

SHORT COMMUNICATION

A lack of standardization across urology fellowship program websites is hurting applicants

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Abstract

Background: As senior urology residents explore potential fellowship opportunities, they often turn to the official websites of accredited fellowship programs. However, the information available on these websites is often inconsistent and lacking.

Methods: The list of accredited fellowship programs on each subspecialty society's official website was utilized to document all available programs (i.e., Endourological Society—EUS; Society of Genitourinary Reconstructive Surgeons—GURS; Male Infertility/Andrology—MIA; Societies for Pediatric Urology—SPU; Society of Urodynamics, Female Pelvic Medicine and Urogenital Reconstruction—SUFU; Society of Urologic Oncology—SUO). Fifteen pre-specified factors were assessed on each of the websites in September 2024. χ^2 tests and z-scores were calculated.

Results: There were 140 total fellowship training programs. Information on research opportunities and current faculty profiles was widely available (both 88.6% overall). However, information pertaining to wellness initiatives (7.1% overall) and salary/benefits (13.6% overall) were not commonly included. SUO and SPU programs were more likely to feature information about research opportunities than SUFU and GURS programs. SPU websites were more likely than all others to feature information regarding training sites. Additionally, SUO websites were more likely to contain profiles on current fellows than all but SUFU websites.

Conclusion: A significant lack of standardization exists among both various urology subspecialties' websites and the websites of individual programs within a single subspecialty. Standardization of these websites would allow applicants to make better, more informed decisions regarding where to complete fellowship training.

KEYWORDS

clinical research, education, fellowship, health services research, training, urology, websites

Jordan L. Mendelson and Parth Joshi are co-first authors.

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1 | INTRODUCTION

With approximate one-third of graduating US/Canadian urology chief residents applying for fellowships annually, the availability of accessible, high-quality information online about individual programs has become ever more important^[1]. Fellowship websites often serve as an introduction for prospective applicants to a specific fellowship program, ideally providing insight into the program culture, expectations, and opportunities. Despite their potentially critical role in the decision-making process, studies suggest that official fellowship program websites frequently omit key content, thereby limiting their usefulness to applicants.

Joshi et al. evaluated 25 US ACGME-accredited Infertility and Sexual Medicine fellowship websites to evaluate the transparency of information provided to applicants in a particular subspecialty^[2]. The study found notable discrepancies in the information provided across various fellowship programs' websites. While most included details on faculty profiles (96.3%) and research opportunities (92.6%), there was a relative dearth of information on wellness initiatives—with only one program including such information. Additionally, only 14.8% of fellowship programs provided information on expected case volume during fellowship, and only 7.4% listed relevant salary/benefits.

This study highlighted a clear lack of standardization across Infertility and Sexual Medicine fellowship program websites. The lack of standardization and key missing information on specific fellowship programs' websites may both compromise an applicant's ability to make a fully informed decision regarding where to pursue fellowship training and force applicants to utilize time that could otherwise be spent getting to know faculty and current fellows during interviews to instead find out relatively basic information about the program. The objective of this study was to expand upon our previous study and analyze websites within each subspecialty of urology with regards to transparency and standardization of information that an applicant may find useful.

2 | MATERIALS AND METHODS

This project was deemed to be Institutional Review Board-exempt as per our institutional policy and protocol. The list of urology fellowship programs on each subspecialty society's official website was utilized to document each of the available fellowship programs (i.e., Endourological Society—EUS; Society of Genitourinary Reconstructive Surgeons—GURS; Male Infertility/Andrology—MIA; Societies for Pediatric Urology—SPU; Society of Urodynamics, Female Pelvic Medicine and Urogenital Reconstruction—SUFU; Society of Urologic Oncology—SUO). Each of the respective

fellowship program websites was then accessed by one of two individuals on the same day to reduce variability. Fifteen pre-specified factors were assessed on each of the websites as outlined in Table 1 on the same day in September 2024. Chi-square tests and z-scores were then calculated to determine relationships between various factors and specific subspecialties. Of note, in order to ensure data collection would be completed in a single day so as to reduce potential bias, the two individuals each collected these data separately: individual A collected data pertaining to the fellowship program websites belonging to SPU, SUFU, and SUO, while individual B collected data pertaining to the fellowship program websites belonging to EUS, GURS, and MIA. Prior to data collection, these two individuals discussed at length the criteria to judge each of the 15 pre-specific factors being assessed as either present or not present on the fellowship program websites. If there was any confusion regarding a specific factor on a specific fellowship program website, the two individuals would discuss and come to a uniform agreement. As a result of these split responsibilities, an assessment of inter-rater reliability was not feasible within this study.

3 | RESULTS

There were 140 total urology fellowship training programs (17 EUS, 26 GURS, 16 MIA, 27 SPU, 17 SUFU, and 37 SUO). Information on both research opportunities and current faculty profiles was widely available (both 88.6% overall). However, critical information such as that pertaining to wellness initiatives (7.1% overall), salary/benefits (13.6% overall), and case volume (36.4% overall) were not commonly included across all of the subspecialties' fellowship program websites. These results sometimes differed between subspecialties; for example, SUO and SPU programs were more likely to feature information about research opportunities than SUFU and GURS programs (all $p \leq 0.01$). SPU websites were more likely than all other subspecialties' websites to feature information regarding various training sites (all $p < 0.01$). Additionally, SUO websites were more likely to contain profiles on current fellows than all but SUFU websites ($p \leq 0.03$). All of the results are summarized in Table 1 and schematically represented in Figure 1. Of note, the p -values listed in Table 1 refer to the values related to the initial χ^2 tests. Table 2 demonstrates the specific z-scores directly comparing the results of two specific subspecialty societies.

4 | DISCUSSION

To our knowledge, this is the first study that specifically analyzes urologic subspecialty fellowship program websites in the United States. Official subspecialty

TABLE 1 Summary of results broken down by subspecialty.

	EUS (n = 17) ^a	GURS (n = 26)	MIA (n = 16)	SPU (n = 27)	SUFU (n = 17)	SUO (n = 37)	Total (n = 140)	p-value
Research opportunities	16 (94.1%)	18 (69.2%)	15 (93.8%)	26 (96.3%)	12 (70.6%)	37 (100.0%)	124 (88.6%)	< 0.001
Wellness initiatives	1 (5.9%)	4 (15.4%)	1 (6.3%)	2 (7.4%)	1 (5.9%)	1 (2.7%)	10 (7.1%)	0.569
Training sites	5 (29.4%)	14 (53.9%)	9 (56.3%)	25 (92.6%)	9 (52.9%)	14 (37.8%)	76 (54.3%)	< 0.001
Rotation schedule	4 (23.5%)	5 (19.2%)	1 (6.3%)	12 (44.4%)	9 (52.9%)	11 (29.7%)	42 (30.0%)	0.023
Call responsibilities	3 (17.7%)	7 (26.9%)	2 (12.5%)	12 (44.4%)	2 (11.8%)	10 (27.0%)	36 (25.7%)	0.118
Didactic schedule	5 (29.4%)	7 (26.9%)	6 (37.5%)	15 (55.6%)	7 (41.2%)	13 (35.1%)	53 (37.9%)	0.344
Fellow clinic	1 (5.9%)	6 (23.1%)	3 (18.8%)	11 (40.7%)	2 (11.8%)	12 (32.4%)	35 (25.0%)	0.077
Requirement to educate juniors	4 (23.5%)	10 (38.5%)	5 (31.3%)	14 (51.9%)	2 (11.8%)	12 (32.4%)	47 (33.6%)	0.118
Current fellow profiles	3 (17.7%)	8 (30.8%)	4 (25.0%)	9 (33.3%)	9 (52.9%)	23 (62.2%)	56 (40.0%)	0.009
Current faculty profiles	16 (94.1%)	21 (80.8%)	16 (100.0%)	27 (100.0%)	15 (88.2%)	29 (78.4%)	124 (88.6%)	0.044
Alumni profiles	4 (23.5%)	10 (38.5%)	3 (18.8%)	12 (44.4%)	7 (41.2%)	18 (48.7%)	54 (38.6%)	0.278
Case volume	9 (52.9%)	9 (34.6%)	3 (18.8%)	16 (59.3%)	3 (17.7%)	11 (29.7%)	51 (36.4%)	0.018
Salary/benefits	2 (11.8%)	5 (19.2%)	0 (0.0%)	2 (7.4%)	3 (17.7%)	7 (18.9%)	19 (13.6%)	0.382
City/living experience/cost of living	4 (23.5%)	7 (26.9%)	2 (12.5%)	7 (25.9%)	2 (11.8%)	11 (29.7%)	33 (23.6%)	0.634
Letter of recommendation requirement	6 (35.3%)	17 (65.4%)	9 (56.3%)	14 (51.9%)	5 (29.4%)	18 (48.7%)	69 (49.3%)	0.213

Note: Red denotes < 25.0%; green denotes > 75.0%.

Abbreviations: EUS, Endourological Society; GURS, Society of Genitourinary Reconstructive Surgeons; MIA, Male Infertility/Andrology; SPU, Societies for Pediatric Urology; SUFU, Society of Urodynamics, Female Pelvic Medicine and Urogenital Reconstruction; SUO, Society of Urologic Oncology.

^aUniv. South Carolina—Prisma Health does not have an official fellowship website for EUS.

fellowship program websites play a crucial role in the decision-making process for fellowship applicants, often serving as an applicant's introduction to a specific fellowship program. A study of orthopedic trauma fellowship programs showed that websites are used by applicants more than online reviews or message boards^[3]. Aside from mere geographical location, applicants often access these websites to glean pertinent information about what their roles and responsibilities may be at various institutions. There remains a significant lack of standardization amongst these fellowship program websites—both across subspecialty organizations and between individual training programs within a given subspecialty. This issue is certainly not unique to urology fellowship programs.

Similar studies have been conducted across various other fellowship programs within other specialties, including but not limited to: pain medicine, pediatric otolaryngology, burn care, hematology and oncology (HO), surgical oncology, urogynecology, and colorectal surgery^[4–10]. Across all of these specialties, most prior studies found that the fellowship program websites were not comprehensive and rather lacked pertinent

information, similar to the results of this study. For example, an analysis of 156 HO fellowship program websites revealed that < 20% of programs had a comprehensive website^[7]. Somewhat similarly, an analysis of 63 colorectal surgery fellowship program websites found that five of the programs did not even have a functional website. The authors searched the functioning fellowship program websites for factors of interest, such as current faculty and residents, alumni, and training information, and they found that only a quarter of the content items evaluated were included by at least half of the fellowship programs^[10]. Jain et al. similarly analyzed 65 North American urogynecology fellowship program websites using 72 standardized criteria^[8]. They found that, on average, US fellowship programs included only 46% of the pre-determined content criteria. In this analysis, wellness information was the most frequently included category, while information pertaining to career planning, clinical work expectations, and benefits was severely lacking.

The results of this current study are consistent with prior, similar studies. In this study, all subspecialties' fellowship programs excelled at presenting information regarding research opportunities and faculty profiles (both

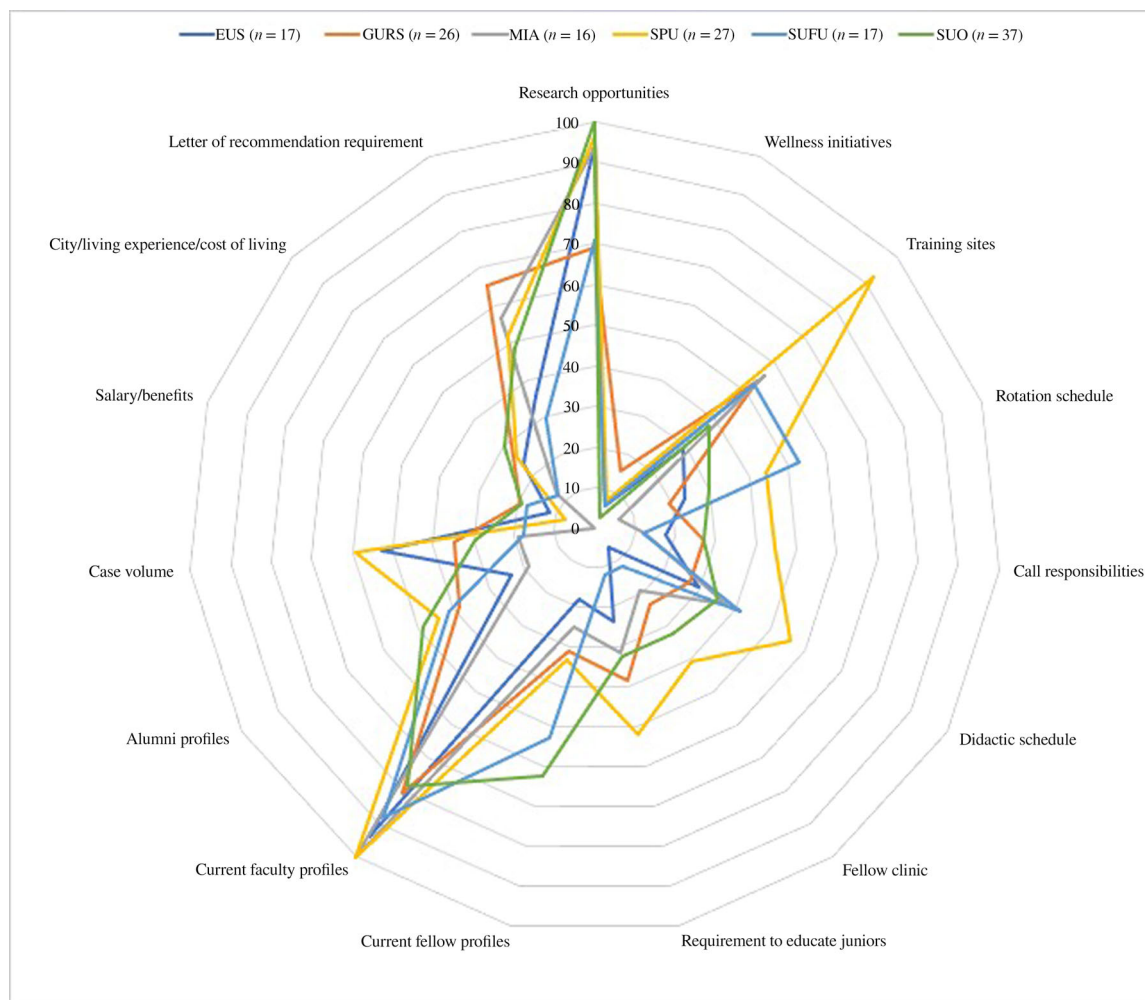


FIGURE 1 Radar schematic of results broken down by subspecialty. EUS, Endourological Society; GURS, Society of Genitourinary Reconstructive Surgeons; MIA, Male Infertility/Andrology; SPU, Societies for Pediatric Urology; SUFU, Society of Urodynamics, Female Pelvic Medicine and Urogenital Reconstruction; SUO, Society of Urologic Oncology.

88.6% overall) on their websites. In contrast, there was a severe lack of other critical information across all subspecialties' fellowship program websites, such as that pertaining to wellness initiatives (7.1% overall), salary/benefits (13.6% overall), and case volume (36.4% overall). Interestingly, we did find that some subspecialties fared better in certain categories than other subspecialties. For example, SPU fellowship program websites were more likely than all other subspecialties' websites to feature information regarding various training sites (all $p < 0.01$). Additionally, SUO fellowship program websites were more likely to contain profiles on current fellows than all but SUFU fellowship program websites (all $p \leq 0.03$).

We believe that this lack of standardization places both applicants and respective fellowship programs at a disadvantage. For applicants, standardized information—and additional information—can help make an educated decision about a particular fellowship program and, more broadly, a rank list. Applicants may prioritize various factors of a fellowship program, so more comprehensive, standardized information can be extremely helpful

throughout one's application process. For example, an applicant applying for an MIA fellowship with an interest in performing vasovasostomy in his/her future practice may prioritize fellowship programs that still perform these cases in high volumes, as there has been noted to be a decrease in the number of these procedures being performed nationwide^[11]. Furthermore, the demonstrated inconsistency between various fellowship programs' official websites may simply lead to confusion among applicants; directly comparing two fellowship programs becomes significantly more difficult, for example, if only one program has readily accessible information regarding salary, call responsibilities, and research opportunities. Furthermore, an insufficient fellowship program website lacking critical information can affect the ability of a specific program to recruit applicants as well. Previous studies have shown that official fellowship program websites play a major role in applicants' decision making^[12,13]. Fellowship applicants commonly reach out to alumni of specific programs to gather additional information about the training received at a particular program. Lack of information on a fellowship

TABLE 2 z-scores demonstrating results when directly comparing subspecialties.

#1	#2	Research opportunities	Training sites	Rotation schedule	Fellow profiles	Faculty profiles	Case volume
SUO	SUFU	0.00054	x	x	x	x	x
SUO	SPU	x	< 0.00001	x	0.0226	0.00988	0.01828
SUO	MIA	x	x	x	0.01314	0.04338	x
SUO	GURS	0.0003	x	x	0.01428	x	x
SUO	EUS	x	x	x	0.00236	x	x
SUFU	SPU	0.01552	0.00222	x	x	x	0.00672
SUFU	MIA	x	x	0.0035	x	x	x
SUFU	GURS	x	x	0.02088	x	x	x
SUFU	EUS	x	x	x	0.03156	x	0.03156
SPU	MIA	x	0.00466	0.0083	x	x	0.0096
SPU	GURS	0.0088	0.00138	0.04884	x	0.01684	x
SPU	EUS	x	< 0.00001	x	x	x	x
MIA	GURS	x	x	x	x	x	x
MIA	EUS	x	x	x	x	x	0.04136
GURS	EUS	x	x	x	x	x	x

Abbreviations: EUS, Endourological Society; GURS, Society of Genitourinary Reconstructive Surgeons; MIA, Male Infertility/Andrology; SPU, Societies for Pediatric Urology; SUFU, Society of Urodynamics, Female Pelvic Medicine and Urogenital Reconstruction; SUO, Society of Urologic Oncology; x, a z-score > 0.05 and therefore a result that is statistically insignificant.

program website regarding program alumni makes this process significantly more difficult. For all of these reasons, improving transparency and standardization across fellowship program websites would benefit both applicants and fellowship programs.

Though the lack of standardization across fellowship program websites appears to be widespread across multiple specialties, there appears to be some initial momentum to attempt to improve this. One potential solution may involve fellowship programs directly eliciting information from program interviewees in order to identify gaps in the content of the fellowship program's website. This was the approach utilized by the cardiothoracic surgery fellowship program at the University of Texas MD Anderson Cancer Center and The University of Texas McGovern Medical School in Houston, Texas, USA^[14]. The program collected information from 49 of its interviewees and used it to amend the program's official fellowship website to include additional pertinent information, such as that related to rotation schedules, current fellow profiles, and faculty profiles. The authors demonstrated that there was subsequently a significant improvement in interviewees' perceptions of the fellowship program's website. This approach could be fairly easily implemented by other individual fellowship programs, as it requires very little up-front financial cost and time; the anonymized surveys could even be given to interviewees as part of routine post-interview emails. Another potential avenue for improvement and

standardization is to create a standardized fellowship program website template approved by the respective fellowship's society. For example, the SUO could collect its own data regarding what specific information prior and current applicants would like included on individual SUO fellowship programs' websites and then create a set of guidelines and criteria that each individual fellowship program's website must adhere to. This, too, would be a cost-effective approach and may lead to a significantly improved applicant experience with minimal financial investment, as suggested by a review of cosmetic dermatology fellowship program websites^[15]. Though it is unclear as to exactly why these inconsistencies exist among the various urologic subspecialty fellowship program websites, it is likely due to a lack of unified guidance from governing bodies. Therefore, standardized fellowship program website templates created by the respective fellowships' societies—or even one comprehensive template created by the American Urological Association for all subspecialties to adhere to—would likely greatly improve these discrepancies. Our analysis herein specifically identified that information regarding rotation schedules, call schedules, salary/benefits, and case volume could—and likely should—be more widely presented by various urologic subspecialty programs' websites. Of note, there are no federal laws in the United States prohibiting fellowship training programs from disclosing information pertaining to salary/benefits on their websites; in fact, in large swaths of the country,

there are laws that require salary transparency across all fields.

There are several limitations to this study. Though this is a recreation of studies executed in several other specialties, each of these studies may differ slightly in both its selection of specific fellowship program website search criteria and in its subsequent interpretation of the results. Additionally, all of these fellowship program websites were accessed on a single day and therefore represent one specific moment in time; websites may have been updated and/or improved since that time.

5 | CONCLUSIONS

Across all urology fellowship training programs, a significant lack of standardization exists among both various subspecialties' fellowship program websites and the websites of individual fellowship programs within a single subspecialty. By improving the transparency and standardization of these websites, fellowship applicants would be better equipped to directly compare competing opportunities and make better, more informed decisions regarding where to complete fellowship training. Regularly updated, standardized fellowship program websites would undoubtedly improve an applicant's fellowship application experience.

AUTHOR CONTRIBUTIONS

Jordan L. Mendelson, Parth Joshi, Joo Lee, Daniel S. Rittenberg, Jordan S. Gitlin, and Richard A. Schoor participated in the study conceptualization. Jordan L. Mendelson, Parth Joshi, Joo Lee, Katharine Hodgen, Phillip A. Westbrook, Megan Ngai, Jordan Kassab, Diego R. Álvarez Vega, Nikhil Anandpura, Claudia Méndez-Serrano, and Kaylee Bressler all participated in the data curation. Megan Ngai, Claudia Méndez-Serrano, and Kaylee Bressler participated in formal analysis. Jordan L. Mendelson, Parth Joshi, Nikhil Anandpura, and Richard A. Schoor participated in the writing of the original draft. Jordan L. Mendelson, Parth Joshi, Joo Lee, Katharine Hodgen, Phillip A. Westbrook, Megan Ngai, Jordan Kassab, Diego R. Álvarez Vega, Daniel S. Rittenberg, Jordan S. Gitlin, and Richard A. Schoor participated in the review and editing of this manuscript. Daniel S. Rittenberg, Jordan S. Gitlin, and Richard A. Schoor participated in the supervision of this project.

CONFLICT OF INTEREST STATEMENT

The authors declare no conflicts of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

ETHICS STATEMENT

This study was deemed to be IRB-exempt by the primary author's named institution.

DECLARATION OF GENERATIVE AI AND AI-ASSISTED TECHNOLOGIES IN THE WRITING PROCESS

The authors did not use generative AI or AI-assisted technologies in the development of this manuscript.

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