Gender Disparity in Women’s Health Training at a Family Medicine Residency Program

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Background and Objectives: Women’s health services are an important part of the practice of family medicine. Anecdotally, family medicine residents’ training experience in certain aspects of women’s health differs based on the trainees’ gender. Methods: We conducted 5-year retrospective evaluation of acute and preventive women’s health encounters at one site. Total number of visits, type of visits, and visits by resident year were compared between male and female residents. We also compared mean women’s health in-service examination training scores, by year of training, for male and female residents. Results: Male residents cared for a total 13% of the 3,415 women’s health visits while female residents performed 59.5% of the visits; the remainder of visits were to faculty and other practitioners. Female resident physicians cared for 86% of all preventive and 91% of all acute women’s health visits performed by residents. Female residents also had a significantly higher mean number of women’s health visits per resident than did male residents (63 versus 20). Female residents’ mean score of 56.8 (95% CI=51.1–62.0) on the women’s health section of the in-service exam was significantly higher than male residents’ mean score of 41.7 (95% CI=34.9–48.5). Conclusions: This study demonstrates discrepancies by gender in the exposure of family medicine residents to women’s health cases and their knowledge about women’s health.

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The Accreditation Council for Graduate Medical Education (ACGME) requires that the exposure of residents to women’s health issues should be attained with a minimum of 140 hours of supervised experience. These experiences must focus on the care of the female reproductive system in non-pregnant women, which is in addition to the routine care of continuity patients in the family medicine clinic and any women’s health experience gained during family medicine hospital rotations or during emergency medicine rotations.1

Published research offers contradictory findings related to female patients preferring same-gender providers for women’s health.3-6 Some studies suggest that women who see a female physician report significantly more screening and counseling than women seeing a male physician.4 Other studies demonstrate that the majority of women are satisfied, in the case of obstetrician-gynecologists, with either gender for the provision of their care.6

In our review of the literature, we found studies that explored, through surveys, hypothetical cases, and questionnaires, the preparedness of primary care residents for the care and management of female-specific health issues.7-9 We also found an important national report on health care disparities that demonstrated deficiencies in the primary care of women.10 But, we found no studies exploring gender discrepancies in the...
experience of medical trainees at either the medical school or residency level.

We hypothesized that in comparison to female family medicine residents, male residents might have a reduced exposure to women’s health experiences during their longitudinal curricular training. We also hypothesized that male residents would be less comfortable providing women’s health care and thus demonstrate lower scores on the women’s health portion of the family medicine in-service exam. To test these hypotheses, we conducted a retrospective review of clinical activity in our family medicine residency clinic to determine the exposure of male and female residents to women’s health problems, and we compared the scores of male and female residents on the in-service examination.

Methods

Study Site

Franklin Square Hospital Center’s Family Medicine Residency Program (FSHC-FM) is located in Eastern Baltimore County, Maryland. All residents in the program rotate through one 4-week rotation in gynecology and provide care longitudinally in their continuity clinic. Over 3 years, all residents will have at least 1,650 patient visits in the continuity clinic. Of these visits, some fraction will be either acute or preventive women’s health care visits.

Analysis of Data on Patient Visits

We performed a retrospective analysis using data from the electronic billing program of the residency-staffed FSHC-FM’s Family Health Center (FHC) to compare women’s health visits between male and female residents. All office visits billed over 5 years (2003–2007) were included in the sample. All women’s health encounters (excluding those related to pregnancy care) were identified for patients over the age of 18 using the first documented International Classification of Diseases, Version 9 (ICD-9) code from the diagnosis list of their billing forms. We then classified these encounters as related to either acute care (codes 611.0, 611.7, 616.1, 614.9, 617.9, 625.3, 626.0, 626.8, 627.2, 629.9) or preventive care (V72.31, V76.2, and HCPCS codes G0101 and Q0091). Visits from non-FHC rotations in obstetrics and gynecology or out-of-FHC rotations were not included.

Available providers (total number of residents) from each individual year from 2003–2007 were identified with substitution of names for randomly assigned numbers. No protected patient health information was used, and an exempt status was awarded by our institutional review board.

A database was created with the following variables: provider identification number, year of resident training, provider’s gender, fiscal year, and type of visit (acute or preventive). Total number of visits by residents was calculated, as well as total number of visits by type. Mean, median, and 25–75 inter-quartile ranges for total visits, acute visits, and preventive visits were calculated and stratified by resident year. Mean numbers of visits were compared between males and females for each subset using Student’s t tests. The sample size of exam results from 49 men and 70 women had 80% power to detect a 7-point difference in mean scores.

Analysis of Data on Practice, Training, and In-service Examination Scores

We performed an alumni survey that had a questionnaire consisting of items that assessed graduates’ current practice and perception of training in different areas of family medicine as insufficient, appropriate, or excessive. Frequencies of answers were tabulated. Finally, the mean scores on the women’s health section of the family medicine in-service exam were compared by gender overall and for each year from 2003–2007. Comparisons were made using t tests.

Results

Women’s Health Visits

A total of 138,239 visits occurred over the 5 years included in the study (2003–2007) at the FHC, of which 60% were by female patients. Faculty (13 family physicians and four pediatricians) and four mid-level providers (two nurse practitioners and two physician assistants) were responsible for 48% of the total number of encounters. Care in the remainder of the visits was provided by residents.

Women’s Health Visits With Male and Female Residents

Table 1 shows the diagnoses for visits in which women’s health issues were the first-listed ICD-9 or HCPCS codes. Of these, 1,172 encounters corresponded to acute care visits and 2,243 to preventive visits. Encounters were performed by an average of 22 residents per year, with a male:female ratio of 8:13. Specifically, male residents cared for a total of 446 (13%) women’s health visits while female residents performed 2,032 (59.5%) such visits. Care for the remainder of the visits was rendered by faculty, nurse practitioners, and physician assistants.

Female resident physicians provided care for 86% of the preventive women’s health visits and 91% of all acute care visits performed by residents. The female residents’ preventive visits accounted for 66.3% of their total women’s health visits while male residents’ preventive encounters accounted for 51% of their total women’s health visits.

Table 2 demonstrates the differences between visits to male and female residents by year. Female residents had a significantly higher number of women’s health visits for each resident year and type of visit than did
male residents. Male residents averaged as few as four total women’s health visits the first year of residency and reached an average of only 20 total visits over the 3 years. Female residents, on the other hand, reached an average of 30 visits by the second year, and accumulated an average of 64 visits over the 3-year residency.

**Training and In-service Exam Scores**

Of the 48 graduates of the program between 1994 and 2006 who responded to the 2007 alumni survey (50% response rate), 48% were female. Most of the items included in the survey were answered.

The majority of graduates practice outpatient primary care. About 83% of the alumni include women’s health as part of their current personal practices, and the overall appraisal of their residency training in the specific area of women’s health was assessed as insufficient in 2.2% of the cases and as appropriate in the 97.8% of the remaining responses. No responses indicated a perception of excessive training in this area.

The in-service examination Women's Health section mean scores were significantly higher for the female residents. Female residents had a mean score of 56.8 (95% CI=51.1–62.0) compared to male residents’ mean score of 41.7 (95% CI=34.9–48.5). These differences were statistically significant for scores in 2 of the 5 study years (Figure 1).

**Discussion**

While the specialty of family medicine has made efforts to train physicians capable of providing primary care to women, data from our program shows that male residents may not be receiving adequate training in this area. At all levels of training, male residents had fewer experiences with both acute and preventive women’s health care. More significantly, in 2 of the 5 years in the study period, male residents had

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**Table 1**

Distribution of Visits Per ICD-9 Code and HCPCS Codes

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th># of Visits</th>
</tr>
</thead>
<tbody>
<tr>
<td>610.0</td>
<td>Diffuse cystic mastopathy</td>
<td>9</td>
</tr>
<tr>
<td>611.0</td>
<td>Inflammatory disease of breast</td>
<td>42</td>
</tr>
<tr>
<td>611.7</td>
<td>Lump or mass in breast</td>
<td>42</td>
</tr>
<tr>
<td>614.9</td>
<td>Unspecified inflammatory disease of female pelvic organs and tissues</td>
<td>60</td>
</tr>
<tr>
<td>616.1</td>
<td>Vaginitis and vulvovaginitis</td>
<td>510</td>
</tr>
<tr>
<td>617.9</td>
<td>Endometriosis, site unspecified</td>
<td>22</td>
</tr>
<tr>
<td>625.3</td>
<td>Dysmenorrhea</td>
<td>100</td>
</tr>
<tr>
<td>626.0</td>
<td>Absence of menstruation</td>
<td>124</td>
</tr>
<tr>
<td>626.8</td>
<td>Dysfunctional or functional uterine hemorrhage NOS</td>
<td>119</td>
</tr>
<tr>
<td>627.2</td>
<td>Symptomatic menopausal or female climacteric states</td>
<td>43</td>
</tr>
<tr>
<td>629.9</td>
<td>Unspecified disorder of female genital organs</td>
<td>1</td>
</tr>
<tr>
<td>V76.2</td>
<td>Routine cervical Papanicolaou smear</td>
<td>116</td>
</tr>
<tr>
<td>V72.31</td>
<td>Routine gynecological examination</td>
<td>1,926</td>
</tr>
<tr>
<td>G0101</td>
<td>Cervical or vaginal cancer screening; pelvic and clinical breast exam</td>
<td>114</td>
</tr>
<tr>
<td>Q0091</td>
<td>Screening Papanicolaou smear; obtaining, preparing, and conveyance of cervical or vaginal smear to laboratory</td>
<td>87</td>
</tr>
</tbody>
</table>

ICD-9—*International Classification of Diseases, Ninth Edition*
HCPCS—*Healthcare Common Procedure Coding System*

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**Table 2**

Mean Values for Number of Acute and Preventive Women’s Health Visits by Resident Gender and Distribution by Year of Training and Type of Visit

<table>
<thead>
<tr>
<th>Resident Year</th>
<th>Type of Visit</th>
<th>Male</th>
<th>Female</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean (95% CI)</td>
<td>Mean (95% CI)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PGY-1</td>
<td>Acute</td>
<td>1.7 (1.1–2.3)</td>
<td>3.25 (2.4–4.1)</td>
<td>&lt;.008</td>
</tr>
<tr>
<td></td>
<td>Preventive</td>
<td>2.1 (0.95–3.2)</td>
<td>6.9 (4.9–8.8)</td>
<td>.003</td>
</tr>
<tr>
<td></td>
<td>Totals</td>
<td>3.75 (2.6–4.9)</td>
<td>9.75 (7.6–11.9)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>PGY-2</td>
<td>Acute</td>
<td>4.3 (2.7–5.9)</td>
<td>9.4 (7.1–11.7)</td>
<td>.0016</td>
</tr>
<tr>
<td></td>
<td>Preventive</td>
<td>4.9 (2.7–5.9)</td>
<td>20.1 (14–25.4)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td></td>
<td>Totals</td>
<td>9.2 (6.1–12.3)</td>
<td>29.5 (23.7–35.3)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>PGY-3</td>
<td>Acute</td>
<td>9.7 (7.3–12.3)</td>
<td>16.3 (14.2–18.5)</td>
<td>.002</td>
</tr>
<tr>
<td></td>
<td>Preventive</td>
<td>9.8 (3.5–16.0)</td>
<td>29.7 (21.3–38.2)</td>
<td>.017</td>
</tr>
<tr>
<td></td>
<td>Totals</td>
<td>17.9 (13.3–22.5)</td>
<td>46.0 (37.3–54.8)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>All Years</td>
<td>Acute</td>
<td>9.8 (6.4–13.3)</td>
<td>22.2 (16.8–25.7)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td></td>
<td>Preventive</td>
<td>9.9 (5.5–14.4)</td>
<td>42.6 (29.7–55.5)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td></td>
<td>Totals</td>
<td>19.75 (13–26.5)</td>
<td>63.8 (48–79.7)</td>
<td>&lt;.0001</td>
</tr>
</tbody>
</table>

PGY—*post-graduate year*
CI—*confidence interval*
significantly lower mean in-service exam scores than did female residents in the examination section on care of women.

While prior studies have examined the gender of the provider as a factor for the patient’s predilection for a given physician in the setting of women’s health care,3-6,11,12 no studies have examined differences based on physician gender in the adequacy of training in women’s health care. The prior studies that have attempted to evaluate the depth and degree of training received by primary care residents in the management of female-specific issues have used hypothetic cases and knowledge-based questions or retrospective surveys that assess confidence.7,8 Given our data demonstrating fewer visits and lower scores in male residents, more in-depth study is needed to see if our experience is similar to that at other programs.

The decreased number of visits may have had an effect on residents’ knowledge about women’s health, as assessed by in-service exam scores, at least for two of our resident year cohorts. Despite this, responses to our survey show that nearly all graduates rated the training in women’s health care during residency as satisfactory. Given the differences in exam scores, the satisfactory appraisal of training indicates that graduates may have a false sense of security about their skills.

Limitations
The results of this study must be viewed in context of its limitations. First and most important, we report data from one site that may not be representative of family medicine training programs around the country. Second, billing codes may not reflect all visits in which women’s health issues were addressed, and there may be variations in the way different providers coded diagnoses.

Third, causes other than a disproportion in visits to male and female residents may have accounted for differences in examination scores. For example, the number of continuity patients seen by individual residents and additional clinic sessions or out-of-FHC rotations may have contributed to the results.

Conclusions
Despite these limitations, our findings are not previously documented and raise concern that male residents, in comparison to female residents, may have fewer opportunities to provide care for women’s health.

Figure 1
Mean In-service Scores by Year

![Mean In-service Scores by Year](image-url)
problems. While this study did not intend to answer the question of why the selection of providers based on gender occurs, the recognition of this discrepancy highlights the importance of continuity clinics in the overall training of family physicians. If adequate variety of women’s health visits cannot be attained by male residents in their continuity clinic, there may be a need to add increased exposure to specialty clinics and more-specific women’s health curricula. If specialty experiences are not available, programs will have to “manage” assignment of women’s health patients to male residents.

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References