# A National Curriculum to Address Professional Fulfillment and Burnout in OB-GYN Residents

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## ABSTRACT

**Background** Physician well-being is a priority in graduate medical education as residents suffer high rates of burnout. With complex stressors affecting the clinical environment, conflicting evidence exists as to whether a formal curriculum improves resident well-being.

**Objective** We assessed the feasibility and impact of a national pilot of a yearlong wellness curriculum for obstetrics and gynecology (OB-GYN) residents.

**Methods** The Council on Resident Education in Obstetrics and Gynecology Wellness Task Force developed a national multicenter pilot group of 25 OB-GYN programs to participate in a prospective cohort study. The curriculum included 6 interactive wellness workshops using uniform teaching materials delivered during didactic time. Prior to and following their participation in the curriculum, residents completed a survey containing demographic information and the Professional Fulfillment Index.

**Results** Among 592 eligible participants, 429 (72%) responded to the pretest and 387 (65%) to the posttest. Average age of respondents was 29.1 years (range = 24–52 years) and included 350 (82%) women and 79 (18%) men. At baseline, 254 of 540 (47%) respondents met criteria for burnout, and 101 (23%) met criteria for robust professional fulfillment. Residents participated in an average of 3.9 workshops. While aggregate posttest scores did not differ from baseline, residents attending 4 to 6 workshops had improved rates of burnout (40% vs 50%, $P = .017$) and robust professional fulfillment (28% vs 20%, $P < .001$) compared with those with lower attendance.

**Conclusions** A wellness curriculum was a feasible addition to OB-GYN residency program curricula in programs across the country. Residents with higher attendance experienced improved professional fulfillment and less burnout.

## Introduction

The crisis of physician burnout has garnered attention from the medical community, but controversy remains regarding how to address it effectively.[1,2] The negative consequences of burnout extend beyond the individual physician, affecting the clinical environment and care of patients and draining the workforce of talent.[1,3] Burnout is a response to chronic work-related stress.[4] Addressing the root causes of these stresses requires cultural and structural changes within medicine, and early efforts to improve physicians' ability to thrive have been successful.[2] Leading researchers in this arena have proposed a conceptual model for physician well-being comprising 3 domains: institutional wellness culture, efficiency in practice environments, and personal resilience.[5]

Residency training represents a time of peak distress for physicians due to long work hours, work-home conflict, sleep disturbances, and work structures that do not provide support or allow sufficient personal control.[6] A review of efforts to address sources of burnout or enhance resilience in residents described research limited by the small scale of most interventions within individual residency programs.[7] Another review examined the approaches taken to improve physician well-being and asserted that enhancing professional fulfillment and remediating burnout are 2 distinct imperatives.[8] While drivers of burnout change with practice setting and career phase, encountering these challenges is inevitable and learning how to deal with them should be a part of the education of physicians. Finding meaning in work requires investment from individual physicians as well as the health systems in which they work, and ultimately will sustain a physician's career.[9] Organizational prioritization, support, and funding to promote physician well-being are essential for these efforts to be perceived as credible and adopted into practice.[8]

Obstetrics and gynecology (OB-GYN) residents experience intense stress due to the emotionally and physically demanding nature of the work. As a group, they suffer high rates of burnout.[10–13] A national survey of OB-GYN trainees observed that burnout and other problems with physician well-being increased with time in training.[14] The priority placed on

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interventions to support wellness differ across OB-GYN training environments.[11] This national pilot program to explore the impact of a standard wellness curriculum for OB-GYN residents endeavored to determine the efficacy of this curriculum in promoting professional fulfillment and reducing burnout in training programs across the United States.

**What was known and gap**
Many residency programs are implementing initiatives to address burnout, but with the small scale of most interventions and complex stressors affecting the clinical environment, there is conflicting evidence on the efficacy of formal wellness curricula.

**What is new**
A national pilot program to explore the impact of a standard wellness curriculum for obstetrics and gynecology residents across the United States.

**Limitations**
The study had greater representation within university programs than community or military residency programs. Statistical correction was not made for multiple associations.

**Bottom line**
Residents with higher attendance in a wellness curriculum demonstrated improved well-being.

## Methods

### Setting and Participants

All OB-GYN residency programs in the United States and Canada were invited to participate in the pilot curriculum through email notification and announcements at the Council on Resident Education in Obstetrics and Gynecology (CREOG)/Association of Professors of Gynrcology and Obstetrics annual meeting. Program leaders involved in the pilot were invited to participate in a 2-hour in-person training and 2 interactive webinars over the course of the year. No special expertise or prior training in wellness was required to deliver the curriculum. Course materials included PowerPoint slides, facilitator guides, and participant worksheets. Programs designated a lead faculty member and provided contact information for the program director and program manager, which were used throughout the year to coordinate survey distribution and the webinars. Leaders were encouraged to hold the 6 workshops during protected conference time between July 2018 and June 2019, although the timing of the sessions varied among programs.

### Intervention

The CREOG established physician well-being as a priority, and a task force with educators in OB-GYN designed a yearlong wellness curriculum for widespread implementation by residency programs. The curriculum drew on research related to how physicians cultivate resilience in residency training,[15,16] as well as lessons learned from prior efforts to reduce burnout in OB-GYN residents.[17–25] Six interactive workshops addressed wellness through an introduction to positive psychology; incorporated exercises to increase empathy and gratitude, resilience, and organization and management skills; and presented methods for processing difficult events. The workshops also directly addressed program and organizational culture and included opportunities for interaction among participating residents (TABLE 1).

### Outcomes

Prior to the first workshop and at the conclusion of the academic year, surveys were distributed to participating residents directly from CREOG using the contact information on file. Residents who had declined communication from the American College of Obstetricians and Gynecologists (ACOG) did not receive the survey. Residents provided consent to participate before completing the survey tool. The survey included demographic information and 16 items from the Professional Fulfillment Index (PFI). Measured on 5-point Likert scales, the PFI assessed professional fulfillment (PF) and burnout; the latter was a burnout composite (BC) score that combined the measures of work exhaustion and disengagement (PFI provided as online supplemental material).[26] Separate scores for each domain were analyzed using established cutoffs for burnout ($BC > 1.3$) and robust professional fulfillment ($PF > 3$). Residents and program leaders were asked to provide feedback about the curriculum, which was used to improve the materials prior to making them available on the ACOG website. Curriculum materials are available to other educators by contacting the corresponding author.

Based on recent reports that approximately 50% of OB-GYN physicians experience burnout,[27] a sample size of 194 participants was estimated to be required in order to detect a 10% improvement in burnout among participants, assuming an alpha error rate of 0.05 and 80% power. Paired *t* tests and 1-way analyses of variance (ANOVAs) were used to evaluate differences between mean scores for each group based on reported demographics and attendance at workshop sessions in the wellness curriculum. Descriptive statistics and *t* tests were calculated using Microsoft Excel 2016 (Microsoft, Redmond, WA), and ANOVAs were calculated using SPSS version 23 (IBM Corp, Armonk, NY). Correlation coefficients between the change in PFI scores, attendance, and demographic information were calculated using SPSS.

The Institutional Review Board of ACOG approved the study.

**TABLE 1**
Council on Resident Education in Obstetrics and Gynecology Resident Wellness Curriculum[a]

| Session and Goals | Elements |
|---|---|
| Introduction to wellness<br>▪ Review curriculum goals<br>▪ Introduce positive psychology | ▪ Review different dimensions of wellness<br>▪ Introduce PERMA framework (positive emotions, engagement, relationships, meaning, achievement)[28]<br>▪ Explore character strengths |
| Gratitude and empathy[2]<br>▪ Identify benefits of gratitude<br>▪ Introduce "broaden and build" theory[29] | ▪ Describe basics of positive psychology<br>▪ Experience gratitude practices found to improve well-being in health care workers[30] |
| Increasing resilience<br>▪ Define resilience<br>▪ Redefine stress and its utility | ▪ Reflect on ways to reframe stress as a useful tool<br>▪ Draw a resilience tree based on individual background and experience[16]<br>▪ Write a personal prescription for resilience |
| Time management/managing priorities<br>▪ Explore time utilization<br>▪ Reset priorities | ▪ Practice identifying what matters<br>▪ Consider different approaches to prioritizing tasks and needs<br>▪ Draft a time management matrix[31] |
| Dealing with difficult events<br>▪ Review approaches to adverse events<br>▪ Provide structure and resources for managing difficult events | ▪ Practice writing about a difficult event<br>▪ Discuss stages of recovery for "second victim" events<br>▪ Identify available institution and program resources<br>▪ Examine what an ideal debrief looks like |
| Mission, values, culture<br>▪ Explore personal values<br>▪ Describe culture and mission of program | ▪ Identify personal values<br>▪ Define the culture of the program<br>▪ Consider how resiliency affects values, mission, and culture<br>▪ Draft a program mission statement |

[a] Six workshops designed to take place over the course of a year include reflective activities, videos, and interactive games related to different aspects of wellness.

## Results

Twenty-five OB-GYN residency programs from across the United States participated in the pilot (TABLE 2). Among these programs, 14 had existing wellness programming prior to initiating the curriculum. Among 592 participating residents, 429 (72%) responded to the pretest. The average age of respondents was 29.1 years (range = 24–52 years); respondents included 350 (82%) women and 79 (18%) men. Baseline PFI scores are shown in TABLE 3. At baseline, 254 of 540 (47%) of respondents met criteria for burnout, and 101 (23%) met criteria for robust professional fulfillment. Professional fulfillment was higher among men than women at baseline (2.85 vs 2.69, $P = .032$). At programs where wellness programming was already in place, residents were more likely to meet criteria for burnout (1.40 vs 1.27, $P = .007$) and less likely to demonstrate robust professional fulfillment (2.66 vs 2.80, $P = .020$). There was no difference in professional fulfillment or burnout between residents with respect to marital status or geographic region.

At the conclusion of the curriculum, 387 (65%) of residents responded to the posttest (TABLE 4). There was no difference in overall scores from baseline, with 98 (25%, $P = .51$) meeting criteria for robust professional fulfillment and 170 (44%, $P = .07$) meeting criteria for burnout. Residents participated in an average of 3.9 sessions of the 6-session CREOG wellness curriculum (range = 0–6, median = 4 sessions). Differences became apparent, however, when attendance was considered. The 247 residents who reported attending 4 or more sessions had lower rates of burnout (40% vs 50%, $P = .017$) and higher rates of professional fulfillment (28% vs 20%, $P < .001$) compared with the 139 residents who reported attending 3 or fewer sessions of the wellness curriculum.

Subgroup analysis was performed for the 285 (48%) residents who had complete pretest and posttest data using the pretest data as an internal control. The average PF score decreased by 0.2 points ($P < .001$), and the average BC score decreased by 0.17 points ($P < .001$). These changes, while statistically significant, did not suggest meaningful change within this subgroup. The differences between low attendance and high attendance groups are shown in TABLE 5. Among these individuals, no differences in age, gender, baseline PF and BC scores, or the priority assigned to wellness were seen between residents with different attendance in the wellness curriculum.

**TABLE 2**
Residency Programs Participating in the Council on Resident Education in Obstetrics and Gynecology (CREOG) Wellness Curriculum

| CREOG Region | Residency Program Name | Type of Program | No. of Residents Participating | Wellness Curriculum Already in Place |
|---|---|---|---|---|
| Region 1 (Connecticut, Maine, Massachusetts, Newfoundland, New Hampshire, New York, Nova Scotia, Quebec, Rhode Island, Vermont) | Stamford Hospital | Community | 12 | No |
| | Brown University | University | 32 | No |
| | Buffalo/Sisters of Charity | Community | 16 | No |
| | New York University | University | 40 | Yes |
| Region 2 (Delaware, Indiana, Kentucky, Michigan, New Jersey, Ohio, Ontario, Pennsylvania) | Cleveland Clinic | University | 22 | Yes |
| | St Luke's University Health Network | University | 22 | No |
| | University of Pennsylvania | University | 28 | Yes |
| | Cleveland Clinic Akron General | Community | 15 | Yes |
| | Reading Hospital | Community | 16 | Yes |
| Region 3 (District of Columbia, Florida, Georgia, Maryland, North Carolina, Puerto Rico, South Carolina, Virginia, West Virginia) | University of Florida College of Medicine–Jacksonville | University | 24 | No |
| | University of South Florida Morsani | University | 21 | Yes |
| | University of Central Florida/HCA Graduate Medical Education Consortium | University | 13 | Yes |
| Region 4 (Alabama, Arkansas, Illinois, Iowa, Kansas, Louisiana, Manitoba, Minnesota, Mississippi, Missouri, Nebraska, Oklahoma, Tennessee, Texas, Wisconsin) | University of Wisconsin | University | 26 | Yes |
| | University of Alabama at Birmingham | University | 32 | No |
| | Mayo Clinic Department of OB-GYN | University | 18 | Yes |
| | Louisiana State University Shreveport | University | 22 | No |
| | Rush University | University | 24 | No |
| | University of Tennessee | University | 33 | Yes |
| | University of Chicago Medicine | University | 27 | Yes |
| | University of Iowa Hospitals and Clinics | University | 20 | No |
| Region 5 (Alberta, Arizona, Armed Forces District, British Columbia, California, Colorado, Hawaii, Nevada, New Mexico, Oregon, Utah, Washington) | University of Arizona Phoenix | University | 36 | No |
| | San Antonio Military Medical Center | Military | 24 | Yes |
| | University of Washington | University | 28 | No |
| | University of Hawaii | University | 26 | Yes |
| | Kaiser Permanente Santa Clara | Community | 16 | No |

## Discussion

Among OB-GYN residents at programs participating in a yearlong wellness curriculum, residents with higher attendance at the workshops demonstrated higher professional fulfillment and lower burnout than those with lower attendance. This supports the theoretical model for physician well-being that includes personal resilience and institutional wellness culture as reciprocal domains of physician well-being.[5] This curriculum did not directly address the third domain of practice efficiency but is likely to

**TABLE 3**
Baseline Professional Fulfillment Index Scores

| Characteristic | Professional Fulfillment Score | | Burnout Composite Score | |
|---|---|---|---|---|
| | Mean Score (± SD) | n (%) Meeting Threshold Criteria[a] | Mean Score (± SD) | n (%) Meeting Threshold Criteria[a] |
| Overall (N = 429) | 2.72 (± 0.60) | 101 (23.4) | 1.33 (± 0.73) | 254 (47) |
| Gender | | | | |
| Female (N = 350) | 2.69 (± 0.59) | 77 (22.0) | 1.36 (± 0.72) | 170 (48.6) |
| Male (N = 79) | 2.85 (± 0.63) | 24 (30.8) | 1.23 (± 0.76) | 31 (39.7) |
| *P* | .032 | | .08 | |
| Marital status | | | | |
| Single (N = 153) | 2.69 (± 0.57) | 28 (18.3) | 1.38 (± .70) | 79 (51.6) |
| Married (N = 193) | 2.73 (± 0.62) | 51 (26.4) | 1.31(± .76) | 85 (44.0) |
| Long-term relationship (N = 75) | 2.70 (± 0.59) | 19 (25.3) | 1.25 (± .64) | 31 (41.3) |
| Separated/divorced (N = 6) | 2.93 (± 0.74) | 2 (33.3) | 1.11 (± 0.62) | 3 (50) |
| *F* | 0.96 | | 1.32 | |
| *P* | .51 | | .22 | |
| CREOG region | | | | |
| 1 | 2.64 (± 0.63) | 18 (29.5) | 1.37 (± 0.69) | 31 (50.8) |
| 2 | 2.72 (± 0.59) | 18 (20.7) | 1.33 (± 0.78) | 42 (48.3) |
| 3 | 2.67 (± 0.58) | 6 (13.3) | 1.41 (± 0.74) | 22 (48.9) |
| 4 | 2.73 (± 0.59) | 37 (25.5) | 1.34 (± 0.69) | 69 (47.6) |
| 5 | 2.77 (± 0.61) | 22 (25.6) | 1.26 (± 0.76) | 37 (43.0) |
| *F* | 1.22 | | 0.767 | |
| *P* | .29 | | .77 | |
| Current wellness programming | | | | |
| Yes (N = 183) | 2.66 (± 0.62) | 48 (19.5) | 1.40 (± 0.70) | 126 (51.2) |
| No (N = 246) | 2.80 (± 0.57) | 53 (28) | 1.23 (± 0.74) | 70 (40.9) |
| *P* | .020 | | .007 | |

Abbreviation: CREOG, Council on Resident Education in Obstetrics and Gynecology.
[a] Meeting criteria for professional fulfillment is a positive response greater than 3 on the professional fulfillment subscales, and for burnout, a score of greater than 1.3 on the average of the work exhaustion and disengagement subscales.

complement efforts to improve clinical work experience. In addition to providing instruction on managing stress, the curriculum promoted social support and community and allowed space for exploring meaning in work and work-life integration. The observed approximate 10% improvement in residents attending 4 or more sessions is consistent with improvements seen from other interventions to encourage engagement and reduce burnout.[32]

While there may have been unmeasured differences between the low-attendance and high-attendance groups, it is notable that no differences were seen

**TABLE 4**
Professional Fulfillment Index Scores After 1 Year

| Wellness Curriculum Participants | Professional Fulfillment Score | | Burnout Composite Score | |
|---|---|---|---|---|
| | Mean Score (± SD) | n (%) Meeting Threshold Criteria[a] | Mean Score (± SD) | n (%) Meeting Threshold Criteria[a] |
| Overall (N = 387) | 2.68 (± 0.72) | 98 (25) | 1.45 (± 0.96) | 170 (44) |
| CREOG wellness curriculum attendance | | | | |
| Low attendance (N = 139) | 2.51 (± 0.75) | 28 (20) | 1.59 (± 0.99) | 71 (50) |
| High attendance (N = 247) | 2.76 (± 0.70) | 70 (28) | 1.38 (± 0.94) | 99 (40) |
| *P* | < .001 | | .017 | |

Abbreviation: CREOG, Council on Resident Education in Obstetrics and Gynecology.
[a] Meeting criteria for professional fulfillment is a positive response greater than 3 on the professional fulfillment subscales, and for burnout, a score of greater than 1.3 on the average of the work exhaustion and disengagement subscales.

**TABLE 5**
Differences Between Residents With Higher and Lower Attendance at Wellness Curriculum (N = 285)

| Characteristics | Low Attendance Group (N = 101) | High Attendance Group (N = 184) | *P* Value |
|---|---|---|---|
| Average age (range) | 29.1 (26–36) | 28.9 (25–52) | .59 |
| Gender, n (%) | | | |
| Female | 86 (85) | 146 (80) | .31 |
| Male | 15 (15) | 36 (20) | |
| Baseline PFI scores (± SD) | | | |
| Professional fulfillment | 2.62 (± 0.62) | 2.74 (± 0.60) | .10 |
| Burnout composite | 1.34 (± 0.68) | 1.29 (± 0.70) | .51 |
| Reported priority of wellness (0–10 scale) | 9.44 (± 1.09) | 9.44 (± 1.02) | .98 |

Abbreviation: PFI, Professional Fulfillment Index.

between these groups in baseline rates of burnout and professional fulfillment, gender, or stated interest in wellness. Approximately a quarter of residents demonstrated robust professional fulfillment, and almost half demonstrated burnout at baseline. Female residents had lower rates of professional fulfillment and higher rates of burnout than their male colleagues. Residents' region of training, age, and marital status did not influence baseline scores or response to the wellness curriculum. Our data could not account for factors that decreased attendance; given the association between attendance and improvement, investigating resident attitudes and factors affecting investment of time and energy in wellness programming may provide direction for increasing attendance and buy-in. Notably, the overall rates of burnout in the cohort did not change with this curriculum. Systemic interventions to reduce drivers of burnout are likely to be necessary before global rates of burnout decrease.

Consistent with other studies, participating OB-GYN residents had high rates of burnout and poor professional fulfillment at baseline, and women fared worse than men.[33,34] A culture that allows flexibility in negotiating a life inside and outside of medicine is particularly important for women in academic medicine.[35] Greater attention to the unique sources of strain for female physicians is essential to promote a thriving workforce, especially in the predominantly female subspecialty of OB-GYN.[36,37] Physician resilience cannot develop in a culture that persists in tolerating discrimination, biased structures, and outdated professional archetypes.[38–40]

The strength of this study is its large geographically diverse sample, which is adequately powered to detect changes in burnout. The study had a high survey response rate. The success of this project was bolstered by its support from CREOG and underscores the importance of institutional support—in this case, national—to truly effect change in physician wellness efforts. Fewer studies have explored professional fulfillment, and while the results of the study are encouraging, evidence that coordinated efforts to improve well-being may be effective, residents more likely to engage in the curriculum may be different from the residents with lower attendance.

The study is limited by its greater representation within university programs than community or military residency programs. This may reflect greater resources in an academic center for wellness initiatives and introduces the possibility of selection bias. Statistical correction was not made for multiple associations; however, the associations explored were limited to those theorized to be relevant to burnout and professional fulfillment in order to reduce the likelihood of a spurious association. The study was not powered to detect differences between training programs. Further investigation should explore how practice setting informs the well-being of physicians in training. A recent systematic review and meta-analysis of resident burnout demonstrated significant differences between burnout profiles in various specialties.[41] Understanding the unique challenges and experiences of physicians is important for any wellness intervention to be well received.

## Conclusions

These data provide encouraging evidence that OB-GYN residents with higher attendance in a wellness curriculum demonstrate improved well-being. Our findings suggest that engagement in learning how to develop personal resilience can be part of a multifaceted approach to improve the physicians' experience. A wellness curriculum, alongside other efforts to reduce structural drivers of burnout, holds the promise of moving toward long-lasting and meaningful change.

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