BRIEF REPORT: Housestaff Adherence to Cervical Cancer Screening Recommendations

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BACKGROUND: Postgraduate training involves intensive clinical education characterized by long work hours with minimal flexibility. Time demands may be a barrier to obtaining preventive care for housestaff during postgraduate training.

OBJECTIVE: Assess adherence to United States Preventive Services Task Force (USPSTF) cervical cancer screening recommendations.

DESIGN: Cross-sectional survey.

PARTICIPANTS: Convenience sample of female housestaff at 1 university hospital.

MEASUREMENTS: Primary outcomes included (1) adherence to USPSTF recommendations, (2) perception of adherence to recommendations, and (3) barriers to obtaining preventive care.

RESULTS: Surveys were completed by 204 housestaff. Overall, 81% of housestaff were adherent to USPSTF screening recommendations. Housestaff requiring screening in the past year were less likely to be adherent when compared with housestaff requiring screening in the past 3 years. Overall, 84% accurately perceived their screening behavior as adherent or nonadherent ($\kappa = 0.58$). Of the 43% who identified a barrier to obtaining preventive care, not having time to schedule or keep appointments was reported most frequently ($n = 72$).

CONCLUSIONS: Housestaff accurately perceived their need for cervical cancer screening and were generally adherent to USPSTF recommendations, even though lack of time during postgraduate training was frequently reported as a barrier to obtaining preventive care. However, we found lower adherence among a small subgroup of housestaff at a slightly greater risk for cervical disease and most likely to benefit from screening.

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During postgraduate training, housestaff undergo intensive clinical education and preparation characterized by long work hours with minimal flexibility and reduced sleep. Postgraduate training has been associated with increased hazards and harm related to long work hours and reduced sleep such as motor vehicle accidents,[1–3] depression and other mood disorders,[4,5] and, among pregnant housestaff, obstetric complications, including premature labor and preterm delivery.[6,7] Work hour limitations passed recently by the Accreditation Council for Graduate Medical Education (ACGME)[8] are intended to improve housestaff sleep behaviors. However, even the reduced work limit of 80 hours/week remains substantial and may be less flexible.[9] The time demands of postgraduate training may be a barrier to obtaining preventive care, potentially putting housestaff at risk for adverse health outcomes such as cervical disease.[10]

Little is known about the association of postgraduate training and preventive care. A national survey limited to obstetrics-gynecology residents found that 33% reported personal nonadherence to cervical cancer guidelines.[11] Our objective was to examine female housestaff use of preventive care and barriers to obtaining care by surveying adherence to the United States Preventive Services Task Force (USPSTF) cervical cancer screening recommendations.

METHODS

We administered a cross-sectional survey to female housestaff at Montefiore Medical Center, the University Hospital of the Albert Einstein College of Medicine, Bronx, NY. Institutional review board approval was obtained prior to the study.

Two investigators (J.S.R., B.A.F.) approached housestaff between May 2003 and January 2004, requesting completion of a short, anonymous survey examining "health behaviors." Most housestaff were approached while alone in the hospital's medical library or cafeteria. After consenting to participate, housestaff were given an unmarked survey and envelope. The investigator stepped away for complete privacy and retrieved the closed envelope after completion.

The survey assessed sociodemographic characteristics, specialty, and postgraduate year. Our primary outcomes, which included (1) adherence to USPSTF recommendations for cervical cancer screening, (2) perception of personal adherence to recommendations, and (3) barriers to obtaining preventive care, were assessed using multiple-choice questions.

Giving cervical cancer screening an "A" recommendation, the USPSTF used indirect evidence to determine that initiating screening in women with a cervix within 3 years of sexual activity (or age 21) and screening at least every 3 years captures most of the benefit.[12] However, it qualifies that women who have not received appropriate follow-up after an abnormal Pap smear are most at risk. For these reasons, when determining adherence, housestaff who were sexually active but had never had a Pap smear and housestaff with a history of an abnormal Pap smear were categorized as requiring screening in the past year. All others were categorized as requiring screening in the past 3 years.

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Data analysis was performed using SPSS version 11.5 (SPSS Inc., Chicago, IL). Associations between adherence to USPSTF recommendations and screening requirements and perceptions were assessed using Pearson's χ^2. Kappa was used to test for agreement beyond chance between housestaff adherence and perception of adherence to recommendations. All statistical tests were 2-tailed.

RESULTS

Housestaff Characteristics

Surveys were completed by 204 (52%) of 393 female housestaff, representing a convenience sample. Among housestaff approached to participate, the response rate was >99%, with 1 housestaff citing urgent patient care responsibility and 1 citing no interest.

Housestaff averaged 30 years of age, and 53% identified themselves as white (Table 1). All housestaff were eligible for screening; none reported a hysterectomy for benign disease. Eighteen percent were categorized as requiring screening in the past year. Fifty-four percent reported having had a Pap smear in the past year, and 85% in the past 3 years.

Housestaff Adherence

Overall, 81% of housestaff were adherent to USPSTF screening recommendations (Table 2). Housestaff who required screening in the past year were significantly less likely to be adherent when compared with housestaff who required screening in the past 3 years (54% vs 87%; odds ratio [OR]=0.17, 95% confidence interval [CI], 0.08 to 0.37, $P<.01$).

Housestaff Perception of Adherence

Twenty-nine percent of housestaff perceived personal preventive care as nonadherent to recommendations. Among adherent housestaff, 84% accurately perceived adherence, whereas 86% of the nonadherent housestaff accurately perceived nonadherence, a nonsignificant difference in accuracy. Overall, 84% of the participants accurately perceived adherence or nonadherence ($\kappa=0.58$). There was no difference in accuracy of perceived adherence between housestaff requiring screening in the past year or 3 years.

Table 1. Housestaff Characteristics ($n=204$)

Mean age (y) (range)	30.1 (25 to 45)
Race/ethnicity (%)	
White	53
Asian	24
African American	8
East Indian, Hispanic/Latina, other	15
Specialty (%)	
Internal medicine	30
Pediatrics	23
Family medicine	7
Other†	39
Specialty: primary care‡ (%)	51
Postgraduate year (%)	
One	22
Two	34
Three	27
Four or greater	6
Fellow	12

*Percentages may not sum to 100 because of rounding.
†Respondents included 6 to 12 housestaff from each of Emergency Medicine, General Surgery or Surgical Subspecialty, Obstetrics/Gynecology, Psychiatry, Anesthesiology, Neurology, Pathology, and Radiology.
‡Housestaff were categorized as training in primary care if they were training in either internal medicine, pediatrics, or family medicine, but not in fellowship.

Table 2. Housestaff Adherence to USPSTF Cervical Cancer Screening Guidelines

	N	% adherent
All respondents	204	81
Required Pap smear within		
Past 1 y	37	54*
Past 3 y	167	87

*Chi-square $P<.01$ comparing housestaff requiring Pap smear within 1 vs 3 years.
USPSTF, United States Preventive Services Task Force.

Barriers to Obtaining Preventive Care

Forty-three percent of housestaff reported at least 1 barrier to obtaining care. The most commonly reported barrier was not having time to schedule or keep appointments ($n=72$). Other reported barriers included not having a primary care physician or obstetrician-gynecologist ($n=22$), not feeling comfortable having a Pap smear at workplace institution ($n=17$), and not being sexually active ($n=7$). Nonadherent housestaff were significantly more likely to report a barrier to obtaining preventive health care when compared with adherent housestaff (86% vs 33%; OR=13.16, 95% CI, 4.85 to 35.71, $P<.01$).

CONCLUSIONS

Postgraduate training was associated with generally good adherence to USPSTF recommendations for cervical cancer screening, as we found that 81% of housestaff were adherent. This rate is comparable with, although slightly less than, the national rates of women with similar sociodemographic characteristics: 88% of college-educated, 85% of high-income, and 83% of privately insured women report a Pap smear within the past 3 years.[13] However, there is room for improvement, as housestaff should meet the 90% target screening rate of Healthy People 2010.[14] In fact, as the vast majority of housestaff are well educated, earn above-average incomes, have excellent access to health care, and are aware of the devastating consequences of cervical cancer and the relative ease of prevention, housestaff cervical cancer screening adherence might be expected to exceed the general population's.

In addition, we found a small group of women with lower adherence; housestaff requiring screening in the past year. Despite accurate perceptions of their need for preventive care, 54% were adherent to screening recommendations. While these findings should be interpreted cautiously, especially given the small sample size, they deserve attention as these are the women most at risk for cervical disease and most likely to benefit from screening.[12,15] In addition, if overall housestaff adherence is to approach 90%, this group of women should be targeted for improvement, as 87% of the remaining housestaff were adherent.

The most frequently reported barrier to obtaining preventive care was the lack of time to schedule or keep appointments. As we found generally good adherence among housestaff, cervical cancer screening may require such infrequent care to be unaffected by the long work hours and minimal flexibility of postgraduate training. More research is needed to study chronic and acute health care use during postgraduate training. Not having a primary care physician or obstetrician-gynecologist was the second most frequently reported barrier, reinforcing the importance of having a regular source of care in obtaining appropriate preventive care.[16]

We interpreted USPSTF recommendations by categorizing housestaff as requiring screening in the past year or 3 years. Had we more simply assessed all housestaff as requiring triennial screening, 85% of housestaff would have been considered adherent. Prior research[11] in this area assessed adherence using the American College of Obstetricians and Gynecologists guidelines.[15] Although similar to USPSTF recommendations, these guidelines do not lengthen the screening interval to 3 years until age 30 and identify additional risk factors that justify annual screening. Had we used these guidelines, 62% of housestaff would have been considered adherent.

There are limitations to our study. Our survey was cross-sectional and so provides no evidence for causality. In addition, busy housestaff may forget how recently they obtained care, underestimating adherence rates. However, there are several reasons why our rates may be overestimated. First, our study examined a convenience sample. Perhaps surveyed housestaff were more likely to have time to schedule and attend screening appointments. Second, inflated self-reported adherence rates for cervical cancer screening have been described repeatedly across populations.[17–19] Third, physician surveys may be susceptible to social acceptability bias, whereby adherence is systematically over-reported because of perceived expectations. Finally, we did not assess pregnancy status (anecdotally, 10 to 20 surveyed housestaff were currently or recently pregnant). Pregnancy inflates estimates of adherence as having had a Pap smear better reflects standard prenatal and postpartum care than preventive care.

Despite these limitations, our study is a valuable contribution to the growing literature examining preventive care use during postgraduate training. First, this is one of the only studies to assess preventive care during postgraduate training, and the first that considers all training specialties. In addition, although we examined housestaff at only 1 hospital, because Montefiore is located in New York State, work hour limitations similar to the 2003 ACGME regulations[8] have been in effect since 1989.[20] Therefore, our study population is already training and obtaining preventive health care in an environment that may approximate postgraduate training post-ACGME regulations. Our study demonstrates that lack of time is frequently reported as a barrier to obtaining preventive care during postgraduate training. However, despite this reported barrier, housestaff were generally adherent to USPSTF recommendations for cervical cancer screening.

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