for gender-neutral services such as diet, exercise, and smoking control activities.[3]

Baseline data from our study elucidate significant gender-related tendencies with respect to skin cancer control activities. Our results indicate a need for increased skin cancer control activities with a focus on skin cancer screening and counseling by male physicians. Male physicians are providing less skin cancer detection and counseling care to their patients. Given these areas of gender-related strengths and weaknesses, gender-tailored education may be a useful adjunct. Improvements in detection and prevention are critical to battle the increasing incidence of melanoma.[4]

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COMMENTS AND OPINIONS

Reanalysis of NHANES III Data on Sodium Association With Mortality: Appropriate Adjustment for Potassium Not Performed

In their reanalysis of the Third National Health and Nutrition Examination Survey (NHANES III), Yang et al[1] reached an opposite conclusion from the first NHANES III analysis of almost the same data[2] and other recent population studies,[3,4] which show that low sodium intake is associated with increased mortality.

According to eTable 7 in their article, all-cause mortality decreases with increasing sodium intake: quintile (Q)1, 699; Q2, 509; Q3, 450; Q4, 372; and Q5, 240 (based on single 24-hour dietary recall). Remarkably, the adjustments performed by Yang et al[1] not only attenuated this trend but reversed it. This may be because Yang et al, in contrast to the majority of similar studies, did not adjust for potassium.

The creation of the sodium-potassium ratio gives the impression of adjusting sodium for potassium, but in fact allows potassium to drive the association rather than adjust it. This allows the authors to make a statement about sodium only based on the ratio, which they might not be able to make based on a sodium model adjusted for potassium. The ratio is in fact a multiplicative product interaction term of sodium with the inverse of potassium, and it is conventional in regression analyses to test such a term for significance in the presence of both main effect terms (ie, sodium and the inverse of potassium). If the product term does not add significantly or meaningfully to a model while simultaneously adjusting for both main effect terms, the general practice is not to use the more complicated product term when simpler main effects will do. We suggest the results of such a test be reported.

Furthermore, we suggest that eTable 7 be shown as quartiles consistent with the rest of the article instead of quintiles and, for comparison, that the numbers of all-cause deaths in the 4 quartiles of Table 2 (corrected for a second 24-hour dietary recall of sodium intake) be given.

The different interpretations of the NHANES III data show that the result of a multivariable regression analysis depends on which confounders are included in the model. Furthermore, they illustrate the lack of unambiguous evidence and robustness that characterizes the attempts to relate sodium intake to morbidity and mortality. Such data are not sufficient to recommend a general reduction in sodium intake.[5]

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Method of Estimating Sodium Intake and Its Possible Influence on NHANES III Outcome

One justification for the repeated analysis of the Third National Health and Nutrition Examination Survey (NHANES III)[1] is that the original analysis[2] only used 1-day dietary recall data to estimate sodium intake. According to the authors, a single dietary recall estimation of salt intake is insufficient compared with a method based on 2 estimations. However, Caggiula et al[3] found that the difference between a single and the average of 2 dietary recall estimations was minimal, but that the estimation by both recall methods was significantly smaller than the 24-hour urine sodium excretion (approximately 60 mEq/L [to convert to mmol/L, multiply by 1.0]). Consequently, the major difference is not between different recall methods but between dietary sodium recall and urine sodium excretion, the latter being considered the gold standard. However, to evaluate the quantitative significance of the method used by Yang et al[1] to correct sodium intake, which they based on only 7.2% of the participants, it would be important for the authors to provide the number and percentage of participants changing sodium intake quartile as a result of this correction.

The results of Yang et al[1] are not only in contrast to the previous interpretation of NHANES III but also to a number of other reports.[4] Finally, according to eTable 5, the findings are not general but limited to overweight persons, and thus, the data do not justify a general recommendation of sodium reduction.

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