



Medical student evaluation of teaching quality between obstetrics and gynecology residents and faculty as clinical preceptors in ambulatory gynecology

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Objective: This study was undertaken to compare teaching quality between obstetrics/gynecology resident and faculty preceptors in ambulatory gynecology as determined by medical student evaluation.

Study design: A prospective assessment of medical student evaluations of resident and faculty preceptors in ambulatory gynecology was conducted at Brigham and Women's Hospital. Forty-eight third-year medical students evaluated preceptors on 15 teaching quality items and recorded their clinical experience during their obstetrics/gynecology clerkship from July 2004 to June 2005 for a total of 138 evaluations.

Results: Faculty scores were statistically higher than resident scores on 4 of the 15 teaching quality items; acting as an appropriate clinical role model, emphasizing evidence-based learning, being enthusiastic about teaching and patient care ($P < .05$). Students performed significantly more Papanicolaou tests and pelvic and breast examinations during ambulatory sessions with residents than with faculty ($P < .001$).

Conclusion: Residents and faculty contribute important and different aspects of teaching experiences for medical students in ambulatory gynecology.

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Ambulatory medical education has become increasingly important, as clinical care has shifted from the inpatient to outpatient setting. The existing literature indicates that the quality of teaching during clinical clerkships is an important factor in medical students'

learning. Students exposed to high-quality teachers score higher on clerkship examinations,¹ National Board of Medical Examiners' Step 2 examinations,² and perform better overall in clinical clerkships.³ Outstanding teachers serve as role models for students and can influence their specialty choices.⁴ Traditionally, faculty members have served as medical student teachers. However, for third-year Harvard Medical School students, the ambulatory gynecology experience during their obstetrics/gynecology clerkship at Brigham and Women's Hospital relies heavily on residents as clinical preceptors.

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The increasing reliance on residents as teachers for medical students in the ambulatory gynecology setting at our institution has arisen largely because of faculty time constraints. Faculty must cope with increasing clinical burdens and scarcity of funding. Economic pressures create a disincentive to assuming teaching responsibilities when emphasis is on income generated from patient care. Few faculty members are compensated for teaching time and even fewer ever receive formal training in teaching. A formal assessment of the impact of this change on medical student education has not been evaluated in the literature. Medical student evaluations of preceptors based on clinical teaching skills can be useful in identifying strengths and weaknesses for groups of preceptors.⁵ This project aimed to compare teaching quality, as measured by medical student evaluation, between obstetric/gynecology residents and faculty in the ambulatory gynecology setting.

Material and methods

A prospective assessment of medical student evaluations of obstetrics/gynecology resident and faculty preceptors was conducted at Brigham and Women's Hospital for the 2004-2005 academic year. Third-year Harvard Medical School students during their 5.5-week core obstetrics/gynecology clerkship were assigned by the clerkship coordinator to, on average, 3 ambulatory gynecology sessions (half-day) with a senior resident (third- or fourth-year resident) and 2 sessions with a faculty member. The students attended resident sessions in the resident general gynecology practice and attended faculty sessions in their respective office practices. An evaluation form that used a 5-point Likert-type scale (1 = strongly disagree; 5 = strongly agree) was created for medical student preceptor evaluation containing 15 items described in the literature as preceptor teaching behaviors valued and deemed effective by medical students in the ambulatory setting.^{6,7} Students voluntarily and anonymously completed evaluation forms at the end of the rotation for each resident and faculty preceptor to whom they were assigned. Students also reported the number of pelvic examinations, breast examinations, and Papanicolaou (Pap) tests performed with each preceptor per session. Demographics pertaining to the clinical preceptors were collected. The study was approved by the Institutional Review Board at Brigham and Women's Hospital and by the Harvard Medical School Committee on Human Studies.

The primary outcome of the study was to compare teaching quality between obstetrics/gynecology resident and faculty preceptors in ambulatory gynecology as determined by medical student evaluation. A power analysis revealed that a sample size of 38 students was necessary to detect an effect size of 0.5 using the Likert scale with 80% power. Statistical analyses included

Student *t* test for continuous data and Pearson χ^2 test for categorical data. Multivariate analysis was performed using a mixed linear model and mixed Poisson model. Test statistics with *P* values less than .05 were considered statistically significant. Analysis was performed by using SAS (version 9.1, SAS Institute, Cary, NC) and SPSS (version 13.0, SPSS Inc, Chicago, IL).

Results

Overall, 11 faculty members and 13 senior residents participated in the study as ambulatory gynecology preceptors. The academic rank of the faculty consisted of 36.4% instructors, 45.5% assistant professors, and 18.2% associate professors. Of the faculty, 27% (3/11) held a formal education role (defined as receiving salary support for teaching activities). The faculty consisted of 2 academic generalists, 2 gynecologic oncologists, 1 reproductive endocrinologist, 1 urogynecologist, 3 obstetrician/gynecologists in private practice, and 2 attendings specializing in family planning. The residents' future plans included 1 academic generalist, 2 reproductive endocrinologists, 1 urogynecologist, 4 obstetrician/gynecologists in private practice, 1 maternal fetal medicine specialist, 1 research, 1 family planning fellowship, 1 laparoscopy fellowship, and 1 undecided.

Demographic characteristics of the residents and faculty evaluated in the study are shown in Table I. The faculty members were on average older (42.7 years vs 31.6 years, *P* < .05) and had more years since beginning their training (11.9 years vs 3.5 years, *P* < .05) than the residents. There were no significant differences between faculty and residents in gender, advanced degree, receipt of teaching awards, number of sessions per week precepted, and whether they had been former or were present administrative chief resident.

A total of 48 third-year medical students rotated through the obstetrics/gynecology clerkship at Brigham and Women's Hospital from July 2004 to June 2005. Of these students, 100% completed the study for a total of 138 evaluations (67 resident and 71 faculty evaluations). Average student age was 25.4 years. Of the 48 students, 45.8% (22) were male, 54.2% (26) were female (*P* = .564). The students on average attended 4.68 ambulatory sessions during their clerkship. There was no statistically significant difference in the mean number of sessions that the students attended based on gender (4.95 sessions for male students vs 4.46 sessions for female students, *P* = .202).

Table II shows the mean numeric scores from the medical student evaluations, of teaching behaviors of faculty versus residents as ambulatory gynecology preceptors. Scores on individual teaching behaviors and total scores for both faculty and residents were found to be positively affected by the number of ambulatory sessions

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