

THE INFLUENCE OF PATIENT RACE AND SOCIOECONOMIC STATUS AND RESIDENT PHYSICIAN GENDER AND SPECIALTY ON PREVENTIVE SCREENING

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- *Objective:* Health care disparities remain largely unexplained and need to be better understood to be addressed. Little is known about whether resident physicians screen patients differently based on race or socioeconomic status (SES). The objective of this study was to assess whether residents' preventive screening practices are influenced by patient race or SES or by resident gender, specialty, minority status, or years of training.
- *Design:* Cross-sectional survey.
- *Methods:* Residents from 6 specialties at a large academic medical center participated in an online survey to gauge their knowledge, attitudes, and practices pertaining to primary care screening. The survey consisted of 1 of 4 clinical vignettes that varied by patient race and SES (African-American or Caucasian; high income or low income), followed by questions pertaining to 9 routine screening areas. Resident demographics and patient race and SES were compiled, and bivariate and multivariate analyses were used to assess associations between patient and/or resident characteristics and residents' reported importance of screening as well as intention to screen the vignette patient for the 9 specified health risks.
- *Results:* Of 309 residents sent the online survey, 167 responded (response rate, 54%). Four of the 9 screening areas (sexual behavior, physical activity, depression, diet) were reported by residents as both "very important" (versus "not very important") and "would definitely ask about during an office visit" (versus "would not definitely ask about"). In the adjusted odds models, residents showed no racial

preference in intention to screen for depression, diet, physical activity, or sexual behavior. Residents were less likely to report that they would screen the high-income patient for sexual behavior compared with the low-income patient (adjusted odds ratio [OR], 0.46 [95% confidence interval {CI}, 0.21–0.99]). Female residents were more likely than male residents to report that they would screen for sexual behavior (adjusted OR, 3.79 [95% CI, 1.69–8.52]). Emergency medicine residents were less likely to screen for sexual behavior (adjusted OR, 0.36 [95% CI, 0.14–0.95]) and for physical activity (adjusted OR, 0.27 [95% CI, 0.10–0.73]) than residents from all other specialties.

- *Conclusion:* Intention to screen for high-risk sexual behavior varied significantly by patient SES and by resident gender and specialty. Future research should examine how preventive screening is addressed in the curriculum of each residency program to ensure that patients will receive appropriate and consistent screening when evaluated by resident physicians.

A significant morbidity and mortality burden in the United States can be attributed to unhealthy behaviors that are largely preventable [1,2]. Topping the list of behavior-related causes of death and disability is tobacco use, with poor diet and physical inactivity rapidly rising in importance [1]. Alcohol consumption and high-risk sexual behaviors also contribute significantly to increased risk for poor health outcomes [1]. Given the scope of impact of unhealthy behaviors, it is critical for physicians to intervene with effective strategies to promote better health habits among their patients [3].

Ideally, the clinician-patient relationship provides the opportunity to promote improved health behaviors, and the responsibility for primary care screening is shared by many specialties [4]. Primary care physicians in particular should play an important role in periodic preventive health care screening and counseling, yet rates of preventive service delivery remain low [5,6]. The lost opportunity for preventive

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screening is especially regrettable, since Americans visit a physician's office 3 times a year on average, with more than half of these visits to a primary care physician [7].

In the past few decades, studies have shown that physicians' perceptions about racial or social stereotypes can lead them to screen and treat patients differently based on race or SES [8,9]. There is evidence to suggest that such provider perceptions may contribute to disparities in the health care received by patients [8–11]. Physician gender and specialty also have been linked with inconsistencies in delivery of preventive services. Several studies have shown that female physicians deliver more preventive services than their male counterparts [12–15]. Differences in screening for lifestyle and high-risk behavior have been found across specialties as well [16,17]. Some specialties, such as obstetrics and gynecology (OB/GYN), have begun to recognize the value of periodic health assessments and are placing more importance on primary and preventive care in addition to subspecialty care [18]. Similarly, there has been increased interest within the emergency medicine (EM) community in providing an opportunity to initiate preventive services for the millions of Americans who have no other source for these services [19].

Given expected increases in the prevalence of illness due to preventable behaviors [1], it is crucial for physicians entering practice to be prepared to intervene with appropriate preventive health services for all patients who need them. In response to concerns about disparities in delivery of preventive health services, medical schools have sought to increase training in cultural competence and causes of health care disparities [20]. However, we are unaware of any study to date that has assessed whether and how patient race or SES may influence resident physicians' attitudes about preventive screening and actual screening practices.

In an effort to shed light on these questions, we conducted an online survey of residents from 6 specialties at a large academic medical center to determine whether there are systematic differences in residents' attitudes toward and approach to preventive screening in key health areas based on (1) patient race and/or SES or (2) resident gender, specialty, minority status, or years of training. The survey addressed a range of primary care screening areas including domestic violence screening. This report presents results pertaining to screening for depression, physical activity, diet, and unsafe sexual practices—4 significant contributors to morbidity and mortality in

the United States [1]. Results pertaining to domestic violence screening are reported elsewhere [21].

Methods

Participants

Between September and December 2004, all current residents from 6 residency programs (internal medicine, OB/GYN, pediatrics, family medicine, EM, and combined medicine/pediatrics) affiliated with a large academic university hospital received an email from the study researchers soliciting participation in the online survey. The survey was electronically linked to the email. Before the soliciting email was sent, residents were categorized by specialty, divided into 4 groups by numeric order of employee number, and randomly assigned to receive a survey that included 1 of 4 clinical vignettes. Survey assignments were made by a study administrator who was blinded to the study objectives. Nonrespondents received 8 email reminders.

Survey Design

Survey questions were limited to 9 screening areas based on literature review and discussion with study team experts in primary care and domestic violence screening [22–27]. The survey consisted of a clinical vignette involving a female patient who varied by race (African-American or Caucasian) and occupation (lawyer or fast food worker), followed by 4 questions addressing a range of preventive screening areas, 15 questions specific to domestic violence screening (data previously reported [21]), and 4 questions gathering resident demographic information. A truncated version of the survey instrument is shown in the **Figure** (*see page 33*). Completion time was approximately 5 to 10 minutes. The survey was approved by the institutional review board. Resident consent was implied by returning the completed survey. Respondents were compensated with cafeteria gift certificates worth \$1.25 after the survey was returned.

Variables

Residents' screening practices. There were 3 outcome variables relevant to residents' preventive screening practices: (1) importance of screening, (2) intention to screen, and (3) knowledge about the prevalence of certain health risks by race and SES. To assess importance of screening the vignette patient for each of the routine screening areas, we asked: "How important are the following routine screens in this patient?" Respondents chose from 5 responses: very important, somewhat important, neutral, low importance, or not important. Because responses were positively skewed,

they were classified into “very important” if residents chose very important and “not very important” if they chose any of the other possible responses. To assess intention to screen the vignette patient, we asked: “Which of the following [routine screens] would you definitely ask about during this visit?” Respondents chose from 4 responses: would definitely check/ask at this visit, would check/ask if there was time, would defer to future visit, or would not check/ask. Because responses were positively skewed, they were classified as “would definitely ask” if respondents chose would definitely ask/check or “would not definitely ask” if they chose any of the remaining responses. To assess residents’ knowledge of the prevalence of sedentary lifestyle, depression, obesity, and high-fat diet by race and SES, we asked: “Are rates of [sedentary lifestyle, depression, obesity, and high-fat diet] higher among Caucasian women in the United States than among African-American women?” and “Are rates of [sedentary lifestyle, depression, obesity, and high-fat diet] higher among women of lower SES in the United States than among higher SES women?”

Independent variables. There were 2 groups of independent variables: (1) patient race and SES and (2) resident demographics. To assess whether residents preferentially screened patients based on race or SES, 4 different clinical vignettes were created. We constructed variables for patient race (African-American versus Caucasian) and SES (high versus low) as well as combination variables (high SES/African-American race, high SES/Caucasian race, low SES/African-American race, low SES/Caucasian race). To assess whether residents’ screening practices varied by resident demographic characteristics, we asked respondents to report their gender, minority status (nonminority versus minority), specialty, and whether they were in the first or second half of residency.

Statistical Analyses

We examined descriptive statistics of the residents’ demographic characteristics and knowledge about and approach to primary care screening. Bivariate regression analyses compared each outcome variable against each independent variable, using chi-square test, to assess for association. Multivariate logistic regression analyses assessed the association between patient and resident characteristics and resident preventive screening attitudes and practices. Resident minority status and years of training were not significant at the $P < 0.05$ level in any of the bivariate or multivariate analyses.

Table 1. Characteristics of Study Participants ($N = 167$)

Respondent Characteristics	N (%) [*]
Specialty	
Internal medicine	69 (41)
Obstetrics/gynecology	13 (8)
Pediatrics	21 (13)
Emergency medicine	26 (16)
Family medicine	15 (9)
Medicine/pediatrics	22 (13)
Unknown	1 (1)
Gender	
Female	99 (60)
Minority	
Yes [†]	34 (20)
Years in residency	
First half	87 (52)
Second half	80 (48)

^{*}Because of rounding, percentages may not equal 100.

[†]Response to the question: “Are you a member of an under-represented population (eg, African-American, Hispanic, Asian, Pacific Islander, Alaskan Native, Native American)?” Possible answers were: yes, no, unsure.

Results

Of 309 total residents, 167 (54%) responded to the survey. Seventy-four percent of family medicine, 57% of pediatrics, 59% of OB/GYN, 47% of medicine/pediatrics, 46% of EM, and 43% of internal medicine residents responded. Demographic characteristics of the respondents are shown in **Table 1**. Demographic information about nonrespondents was not made available for comparison.

Four of the 9 screening areas (sexual behavior, physical activity, depression, diet) were reported by residents as both “very important” (versus “not very important”) and “would definitely ask about during an office visit” (versus “would not definitely ask about”). **Table 2** shows results of the bivariate analysis of residents’ responses in these 4 screening areas by patient and resident characteristics. Results of the multivariate analysis of residents’ responses in the 4 screening areas are shown in **Table 3** (by patient characteristics) and **Table 4** (by resident characteristics).

Influence of Patient Race or SES on Screening

Bivariate analysis (**Table 2**) revealed that residents were less likely to consider sexual behavior screening to be important in the high SES patient compared

Table 2. Bivariate Analysis of Screening Areas Reported as “Very Important” and “Would Definitely Ask About” (N = 167)*

	Sexual Behavior				Physical Activity			
	Importance		Intention to Screen		Importance		Intention to Screen	
	%	OR (95% CI)	%	OR (95% CI)	%	OR (95% CI)	%	OR (95% CI)
Patient characteristics								
Race								
Caucasian	59	0.74 (0.40–1.40)	76	1.84 (0.94–3.61)	70	0.52 (0.25–1.06)	82	0.88 (0.39–1.98)
African-American	66	ref	63	ref	82	ref	83	ref
SES								
High	54	0.50 (0.26–0.94)	65	0.65 (0.33–1.26)	76	0.97 (0.48–1.97)	85	1.39 (0.61–3.17)
Low	71	ref	74	ref	76	ref	80	ref
Resident characteristics								
Gender								
Male	51	ref	50	ref	67	ref	76	ref
Female	70	2.24 (1.18–4.27)	83	4.76 (2.34–9.66)	81	1.92 (0.94–3.94)	88	2.27 (0.99–5.18)
Specialty								
Internal medicine	64	ref	66	ref	72	ref	82	ref
Obstetrics/ gynecology	92	7.0 (0.86–56.90)	100	†	92	4.18 (0.50–34.62)	92	2.67 (0.32–22.52)
Family medicine	60	0.87 (0.30–2.74)	80	2.04 (0.52–8.00)	73	1.05 (0.30–3.69)	93	2.89 (0.34–24.26)
Pediatrics	71	1.45 (0.50–4.23)	81	2.17 (0.65–7.21)	90	3.61 (0.77–17.00)	90	2.11 (0.43–10.31)
Emergency medicine	38	0.36 (0.14–0.92)	38	0.32 (0.13–0.82)	58	0.52 (0.20–1.33)	54	0.26 (0.10–0.70)
Medicine/ pediatrics	64	1.02 (0.37–2.76)	77	1.74 (0.41–4.92)	86	2.41 (0.64–9.08)	100	‡

CI = confidence interval; OR = odds ratio; ref = reference; SES = socioeconomic status.

*Resident minority status and years in residency were not significantly ($P < 0.05$) associated with importance of screening or intention to screen for any screening area in the bivariate analysis.

†All obstetrics/gynecology residents stated they would definitely screen for sexual activity.

‡All medicine/pediatrics residents stated they would definitely screen for physical activity.

with the low SES patient (54% versus 71%; odds ratio [OR], 0.50 [95% confidence interval [CI], 0.26–0.94]). Similarly, multivariate analysis (Table 3) showed that residents were less likely to report that sexual behavior screening was important in the high SES patient compared with the low SES patient (OR, 0.41 [95% CI, 0.21–0.83]), and they were less likely to screen the high SES patient for this health risk (OR, 0.46 [95% CI, 0.21–0.99]). In the multivariate models, residents were less likely to place importance on dietary screening in the Caucasian patient compared with the African-American patient (OR, 0.47 [95% CI, 0.22–0.98]). Residents also were less likely to place importance on physical activity screening for the Caucasian patient compared with the African-American patient (OR, 0.42 [95% CI, 0.19–0.91]).

Influence of Resident Gender and Specialty on Screening

Bivariate analysis (Table 2) revealed that female residents were more likely than male residents to place importance on screening for sexual behavior (70% versus 51%; OR, 2.24 [95% CI, 1.18–4.27]), dietary habits (60% versus 80%; OR, 2.63 [95% CI, 1.32–5.26]), and depression (69% versus 46%; OR, 2.62 [95% CI, 1.38–4.96]). Female residents also were more likely to screen for sexual behavior (83% versus 50%; OR, 4.76 [95% CI, 2.34–9.66]) and depression (71% versus 50%; OR, 2.50 [95% CI, 1.31–4.77]) compared with their male counterparts. Multivariate analysis (Table 4) showed that female residents were more likely than male residents to screen for sexual behavior (OR, 3.79 [95% CI, 1.69–8.52]).

Table 2. (continued)

Depression				Diet			
Importance		Intention to Screen		Importance		Intention to Screen	
%	OR (95% CI)	%	OR (95% CI)	%	OR (95% CI)	%	OR (95% CI)
61	1.12 (0.60–2.09)	67	1.43 (0.76–2.71)	65	0.56 (0.28–1.12)	71	0.55 (0.26–1.14)
58	ref	59	ref	77	ref	82	ref
60	1.04 (0.56–1.93)	63	1.03 (0.55–1.93)	70	0.90 (0.46–1.76)	76	0.91 (0.44–1.86)
59	ref	62	ref	72	ref	77	ref
46	ref	50	ref	60	ref	78	ref
69	2.62 (1.38–4.96)	71	2.50 (1.31–4.77)	80	2.63 (1.32–5.26)	76	0.87 (0.42–1.82)
52	ref	56	ref	63	ref	74	ref
85	1.83 (1.04–24.45)	69	1.78 (0.50–6.33)	85	3.20 (0.66–15.61)	69	0.79 (0.22–2.90)
67	1.83 (0.57–5.92)	60	1.18 (0.38–3.70)	80	2.32 (0.60–9.04)	80	1.31 (0.36–5.58)
81	3.90 (1.19–12.77)	90	7.50 (1.62–34.76)	81	2.47 (0.75–8.17)	81	1.50 (0.45–5.05)
35	0.50 (0.19–1.24)	42	0.58 (0.23–1.44)	60	0.87 (0.34–2.23)	65	0.67 (0.25–1.76)
73	2.44 (0.86–7.00)	82	3.55 (1.09–11.61)	86	3.68 (0.99–13.70)	98	7.06 (0.88–56.44)

Table 3. Odds of Reporting Screening Area as “Very Important” and “Would Definitely Ask About,” Adjusted for Patient Characteristics (N = 167)*

Patient Characteristic	Sexual Behavior		Physical Activity		Depression		Diet	
	Importance	Intention to Screen						
Race								
Caucasian	0.68 (0.34–1.35)	1.72 (0.80–3.71)	0.42 (0.19–0.91)	0.70 (0.28–1.73)	1.00 (0.50–1.97)	1.41 (0.71–2.80)	0.47 (0.22–0.98)	0.50 (0.23–1.07)
African-American	ref							
SES								
High	0.41 (0.21–0.83)	0.46 (0.21–0.99)	0.83 (0.39–1.75)	1.18 (0.48–2.90)	0.93 (0.48–1.82)	0.93 (0.47–1.81)	0.75 (0.37–1.55)	0.82 (0.39–1.74)
Low	ref							

NOTE: Parentheses denote 95% confidence intervals. ref = reference; SES = socioeconomic status.

*Controlled for resident characteristics including gender, specialty, minority status, and years in residency.

Table 4. Odds of Reporting Screening Area as “Very Important” and “Would Definitely Ask About,” Adjusted for Resident Characteristics (N = 167)

Resident Characteristic	Sexual Behavior		Physical Activity		Depression		Diet	
	Importance	Intention to Screen	Importance	Intention to Screen	Importance	Intention to Screen	Importance	Intention to Screen
Gender								
Male	ref	ref	ref	ref	ref	ref	ref	ref
Female	1.80 (0.87–3.75)	3.79 (1.69–8.52)	1.21 (0.55–2.67)	1.21 (0.46–3.18)	1.76 (0.86–3.58)	1.64 (0.80–3.35)	2.03 (0.94–4.40)	0.61 (0.27–1.39)
Specialty								
Internal medicine	ref	ref	ref	ref	ref	ref	ref	ref
OB/GYN	5.94 (0.72–49.17)	*	3.91 (0.46–33.0)	2.52 (0.29–21.68)	4.36 (0.88–21.47)	1.54 (0.42–5.61)	2.62 (0.52–13.13)	0.91 (0.24–3.41)
Family medicine	0.77 (0.24–2.48)	1.64 (0.40–6.79)	1.01 (0.28–3.59)	2.76 (0.32–23.45)	1.67 (0.51–5.46)	1.08 (0.34–3.41)	2.06 (0.52–8.15)	1.55 (0.39–6.23)
Pediatrics	1.05 (0.33–3.31)	1.00 (0.27–3.72)	3.26 (0.65–16.31)	1.90 (0.36–10.13)	2.90 (0.83–10.09)	5.75 (1.18–28.01)	1.67 (0.46–5.98)	1.91 (0.53–6.84)
Emergency medicine	0.30 (0.15–1.01)	0.36 (0.14–0.95)	0.53 (0.21–1.38)	0.27 (0.10–0.73)	0.53 (0.20–1.36)	0.62 (0.25–1.57)	0.97 (0.37–2.52)	0.61 (0.23–1.64)
Medicine/pediatrics	0.87 (0.31–2.43)	1.25 (0.39–4.08)	2.30 (0.60–8.79)	†	2.15 (0.74–6.26)	3.17 (0.95–10.51)	3.13 (0.83–11.88)	7.98 (0.99–64.72)

NOTE: Parentheses denote 95% confidence intervals.

*All obstetrics/gynecology (OB/GYN) residents stated they would definitely screen for sexual activity.

†All medicine/pediatrics residents stated they would definitely screen for physical activity.

Bivariate analysis (Table 2) revealed that internal medicine residents were less likely to place importance on depression screening (52%) than were OB/GYN residents (85%; OR, 1.83 [95% CI, 1.04–24.45]) or pediatrics residents (81%; OR, 3.90 [95% CI, 1.19–12.77]). Internal medicine residents also were less likely to screen for depression (56%) than were pediatrics residents (90%; OR, 7.50 [95% CI, 1.62–34.76]) or medicine/pediatrics residents (82%; OR, 3.55 [95% CI, 1.09–11.61]). EM residents were less likely than internal medicine residents to place importance on sexual behavior screening (38% versus 64%; OR, 0.36 [95% CI, 0.14–0.92]) and to screen for sexual behavior (38% versus 66%; OR, 0.32 [95% CI, 0.13–0.82]). EM residents were also less likely than internal medicine residents to screen for physical activity (54% versus 82%; OR, 0.26 [95% CI, 0.10–0.70]). Multivariate analysis (Table 4) showed that EM residents were less likely than residents from all other specialties to screen for sexual behavior (OR, 0.36 [95% CI, 0.14–0.95]) and for physical activity (OR, 0.27 [95% CI, 0.10–0.73]). Of note, all OB/GYN residents reported that they would definitely screen for sexual behavior.

Discussion

This report presents results of a survey undertaken to assess the impact of patient and resident characteristics on the self-reported preventive screening practices of residents from 6 primary care specialties at a large academic medical center. We found that screening for some routine areas appeared to be influenced by patient or resident characteristics. Residents were less likely to screen for sexual behavior in a high-income patient, inconsistent with current prevalence rates of high-risk sexual behavior and sexually transmitted infections (STIs). Racial disparities have been reported in the prevalence of STIs, but it is unclear whether SES alone is related to rates of high-risk sexual behaviors [28,29]. On the other hand, residents were also less likely to report that physical activity and dietary screening were important in a Caucasian woman compared with an African-American woman, which reflects current epidemiologic data reporting higher rates of high-fat diet and physical inactivity among African-American women [30–32].

In addition to patient characteristics, we found that resident gender and specialty were independently associated with importance placed on screening and

Dear Colleague,

As physicians, we are currently expected to screen for multiple behaviors and risk factors. In the face of the many demands on our time as clinicians, we are interested in your approach to screening. You are being asked to participate in a University of Michigan research survey entitled *Resident Attitudes in Primary Care Screening*. The study goal is to evaluate house officer attitudes and knowledge concerning screening patients in the primary care setting. Please help us further understand this issue by completing this short survey.

House officers in pediatrics, internal medicine, EM, OB/GYN, and medicine/pediatrics are being recruited for the study. The only risk of participating in this study will be the inconvenience to you. The survey should take less than 5 minutes to fill it out. Your participation is completely voluntary, and you may decline to answer any question for any reason. No faculty member or supervisor will be able to tell if you have participated or not in this study. Your identifying information, including your unqiqname, will be removed from your survey answers once all the surveys are submitted. The investigators will only have access to survey answers without any identifying information. All of your responses will be kept confidential. Any results we report from this survey will only be presented in aggregate.

If you have any questions or concerns regarding this study, please feel free to email the University of Michigan Institutional Review Board at irbmed@umich.edu or call them at 734-763-4768.

Once you have responded to the survey, we will give you a gift certificate towards a purchase at Starbucks at the University Hospital. Thank you in advance.

Resident Practices in Primary Care Screening

Case Scenario. Please respond to the questions after reading the case.

Mrs. J is a 32-year-old [African-American/Caucasian] married woman who [works as a cashier at a fast food restaurant/is a law professor at the university]. She is coming in today for her annual check-up. She brings up no concerns today except for a mild headache and stomach "pains" that she's had for several years. She denies any change in her symptoms. She denies any fevers, chills, photophobia, neck rigidity, nausea, vomiting, melena, BRBPR, or change in her bowel habits. She's had a good appetite. Her physical examination is unremarkable. Pap smear was done. She was also given a refill on her birth control pills.

1. How important are the following routine screens in this patient?

	Very important	Somewhat important	Neutral	Low importance	Not important
Safety belt usage					
Firearms					
Dental health					
Sexual behavior					
Physical activity					
Domestic violence					
Diet					
Obesity					
Depression					

2. Of the list below, which of the following would you definitely ask about during this visit?

	Definitely check/ask at this visit	Would check/ask if there was time	Would defer to a future visit	Would not check/ask
Safety belt usage				
Firearms				
Dental health				
Sexual behavior				
Physical activity				
Domestic violence				
Diet				
Obesity				
Depression				

3. Please mark true or false about whether rates of the following are higher among Caucasian women in the United States than among African-American women.

	True	False
Sedentary lifestyle		
Obesity		
Domestic violence		
Depression		
High-fat diet		

4. Please mark true or false about whether rates of the following are higher among women of lower socioeconomic status (SES) in the United States than among higher SES women.

	True	False
Sedentary lifestyle		
Obesity		
Domestic violence		
Depression		
High-fat diet		

Figure. Truncated version of survey to assess residents' primary care screening practices. Shown are the soliciting email, clinical vignette, and 4 questions addressing a range of screening areas appropriate to the vignette patient. Not shown are 15 questions specific to domestic violence screening and 4 questions pertaining to resident background. (Adapted from Baig A, Shadigian E, Heisler M. Hidden from plain sight: residents' domestic violence screening attitudes and reported practices. *J Gen Intern Med* 2006;21:949-54, with permission of Springer Science and Business Media.)

on intention to screen in certain areas. Male residents were less likely than female residents to screen for high-risk sexual behavior, suggesting that male residents may be missing crucial opportunities to identify STI risk among their patients. EM residents were less likely to report screening for unsafe sexual practices and physical inactivity and, thus, may be missing opportunities to identify unhealthy behaviors and to educate patients who may have minimal contact with outpatient primary care services.

Although it is reassuring that resident physicians in our study placed importance on certain areas of screening based on current epidemiologic data, our findings relevant to screening for high-risk sexual activity add to previous literature on physician biases in diagnosis and treatment by patient race and/or SES [10,11]. Considering the significant problem of health care disparities in the United States, addressing provider biases and differential screening practices is key in diminishing these disparities. Our study demonstrates that even at the level of graduate medical training, residents differentially screen patients based on patient characteristics that do not reflect current prevalence rates of disease and unhealthy behaviors. Clearly, health care disparities exist due to many factors. However, by improving clinical training in this area and addressing trainee biases in screening practices, we may be able to decrease the degree to which physician behavior and perception contribute to disparities in health care.

Limitations

Our study findings should be interpreted in consideration of several limitations. Although our survey included residents from a range of specialties, our total sample size was small, limiting our power to detect differences that may have been significant. Our sample also came from a single, tertiary care, academic institution and may not be generalizable to other institutions. The hypothetical cases in the survey may not be representative of actual clinical practice. All the survey responses were self-report and may not correctly represent true behaviors. Finally, our response rate of 54% is comparable to other physician surveys, but residents interested in primary care screening may have been more likely to participate [33].

Conclusion

Physicians have many opportunities to intervene to address unhealthy behaviors among their patients, yet our study suggests that provider bias regarding

who is screened and counseled may be a factor even among clinical trainees. With rising morbidity and mortality due to modifiable behaviors, training the new generation of physicians to detect and counsel for poor health behaviors is becoming increasingly important. Our findings emphasize the importance of ensuring that residents receive effective training in appropriate preventive screening practices and are aware of potential biases—both patient and provider—that may contribute to disparities in the health care received by patients.

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Acknowledgments: The authors thank Mary Bernier at the University of Michigan for managing the online survey and the internal medicine residency program at the University of Michigan for encouragement and support of this project.

Funding: This work was supported by the Department of Internal Medicine residency program at the University of Michigan Health System, the Robert Wood Johnson Clinical Scholars Program, and the Department of Veterans Affairs (VA) Health Services Research & Development Service.

Disclosures: Dr. Heisler is a VA Research Career Development awardee.

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How to cite this article:

Baig AA, Heisler M. The influence of patient race and socioeconomic status and resident physician gender and specialty on preventive screening. *Semin Med Pract* 2008;11:27–35. Available at www.turner-white.com.

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