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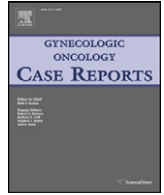
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Survey Article

Preparedness of Ob/Gyn residents for fellowship training in gynecologic oncology



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ABSTRACT

Residency training in obstetrics and gynecology is being challenged by increasingly stringent regulations and decreased operative experience. We sought to determine the perception of preparedness of incoming gynecologic oncology fellows for advanced surgical training in gynecologic oncology. An online survey was sent to gynecologic oncologists involved in fellowship training in the United States. They were asked to evaluate their most recent incoming clinical fellows in the domains of professionalism, level of independence/graduated responsibility, psychomotor ability, clinical evaluation and management, and academia and scholarship using a standard Likert-style scale. The response rate among attending physicians was 40% ($n = 105/260$) and 61% ($n = 28/46$) for program directors. Of those who participated, 49% reported that their incoming fellows could not independently perform a hysterectomy, 59% reported that they could not independently perform 30 min of a major procedure, 40% reported that they could not control bleeding, 40% reported that they could not recognize anatomy and tissue planes, and 58% reported that they could not dissect tissue planes. Fellows lacked an understanding of pathophysiology, treatment recommendations, and the ability to identify and treat critically ill patients. In the academic domain, respondents agreed that fellows were deficient in the areas of protocol design (54%), statistical analysis (54%), and manuscript writing (65%). These results suggest that general Ob/Gyn residency is ineffective in preparing fellows for advanced training in gynecologic oncology and should prompt a revision of the goals and objectives of resident education to correct these deficiencies.

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Introduction

Training obstetrician–gynecologists who are competent in the operating room has become increasingly challenging. Though laparotomy was once taught as the primary approach for treatment of many gynecologic diseases, the availability of new minimally invasive surgical techniques has required residents to develop a much broader skill set. With a decreasing proportion of cases performed through a trans-abdominal approach, the residents have lost a significant source of experience in laparotomy (Weinberg et al., 2011). Unfortunately, they report receiving inadequate training in many minimally invasive techniques as well (Einarsson and Sangi-Haghpeykar, Oct–Dec, 2009). The result is a troubling trend toward residents who graduate with insufficient skills in all types of gynecologic surgery.

Further encumbering the training process are limitations and precautions that have been put in place by regulatory bodies. These include

implementation of duty hour restrictions which have decreased training time, hands-on experience, and autonomy for residents. As a result, Ob/Gyn educators report that overall resident education has suffered and total surgical volume during residency has diminished (Espey et al., 2007). Perhaps because a growing proportion of graduating residents feel unprepared to practice general Ob/Gyn, the number who are choosing to pursue fellowship training has increased in recent years (Gerber and Lo Sasso, 2006).

Similar challenges are being faced in many fields of medicine (Drolet et al., 2013; Jagannathan et al., 2009; Mir et al., 2011). In an effort to determine the effects of these ongoing changes on surgical residency training, the Fellowship Council of the American College of Surgeons (ACS) in a recent survey asked directors of surgical fellowship programs to evaluate the preparedness of incoming fellows (Mattar et al., 2013). The consensus was that incoming surgical fellows were deficient in patient ownership and surgical skills and lacked interest in scholarly activities. As a result, they required additional training at the beginning of fellowship to reach the expected level of proficiency. The objective of our study was to similarly evaluate the preparedness of Ob/Gyn residents for advanced surgical training in gynecologic oncology.

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Methods

Survey design and characteristics

We developed a survey to evaluate incoming gynecologic oncology fellows in five domains: professionalism, level of independence/graduated responsibility, psychomotor ability, clinical evaluation and management, and academia and scholarship. Our survey was modified, with permission, from a validated survey created by the Fellowship Council of the American College of Surgeons (Mattar et al., 2013). Minor changes were designed to make the questions more relevant to gynecologic oncology (e.g. proficiency in laparoscopic cholecystectomy was changed to laparoscopic oophorectomy). The final survey comprised a total of 48 quantitative and 5 open-ended items (Table 1). Quantitative questions used a standard 5-point Likert-style scale, except in the psychomotor domain, in which a 4-point scale was used. This

project received exemption from the Colorado Multiple Institutional Review Board.

Participants and data collection

The survey was uploaded to the Research Electronic Data Capture (REDCap) platform hosted at the University of Colorado (Harris et al., 2009) and internally tested at the University of Colorado. Practicing gynecologic oncologists in the United States who are directly involved in gynecologic oncology fellowship training were identified through the American Board of Obstetrics and Gynecology (ABOG), departmental websites, and the Society of Gynecologic Oncology website (Society of Gynecologic Oncology, 2014). Any faculty members who were not directly involved in fellowship training as self-identified on the questionnaire were excluded. We then distributed the survey link by email, accompanied by a letter describing the intent and goals of the survey

Table 1

Survey administered to attending physicians involved in Gynecologic Oncology Fellowship training: quantitative questions.

Professionalism

- The incoming clinical fellow communicates effectively with his or her patients.
- The incoming clinical fellow promptly comes in after hours to evaluate a patient that may need a higher level of care/ICU transfer.
- The incoming clinical fellow demonstrates ownership toward patients.
- The incoming clinical fellow treats the ancillary staff with respect.
- The incoming clinical fellow treats the residents and house staff with respect.
- The incoming clinical fellow demonstrates professional behavior.
- The incoming clinical fellow knows the history and the imaging of the patient he or she is operating upon.
- The incoming clinical fellow arrives to the operating room prepared for the operation.

Level of Independence/graduated responsibility

- The incoming clinical fellow formulates a plan of action for patients (inpatient/outpatient) before you see the patient.
- The incoming clinical fellow can independently perform a hysterectomy without me being scrubbed in.
- The incoming clinical fellow can independently perform 30 min of a major procedure safely with me being in the room next door.
- The incoming clinical fellow can independently set up a retractor for laparotomy and appropriately pack/mobilize the bowel for pelvic surgery.
- The incoming clinical fellow can independently perform diagnostic laparoscopy.
- The incoming clinical fellow can independently perform a laparoscopic BSO.
- The incoming clinical fellow can independently perform a LEEP procedure.
- The incoming clinical fellow can independently perform basic lysis of adhesions.
- The incoming clinical fellow is able to take general gynecology call with only occasional consultation with me and only occasional assistance in the operating room for difficult cases.
- The incoming clinical fellow is able to care for all postoperative issues on our surgical patients.
- The incoming clinical fellow is expected to be able to perform advanced cases independently by the end of the first half of the fellowship.
- The incoming clinical fellow is expected to be able to practice independently by the end of the fellowship.

Psychomotor ability

- The incoming clinical fellow is able to control bleeding.
- The incoming clinical fellow is proficient in the recognition of anatomy and anatomic tissue planes.
- The incoming clinical fellow is proficient in dissection of tissue planes.
- The incoming clinical fellow is proficient in safe tissue manipulation.
- The incoming clinical fellow is proficient in uses of energy and energy sources.

Clinical evaluation and management

- The incoming clinical fellow demonstrates an understanding of the pathophysiology of the disease,
- The incoming clinical fellow demonstrates an understanding of the options for treatments, and the role and indication for surgery.
- The incoming clinical fellow demonstrates the ability to perform an initial outpatient interview and the design of the correct work-up,
- The incoming clinical fellow demonstrates the ability to counsel patients regarding the differential diagnosis and the recommendations for care.
- The incoming clinical fellow has a good grasp of indications for surgery and the appropriate work-up.
- The incoming clinical fellow has a good grasp of alternatives for treatment, and areas of controversy or lack of consensus.
- The incoming clinical fellow demonstrates proficiency in postoperative patient care.
- The incoming clinical fellow demonstrates ability to recognize the early signs of the development of complications.
- The incoming clinical fellow demonstrates ability to initiate appropriate investigations, and to respond with appropriate interventions.
- The incoming clinical fellow understands postsurgical follow-up appropriate to the disease and proper surveillance.
- The incoming clinical fellow has the clinical maturity to identify features of the potentially critically ill patient, to triage to the appropriate level of care, and to seek senior help for the problem in a timely manner with clear communication.

Academia and scholarship

- The incoming clinical fellow has a genuine interest in academic projects.
- The incoming clinical fellow has a healthy curiosity in understanding the underlying mechanisms.
- The incoming clinical fellow has motivation to advance the scientific basis of the field.
- The incoming clinical fellow is familiar with recent publications in his or her field of advanced training.
- The incoming clinical fellow displays self-initiative in conducting clinical research.
- The incoming clinical fellow is aware of and eager to meet deadlines for academic projects.
- The incoming clinical fellow is able to compile and analyze data.
- The incoming clinical fellow is able to present the salient findings of a study clearly.
- The incoming clinical fellow demonstrates understanding of research protocol design.
- The incoming clinical fellow demonstrates understanding of basic statistics.
- The incoming clinical fellow has a good grasp on the fundamentals of preparing an abstract or manuscript.
- The incoming clinical fellow is capable of writing a cohesive manuscript.

Table 2
Description of survey participants.

Academic rank	%
Instructor	3.0
Assistant Professor	24.8
Associate Professor	33.7
Professor	38.6
Fellowship Program Director	%
Yes	28.0
No	72.0
Department Chair	%
Yes	2.0
No	98.0
Years since graduated from fellowship	
Mean ± SD	14.9 ± 9.1
Years working with fellows	
Mean ± SD	13.0 ± 8.6
How long is your fellowship?	%
3 years	76.2
4 years	23.8
When do fellows begin clinical rotations?	%
After at least 1 year of research	79.0
Immediately	21.0
How many years of research in your fellowship?	%
1 year	78.0
2 years	22.0

and assuring recipients that their participation would be anonymous. The instructions explained that evaluations should reflect the global performance of recent fellows as they started their first clinical year, not a research year or second clinical year. Three survey requests were sent over eight weeks in January through March 2014.

Data analysis

Quantitative responses are reported as frequency of distribution within each category; for example (1) strongly agree, (2) agree, (3) neutral, (4) disagree, or (5) strongly disagree. For the psychomotor domain, only four options were given: (1) strongly agree, (2) agree, (3) disagree, or (4) strongly disagree. Statistical tests were considered significant at $p < 0.05$. Written responses to open-ended questions were analyzed in order to identify themes. All analyses were performed using IBM SPSS statistics version 21.

Results

The survey was completed by 105 of the 260 (40%) gynecologic oncology attending physicians who were invited to participate, and 28 of 46 (61%) program directors who were invited to participate. A description of the survey participants is presented in Table 2. The majority (76%) of respondents were affiliated with fellowships that are three years long, and 79% of fellows at those institutions begin clinical rotations after at least one year of research.

Responses to open-ended questions are presented in Table 3a, 3b, 3c, 3d, 3e. In addition, 16–36 free-text responses evaluated incoming fellows'

strengths and weaknesses in each proficiency domain (Table 4). Within the professionalism domain, the responses were generally positive (Table 3a). Sixty-four to 89% of respondents chose either "agree" or "strongly agree" for each of the items. The free-text responses, however, registered a common complaint that incoming fellows demonstrate a general lack of ownership of their patients, with 44% of the comments addressing this issue.

In the level of independence/graduated responsibility domain, the responses were generally less positive (Table 3b). While incoming fellows tended to be proficient in minor procedures and basic laparoscopy, only 51% of the respondents agreed that their incoming fellows could independently perform a hysterectomy. Similarly, 41% of the participants reported that new fellows could perform 30 min of a major procedure independently, 49% indicated that the fellows could set up a retractor and pack the bowel for pelvic surgery, and 45% said that their fellows could perform advanced cases by the end of their first clinical year. In the open response section, educators tended to express the view that early in the fellowship their fellows had to make up for deficiencies in their residency training. They reported that surgical skills of incoming fellows were lacking, and as a result the fellows were not able to become independent in the operating room until later in their fellowship (Table 4).

In the psychomotor ability domain, the respondents indicated that incoming fellows were able to use energy sources appropriately and could safely manipulate tissue (Table 3c). However, only 60% of the respondents reported that incoming fellows were able to control bleeding, 60% reported that fellows could appropriately recognize anatomy and tissue planes, and 42% reported that fellows could proficiently dissect tissue planes. The respondents commented that incoming fellows had a general lack of surgical skills and an inability to identify normal anatomy, particularly retroperitoneal structures (Table 4).

Incoming fellows were generally thought to be proficient in the workup, pre-operative, and post-operative care of their patients (Table 3d). However, there was a perceived lack of understanding of the pathophysiology of disease, treatment recommendations, and treatment alternatives; only 46–55% of the respondents agreed that incoming fellows were proficient in those areas. In addition, the participants reported that they felt that new fellows could not adequately identify and treat critically ill patients. This was apparent in both the quantitative and open-ended responses, with comments indicating that incoming fellows are now beginning their fellowship with far less critical care experience than in the past (Table 4).

In the domain of academia and scholarship, the respondents reported that fellows are very interested and motivated to achieve academically but are unfamiliar with the research process and unprepared to contribute to the scientific advancement of the field (Table 3e). Only 45% of the participants agreed that fellows are familiar with recent publications in the field, and less than 50% of the respondents reported that new fellows were competent in data analysis, research design, basic statistics, or scientific writing. The open-ended responses in this section were consistent with this perspective, indicating a general deficiency in research protocol design, statistical analysis, and manuscript preparation (Table 4).

Table 3a
Professionalism domain responses.

Abbreviated query	Strongly disagree, %	Disagree, %	Neutral, %	Agree, %	Strongly agree, %
Communicates effectively	0	7.4	13.8	54.3	24.5
Comes into hospital to see sick patients	0	8.5	16	35.1	40.4
Demonstrates ownership of patients	0	11.7	16	33	39.4
Treats ancillary staff with respect	0	2.1	13.8	46.8	37.2
Treats residents with respect	0	2.1	16	47.9	34
Demonstrates professional behavior	0	1.1	9.6	51.1	38.3
Reviews history/imaging of patients for OR	0	8.5	24.5	42.6	24.5
Arrives to OR well prepared	1.1	10.6	24.5	41.5	22.3

Table 3b
Level of independence/graduated responsibility domain responses.

Abbreviated query	Strongly disagree, %	Disagree, %	Neutral, %	Agree, %	Strongly agree, %	N/A
Formulates a plan of action for patients	0	11.5	24.1	39.1	25.3	0
Can independently perform a hysterectomy	5.7	19.5	23	32.2	18.4	1.1
Can perform 30 min of a major procedure independently without supervision	6.9	27.6	20.7	29.9	11.5	3.4
Can appropriately set up a retractor and pack the bowel	3.4	18.4	27.6	34.5	14.9	1.1
Can independently perform a diagnostic laparoscopy	2.3	5.7	9.2	51.7	28.7	2.3
Can independently perform a laparoscopic BSO	0	4.6	23	46	24.1	2.3
Can independently perform a LEEP	0	1.1	9.2	40.2	40.2	9.2
Can independently perform lysis of adhesions	2.3	12.6	26.4	36.8	21.8	0
Can take general gynecology call with rare need for assistance with cases	2.3	11.5	18.4	21.8	25.3	20.7
Provides all postoperative care	2.3	21.8	25.3	34.5	16.1	0
Can perform advanced cases independently by the end of the first clinical year	4.6	24.1	26.4	34.5	10.3	0
Can practice independently by the end of fellowship	0	1.1	6.9	29.9	56.3	5.7

Table 3c
Psychomotor ability domain responses.

Abbreviated query	Strongly disagree, %	Disagree, %	Agree, %	Strongly agree, %
Able to control bleeding	1.1	39.1	54	5.7
Proficient in recognition of anatomy and anatomic tissue planes	2.3	37.9	51.7	8
Proficient in dissection of tissue planes	2.3	55.2	39.1	3.4
Proficient in safe manipulation of tissue	3.4	27.6	64.4	4.6
Proficient in appropriate use of energy devices	1.1	25.3	64.4	9.2

Discussion

Obstetrics and gynecology residency programs are faced with a growing number of challenges to effective training as a result of duty hour restrictions, required proficiency in a variety of new surgical techniques, and rapid advances in medical research. Taken altogether, these changes test the traditional four-year limit placed on residency training. In recent years the application rates for Ob/Gyn fellowships have grown substantially, potentially reflecting the increasing shortcomings of residency (Gerber and Lo Sasso, 2006). These shortcomings are highlighted by the results of our survey, which found several areas where the fellowship faculty perceive that a large proportion of graduating residents are in need of remedial training, including surgical skills, management of critically ill patients, and ability to conduct research.

The results of this study reflecting the skills of trainees entering gynecologic oncology fellowships have several important implications. It is of a great concern that only 51% of the respondents strongly agreed or agreed that their incoming gynecologic oncology fellows could independently perform a hysterectomy. This was consistent with the overall perception of the surgical abilities of incoming fellows, with weaknesses ranging from anatomy recognition to tissue dissection. Additionally, incoming fellows were reported to be unable to safely recognize and

manage critically ill patients. The only domain in which incoming fellows met expectations was in the professionalism of their interactions with patients, co-workers, and staff.

The results of this survey of the gynecologic oncology faculty are very similar to the findings of our general surgery colleagues. Both studies show significant deficiencies in the preparedness of residents for advanced surgical training. A key difference between the findings from the ACS survey and ours is that the majority of our respondents reported that incoming fellows were intellectually curious and motivated to advance the science of the field whereas surgical fellows were reported to be generally uninterested in academic pursuits. This is perhaps a reflection of the protected research year built into gynecologic oncology fellowships and the associated self-selection of fellows.

Our results, while concerning, offer a pathway to ameliorating these critical deficiencies. Discussion is already under way about the advantages of “tracking” residents midway through training who are planning to pursue a fellowship in gynecologic specialties so that they can focus more on the surgical aspects of our field. These residents could spend a greater portion of their training on gynecologic and surgical services to better hone their skills in the operating room and in the management of critically ill patients. Unfortunately, this strategy would benefit only those who are planning to pursue a surgical fellowship

Table 3d
Clinical evaluation and management domain responses.

Abbreviated query	Strongly disagree, %	Disagree, %	Neutral, %	Agree, %	Strongly agree, %
Understands pathophysiology of disease	0	13.8	32.2	46	8
Understands treatment options and indications for surgery	1.1	18.4	28.7	44.8	6.9
Performs initial outpatient evaluation	0	4.6	16.1	57.5	21.8
Counsels patients regarding differential and recommendations	4.6	12.6	27.6	46	9.2
Understands indications for surgery and appropriate work-up	1.1	11.5	20.7	50.6	16.1
Understands treatment alternatives and areas of controversy	4.6	21.8	27.6	37.9	8
Proficient in postoperative care	0	9.2	18.4	50.6	21.8
Recognizes complications early	2.3	13.8	27.6	46	10.3
Initiates appropriate investigations and responds with appropriate interventions	0	9.2	31	46	13.8
Demonstrates appropriate postoperative care recommendations relevant to disease, including surveillance	0	6.9	24.1	56.3	12.6
Recognizes decompensating patients, transfers to appropriate level of care, and clearly communicates to the faculty member	2.3	12.6	33.3	37.9	13.8

Table 3e
Academia and scholarship domain responses.

Abbreviated query	Strongly disagree, %	Disagree, %	Neutral, %	Agree, %	Strongly agree, %
Interested in academic projects	0	7	20.9	51.2	20.9
Curious about the underlying mechanisms of disease	0	4.7	10.5	60.5	24.4
Motivated to advance science of field	1.2	11.6	23.3	46.5	17.4
Familiar with recent publications in the field	1.2	16.3	37.2	36	9.3
Displays initiative in conducting research	1.2	11.6	29.1	41.9	16.3
Eager to meet deadlines for academic projects	2.3	15.1	29.1	38.4	15.1
Able to compile and analyze data	2.3	10.5	41.9	32.6	12.8
Able to present salient findings of a study	1.2	10.5	23.3	51.2	14
Understands research protocol design	1.2	16.3	36	39.5	7
Understands basic statistical analysis	3.5	22.1	27.9	37.2	9.3
Understands components of abstract and manuscript	3.5	15.1	32.6	31.4	17.4
Can write a cohesive manuscript	4.7	24.4	36	22.1	12.8

such as gynecologic oncology or urogynecology. Alternatively, many residency programs are developing metrics that residents must meet before progressing onto the next year of training (knot tying, performance during laparoscopy, etc.), and these may need to be adopted globally in order to train residents to be competent surgeons. This approach is based on the idea of competency-based training, which allows residents to progress at their own pace and graduate only after they

prove that they are capable physicians, regardless of how long that takes (Long, 2000).

In an attempt to provide more comprehensive experiences to residents, the FIRST Trial is currently investigating whether a relaxation of the recent duty hour restrictions will have a significant effect on patient outcomes (Bilimoria, 2014). Resident and program director perceptions and patient morbidity and mortality are the primary end points. The

Table 4
Themes identified in open-ended responses by domain queried.

Domain
Themes with illustrative quotes
Professionalism
Lack of patient ownership (16/36 responses = 44%)
“There has been a decrease in the ownership that fellows feel toward patients; many times they come to the OR expecting to ‘do the surgery’ without knowing the history of the surgical technique needed to do the case.”
“As a general rule, incoming fellows do not take ownership of the patients, do not actively oversee their care or follow-up with junior house staff to ensure that the work of the day gets done. They have minimal clinic experience, often do not see the patients that they operate on in the preoperative or postoperative setting, and as such, seem unprepared in the OR.”
“There seems to be much less dedication to making sure they know the surgical cases extremely well and also in preparing for cases. Get sense that they just show up and expect to be told everything.”
“Significantly diminished level of commitment. Not detail or goal oriented. Demonstrate expectation of entitlement”
“Too much focus on the technical aspects of the surgery and too little investment in preoperative evaluation and communication with patient and family”
Level of independence/graduated responsibility
Need to make up for deficiencies in residency training (16/28 responses = 57%)
“I am surprised at the length of time it takes fellows to independently perform a hysterectomy without calling me in for help. This is usually about a year.”
“It has fallen tremendously over the last 10 years. I honestly cannot leave them alone for the first 6 months for really ANYTHING other than the most simple things like a LEEP/CONE, opening or closing.”
“In general the fellows come in less comfortable with anything but very simple abdominal or laparoscopic cases. Vaginal surgery is uniformly poor.”
“Incoming clinical fellows, in my experience, come from residency woefully prepared for the operating room. Their surgical skills are lacking — no systemic approach to the case, minimal ability to articulate a surgical plan, poor knot tying skills, no ability with vaginal surgery, poor anatomical knowledge, no adaptability in the OR, and poor tissue handling skills.”
“Over the past 20 years I have seen a trend that reflects the 80 hour work week. Fellows are not as knowledgeable about patient care issues, gynecologic cancer in general, not as comfortable making independent decisions and taking ownership, and not as proficient in the OR.”
Psychomotor ability
Lacking in basic surgical skills (8/19 responses = 42%)
“Just a lack of surgical experience... many cannot perform a hysterectomy autonomously; this is consistent with the entire gyn field, unfortunately.”
“Basic surgical skills are often lacking and it is clear that residents are mostly watching and not doing surgery.”
“Most of our incoming fellows need multiple reps to efficiently dissect the retroperitoneal planes in open, laparoscopic and robotic cases. This is a skill that is apparently not really emphasized in general OB/Gyn programs.”
Unable to identify normal anatomic structures (4/19 responses = 21%)
“Retroperitoneal structure identification is lacking in incoming fellows; most cannot find the ureter independently at the start of clinical fellowship.”
“Seeing planes and understanding normal anatomic planes in the abdomen is uniformly poor but I don’t perceive a change in this. Knowledge of retroperitoneal and upper anatomy is poor. Non-traumatic tissue handling is generally poor.”
“There is simply a lack of anatomic training in residencies and incoming fellows are often at a loss to describe important anatomy and expected variations. They are often in the wrong planes. There is simply a lack of adequate training in proper surgical basics and technique in majority of residencies.”
Clinical evaluation and management
Inability to identify/care for the critically ill patient (6/16 responses = 37%)
“Through the years, we have noted that fellows present with less and less knowledge of acute issues and critical care.”
“If it is routine, they get it. If the patient is sick, unusual presentation, early sepsis, they will miss it about 100% of the time.”
“Most have very little experience in critical care or ‘pre-critical’ care management. No experience in the management of common surgical complications or management of complex patients (big surgery and comorbid conditions)”
“We used to have fellows manage our critically ill patients but it is now unsafe.”
Academia and scholarship
Deficiency in research project design, statistical analysis, and manuscript preparation (8/16 responses = 50%)
“Most fellows are not capable of writing a basic abstract or paper at the start of their fellowship. The is a strong decrement in the interest in research pursuits.”
“There is a disconnect between statistical analysis, statistical programs, and ability to crunch numbers. It is only getting worse.”
“There is simply no training in basic biostats, trial design, or manuscript preparation in residency. Across the board, incoming fellows are fully deficient in this aspect.”
“... It is also apparent that most have not had good exposure to critical analysis of clinical studies, trial design or statistics during their residency.”

results from the FIRST Trial may have important implications for future resident training and may lead to more proficient graduating residents.

The strengths of our study include its use of a modified validated survey instrument, its comprehensive nature in assessing multiple domains of surgical training, and the 61% response rate of program directors. The weaknesses of this study are common to most survey-based study designs and include the lack of a comparison group, subjectivity of responses and comments, and recall bias. Additionally, the 60% of gynecologic oncologists who did not respond represents a substantial portion of experts whose opinions are not reflected in these results.

In conclusion, this study shows that many incoming fellows are perceived to be inadequately prepared for training in gynecologic oncology. These data should stimulate a further examination of the manner in which residents are surgically trained and can help identify areas of focus for future changes in the program structure. Such changes may be necessary to produce graduates who are capable of functioning effectively in the operating room, whether they choose to enter general practice or pursue advanced training in a gynecologic oncology fellowship program.

Conflict of interest

The authors declare that there are no conflicts of interest.

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