



Perceived influence of medical school sexual health education on specialty selection in young urologists specializing in sexual dysfunction

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Background: To determine effects of sexual health curriculum (SHC) in medical school and mentorship on future specialty/subspecialty selection, we sought to evaluate the experiences of urology trainees and practicing urologists.

Methods: Residents, fellows, and practicing urologists completed a 15-question survey regarding their exposure to a SHC during medical school, topics covered, and the influence of mentors in their career choice. Summary statistics were used to identify trends based on survey responses.

Results: Ninety-four respondents, primarily post-graduate training year 4 and 5 (46%), completed the survey. Approximately 50% recalled a dedicated SHC during medical school with 46% planning to pursue fellowship training in sexual medicine/reconstruction. Topics commonly covered included reproductive anatomy/physiology and sexual history-taking, while respondents rarely recalled topics such as sexual aids/toys and pornography. Only 25% felt their SHC provided an adequate fund of knowledge to address sexual health concerns in patients, and only 14% felt that exposure to a SHC influenced their decision to pursue urology. Individuals intending to pursue fellowship were more likely to have an attending mentor, a mentor with expertise in sexual dysfunction, and considered their mentor as important or very important in their decision to subspecialize ($P < 0.05$).

Conclusions: Most urology trainees do not have strong exposure to a SHC during medical school and cite mentorship as a more important role in the decision to pursue subspecialty training. These data support the need for a standardized formal SHC and continued exposure to sexual health experts during training to ensure continued interest in sexual medicine/reconstruction fellowship.

Keywords: Sexual health curriculum (SHC); mentorship; fellowship; education

Submitted Nov 30, 2022. Accepted for publication Jun 13, 2023. Published online Jul 03, 2023.

doi: 10.21037/tau-22-793

View this article at: <https://dx.doi.org/10.21037/tau-22-793>

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Introduction

The World Health Organization defines sexual health as “a state of physical, emotional, mental, and social well-being...not merely the absence of disease, dysfunction, or infirmity” (1-7). It is clear that sexual health is an important component of overall quality of life. That said, 40–50% of cisgender women (genetically XX individuals who identify as females), irrespective of age, experience sexual dysfunction (5). Prevalence estimates for sexual dysfunction in cisgender men (genetically XY individuals who identify as males) are less clear due to wide variations in clinical definitions, study populations, and study designs; however, studies have shown rates of sexual dysfunction in men as high as 31% (6,8). Sexual dysfunction in and of itself has even been shown to increase emotional distress (9-11). On the other hand, other health concerns, such as cardiac, gastrointestinal, and dermatologic conditions are often associated with impaired sexual well-being, which is frequently overlooked (11-15).

Sexual health and sexual dysfunction are sensitive subjects for most patients to discuss and, beyond content expertise, clinicians must possess the skills to broach these topics with care and respect for their patients. Many patients are interested in having discussions with their physicians regarding sexual health, yet few engage in these conversations. A study by Agochukwu-Mmonu *et al.* found that many conversations on sexuality and sexual health are actually initiated by the patient (16). Discussions regarding

sexual health may be just as difficult for physicians to engage in. Healthcare workers often cite a lack of knowledge as the most common reason to avoid these conversations, and most clinicians desire additional training on sexual health (17). Potential barriers to discussion of sexual health may include expecting the patient to initiate the conversation, feelings of shame and discomfort discussing these issues from the viewpoint of both patients and physicians, and fear of offending patients by initiating this conversation (18).

For many physicians, sexual health education begins (and possibly ends) in medical school. It is estimated that only 55% of United States medical schools have any formal sexual health curricula that exceeds 3 hours of dedicated instruction (19). Among the schools that do provide dedicated curricula, there is marked heterogeneity in the content that is taught. Even in those who received some degree of formalized education, most physician trainees feel ill-prepared to care for their patients' sexual health needs (20).

The axiom that urologists should be content experts in sexual health is based on our medical and surgical expertise in the genitourinary systems. Sexual dysfunction is undoubtedly an important aspect of urologic care. The practicing general urologist will regularly encounter conditions such as erectile dysfunction, Peyronie's disease, and sexually transmitted infections. However, even as presumed experts, many urologists and urology trainees feel underprepared to adequately address sexual health in our own patients (1-3). Given that sexual health is such an important aspect of urologic care, particularly in those who elect to pursue fellowship in sexual dysfunction or andrology, we sought to evaluate the experience and impact of sexual health education and curricula in medical school amongst current and recent urology trainees. We hypothesized that those who elected to pursue subspecialty training in sexual health would report greater exposure to sexual health education during medical school and put more emphasis on this education as a contributing factor in the decisions to pursue subspecialization. We present this article in accordance with the STROBE reporting checklist (available at <https://tau.amegroups.com/article/view/10.21037/tau-22-793/rc>).

Methods

Survey

After receiving institutional review board exemption, our research team developed a 15-question survey to evaluate

Highlight box

Key findings

- Most urology trainees and young faculty do not have strong exposure to sexual health curricula (SHC) during medical school and do not feel comfortable addressing patient sexual health concerns based on the curricula alone.
- Mentors with experience in sexual health are more influential in impacting career choices than medical school curricula.

What is known and what is new?

- Sexual health is a sensitive subject for most patients and clinicians must possess the skills to breach these topics with care.
- This manuscript assesses the impact of SHC during medical school amongst urology trainees.

What is the implication, and what should change now?

- Due to the variations in SHC and subjective dearth of training, a more robust and formalized SHC is needed.
- Increased exposure to sexual health experts is also needed to ensure ongoing interest in subspecialization amongst residents.

sexual health training exposure during medical school amongst urology trainees and recent residency/fellowship graduates ([Supplemental material](#)). Specific questions were developed to evaluate the following: (I) basic demographics regarding training (year, decision to pursue fellowship in sexual health/andrology or genitourinary reconstruction), (II) exposure to sexual health subspecialty training during residency, (III) detailed questions regarding sexual health curricula during medical school training (requirements, time/duration, content), and (IV) whether the medical school SHC and/or exposure to or mentorship from a subspecialist in sexual medicine contributed to the decision to pursue urology and/or subspecialty training (if applicable).

The anonymous survey was initially administered to resident and fellow participants at the 2019 Society of Urologic Prosthetic Surgeons (SUPS) surgical lab during the 20th Annual Fall Scientific Meeting of the Sexual Medicine Society of North America (SMSNA) in Nashville, TN. Subsequently, the survey was reviewed and approved by the SMSNA Educational Projects Committee. It was made available through the SMSNA website (<https://www.smsna.org>) from March through June 2020 to increase our sample size and make the findings more generalizable. The goal was to specifically target urology trainees and recent graduates with an interest in sexual medicine, including those currently in residency or fellowship and those within three years of completing fellowship.

The data and surveys utilized in this manuscript are original work and did not involve any direct patient contact. The study was conducted in accordance with the Declaration of Helsinki (as revised in 2013). The study was deemed exempt by the standards put forth by Mayo Clinic Institutional Review Board, given that it did not involve any patient contact and study participation by physicians was voluntary and anonymous.

Statistical analysis

Responses from the SUPS surgical lab were manually recorded in the database. Survey responses from the SMSNA database were compiled using SurveyMonkey. The survey distribution prevented duplicate responses; however incomplete surveys were present which account for the varying response rate per question. Survey responses were analyzed, and summary statistics were used to identify trends based on survey response rates. Pertinent data were summarized via means [standard deviation (SD)] and

percentages. Chi-square testing (categorical variables) was used to compare survey responses between those who were or were not pursuing fellowship training in sexual dysfunction/reconstruction. When comparing responses between groups, a P value of <0.05 was considered statistically significant.

Results

In total, 95 participants (73% male, 27% female), including 68 males and 25 females, completed the survey. Out of the 95 participants, 26 were recruited through the SUPS surgical lab. Seventy-one medical schools throughout North America were represented. Respondents included 83 current urology residents (87%), 6 current fellows (6%), and 6 attending urologists (6%) who had completed training within the past three years. The distribution of survey respondents based on year of training is shown in *Table 1*. Fifty-five percent (52/94) of survey respondents were planning to pursue a career specializing in sexual dysfunction including 45% (42/93) who planned to or had completed a fellowship in andrology, sexual dysfunction, or genitourinary reconstruction.

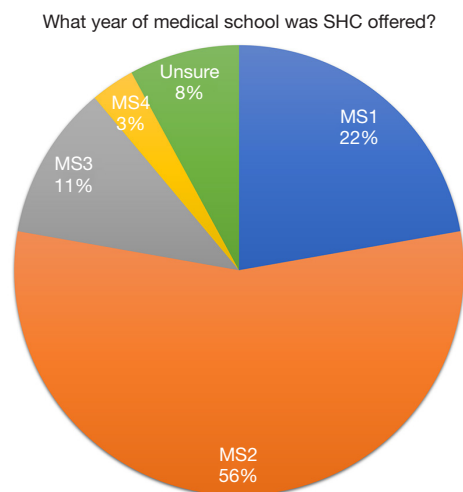
The current urology workforce consists of approximately 9.9% of practicing female urologists while 24.4% of urology residents are female (21). The survey respondent gender distribution is thus closer to the future of the urology workforce. The survey response rate from the SUPS surgical lab was 100%. While the exact survey response rate from the SMSNA survey distribution could not be determined, in June of 2020 there were approximately 190 student, resident, and fellow members in SMSNA who received the survey. We can therefore calculate an estimated response rate of 36% as 69 members responded to the survey.

Only 46/93 respondents (49%) recalled any dedicated SHC offered by their medical school. This curriculum most often took place during the second year of medical school (*Figure 1*) and in a large group setting (*Figure 2*). Total time dedicated to SHC was ≤ 10 h in 43% of cases. Topics most often included male anatomy and physiology (87%), female anatomy and physiology (84%), sexual history taking (81%), sexually transmitted infections (76%), gender and sexual orientation (65%), sexual abuse 60%, and safe sex practices (60%). Respondents rarely recalled education on topics such as sexually explicit media (9%), sexuality and religion/spirituality (16%), sexual aids/toys (17%), body image and sexual self-esteem (24%), and sexuality across the

Table 1 Demographic characteristics of participants

Variables	N (sample size)	% of total sample
Post-graduate year		
1	14	15
2	9	10
3	12	13
4	26	28
5	16	17
6	8	9
7	3	3
8+	4	5
Training level		
Resident	83	87.4
Fellow	6	6.3
Attending	6	6.3
Gender		
Male	68	73
Female	25	27
Plan to focus on sexual dysfunction in practice		
Yes	52	55.3
No	19	20.2
Unsure	23	24.5
Plans to pursue fellowship in andrology, sexual dysfunction, or GU-reconstruction		
Yes	42	45.2
No	33	35.4
Unsure	18	19.4
Faculty mentor		
Yes	79	84.0
No	12	12.8
Unsure	3	3.2
Exposure to SHC in medical school		
Yes	46	49.46
No	46	49.46
Unsure	1	1.08

GU, genitourinary; SHC, sexual health curriculum.

**Figure 1** Medical school year sexual health curriculum offered. SHC, sexual health curriculum.

lifespan (32%). Only 25% of respondents (n=23) felt that their medical school coursework provided an adequate fund of knowledge to address sexual health concerns for their patients, and only 14% (n=13) felt that exposure to SHC during medical school influenced their decision to pursue a career in urology.

Out of the 94 respondents, 78% reported that their residency training program has/had a faculty member who specialized in sexual medicine. The majority (86%) of these faculty were men. Seventy percent of survey respondents stated their mentors were important or very important in guiding their future career plans. In those who anticipated their practice to focus on sexual medicine, 67% felt that having a mentor with expertise in sexual medicine was important to their ultimate decision to pursue subspecialty training.

We compared survey responses between those who did and did not complete (or plan to complete) subspecialty training, 42 and 33 individuals respectively. We found that those pursuing fellowship were more likely to have an attending who they considered a mentor (95.2% vs. 79%, $P=0.02$) and, not surprisingly, to have a residency mentor with expertise in sexual medicine (70.7% vs. 29.3%, $P<0.001$). A mentor was also more likely to be important or very important in the decision to subspecialize (67.5% vs. 33.3%, $P=0.04$). In contrast, attending gender and medical school SHC exposure were not factors that influenced a decision to pursue urology or fellowship training. Full survey responses can be found in the

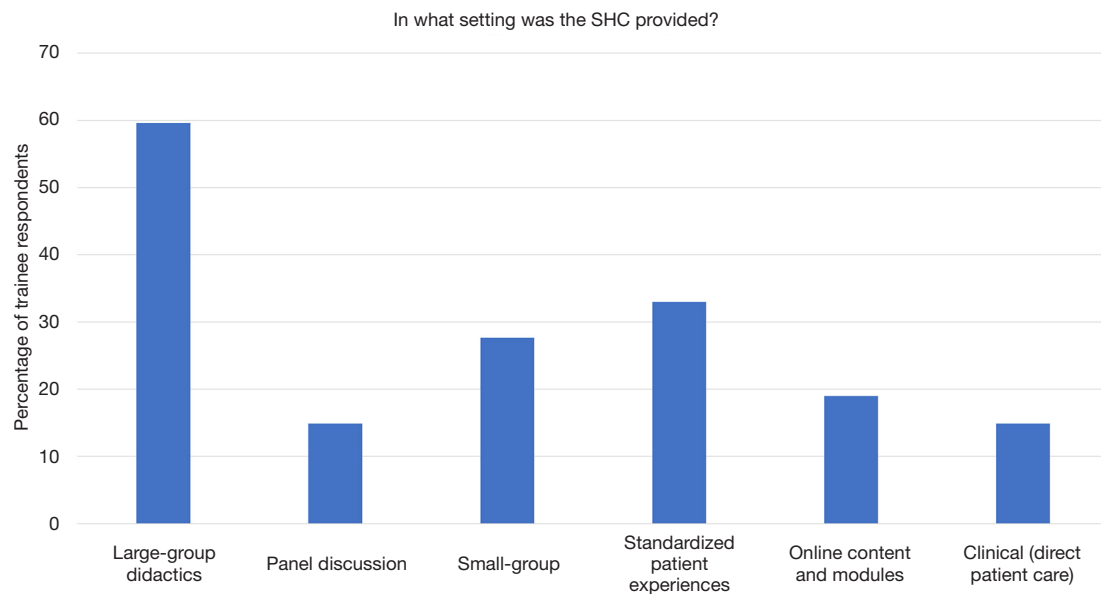


Figure 2 Setting in which SHC was provided. SHC, sexual health curriculum.

Supplementary material.

Discussion

Dedicated sexual health education is lacking in higher medical education. In our survey of urology trainees and early career attendings, we found that only about 50% could recall any dedicated sexual health curriculum during their medical school education, and 75% of survey respondents felt that their medical school training did not adequately prepare them to address sexual health concerns for their patients during subsequent training and beyond. Less than 15% felt that their sexual health education exposure in medical school had any meaningful impact on their career choices, whereas nearly 70% felt that a training faculty member with expertise in sexual medicine was influential to their career choice. This is relevant given that 55% of our respondents were intending to focus their practices on sexual health. These results suggest that, as the state of sexual health education in medical school currently stands, mentorship plays a greater role in the decision to pursue a clinical practice in sexual health compared with medical school exposures.

Even if sexual health education during medical school does not influence specialty choice, there is an expectation that physicians should have the skills to address their patients' sexual health concerns. Limited data exist regarding the influence of a SHC during medical training on patient

care. In a 2018 study where sexual health knowledge was evaluated in >1,000 medical students from various schools across the United States, Warner *et al.* found that student knowledge was highest in areas such as sexual function and dysfunction, fertility and reproduction, and sexuality across the lifespan, and lowest in sexual safety and prevention, contraception, sexual minority health, and sexuality for people living with physical or intellectual disabilities (22). Our findings are consistent with previous research of 500 fourth year medical students, which has shown that exposure to sexual health education in medical school varies widely (23). As of 2008, 44% of schools lacked any formal sexual health curriculum (23). This is in line with our findings that approximately half of current or recent urology trainees did not recall any formal SHC during medical school. These findings are particularly striking given our hypothesis that trainees within urology (with a presumably greater interest in sexual medicine) would have a higher likelihood of early exposure to sexual health education serving as a driving force behind sub-specialization without our field. It is worth noting, however, that there has been an ongoing interest in promoting adequate exposure to sexual health during medical school. For example, in 2017, Bayer *et al.* published a series of proposed sexual health competencies to promote a more standardized experience for medical students across the United States (24). These and other efforts will ensure earlier exposure, and this may ultimately influence the perceived importance of sexual

health education on career choices for physician trainees.

Given that many medical students feel ill-prepared when it comes to addressing their patients' sexual health needs, it stands to reason that future urologists must gain this expertise in their residency training. Not surprisingly, a recent study by Beebe *et al.* which evaluated 190 medical students, 75 residents, and 11 fellows in the United States, found that resident physicians in urology (and obstetrics-gynecology) were significantly more likely to feel confident in their ability to address a sexual health issue relative to physicians in other specialties (20). Despite this, up to 75% of urology residents report insufficient exposure to male sexual health and andrology/infertility during their training, which may impact trainee clinical and standardized examination performance and ultimately determine career choices such as the decision to pursue subspecialty training (1-3). Exposure to female sexual dysfunction is an even greater area of need. A recent survey study of 107 residents in Canada by Millman and colleagues found that only 22% of urology residents had any clinical exposure to female sexual dysfunction during training (4). Exposure to sexual health curriculum in other nations appears to be similarly sparse. Kristufkova *et al.* found that nearly 60% of 366 European urology trainees surveyed reported little or no training in sexual health during postgraduate training (25).

There are undoubtedly benefits to having exposure to subspecialists during training. For example, El-Arabi *et al.* found that residents at programs with fellowship-trained faculty exhibit better performance on the sexual health aspects of standardized examinations (2). As we found in the study, exposure to expert faculty and their mentorship plays a big role in the decision to subspecialize for most trainees. Specifically, we found that 70% of trainees who were intending to pursue sub-specialization in sexual function felt that expert faculty members were an important part in that decision. This is true for other specialties as well, such as in orthopedic surgery where Brook *et al.* conducted a survey of 117 individuals in the United States and found that nearly 75% of orthopedic surgery trainees reported strong mentorship as influential in their career decisions (26). In the absence of consistent exposure to and confidence with sexual health training during medical school, having subspecialist mentorship opportunities for residents should be high priority for training programs through the United States and the world.

Our study has important limitations. First, we used a non-validated survey that was created by the study authors. While multiple experts of sexual medicine reviewed the

survey content and construct, it remains non-validated. A pilot study was initially construct by only distributing the survey to the SUPS surgical lab and due to initial success, it was expanded to all SMSNA members. Second, given that our survey was administered through the SMSNA, there is an underlying presumption that survey respondents had a higher level of interest in sexual medicine compared with the general population of urology trainees. This was purposeful in that we were intentionally interested in learning more about the influence of medical school SHC exposure and interest in sexual medicine, however, these results may not accurately reflect all urology trainees. Third, due to the nature of the survey, results may be impacted by respondent recall bias, and thus may not accurately reflect experiences with SHC in medical school. Fourth, while a qualitative question was presented in the survey, the lack of responses to this open-ended question made any form of analysis impractical. Finally, while we were able to estimate a response rate, it is unclear how many of the SMSNA members responded to the surveys. The response rate could have been improved with reminders to complete the survey, post-survey communication, and survey fatigue. This is a smaller study and is underpowered so the presence of statistically significant or statistically insignificant findings may not be able to be generalized.

Despite these limitations, the current data provide important insight into the role that medical school sexual health curriculum and faculty mentorship during residency may play on the decision to subspecialize in sexual health amongst urology trainees.

Conclusions

Even though urologists are considered experts in sexual health, most urology trainees and young faculty do not have a strong exposure to sexual health curricula in medical school. Due to the paucity of educational opportunities, most trainees who participated in our study did not feel that their exposure to sexual health curricula during medical school (or lack thereof) had a meaningful influence on their decision to pursue urology, even those who choose to specialize in sexual medicine. In contrast, most trainees felt that strong mentors with expertise in sexual medicine were influential in their career choices.

A centralized sexual health curriculum with regulation and oversight is an important step in providing all medical students with the education they need to take care of patients. The curriculum should be medically,

socially, and culturally accurate while helping to promote sexual development. In addition, it may be helpful to have urologists play the role of mentor from as early on as medical school to help increase the influence of students to pursue urology. This mentorship should play an increasingly formal role in residency with designated mentoring experiences. While there is a long way to go to reform the sexual health curriculum in medical schools, the importance of medical school curriculum and the importance of mentors cannot be overstated.

Acknowledgments

The authors would like to thank the Society of Urologic Prosthetic Surgeons (SUPS) and the Sexual Medicine Society of North America (SMSNA) and the SMSNA Educational Projects committee for assistance with survey dissemination to organization members.

Funding: None.

Footnote

Reporting Checklist: The authors have completed the STROBE reporting checklist. Available at <https://tau.amegroups.com/article/view/10.21037/tau-22-793/rc>

Data Sharing Statement: Available at <https://tau.amegroups.com/article/view/10.21037/tau-22-793/dss>

Peer Review File: Available at <https://tau.amegroups.com/article/view/10.21037/tau-22-793/prf>

Conflicts of Interest: All authors have completed the ICMJE uniform disclosure form (available at <https://tau.amegroups.com/article/view/10.21037/tau-22-793/coif>). TK serves as an unpaid editorial board member of *Translational Andrology and Urology* from August 2022 to July 2024. The other authors have no conflicts of interest to declare.

Ethical Statement: The authors are accountable for all aspects of the work in ensuring the questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. The data and surveys utilized in this manuscript are original work and did not involve any direct patient contact. The study was conducted in accordance with the Declaration of Helsinki (as revised in 2013). The study was deemed exempt by the standards put forth by Mayo Clinic Institutional Review

Board, given that it did not involve any patient contact and study participation by physicians was voluntary and anonymous.

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Cite this article as: Parikh N, Aro-Lambo M, Vencill JA, Collins CS, Helo S, Kohler T, Ziegelmann M. Perceived influence of medical school sexual health education on specialty selection in young urologists specializing in sexual dysfunction. *Transl Androl Urol* 2023;12(7):1071-1078. doi: 10.21037/tau-22-793

Supplementary

Question 1 Post-graduate year

PGY	1	2	3	4	5	6	7	8	24
Number of Respondents	14	9	12	26	16	8	3	3	1

Question 2 Training level

Resident	Fellow	Attending
83	6	6

Question 3 Number of medical schools represented: 71

Question 4 Number of residency programs represented: 26

Question 5 Number of fellowship programs represented: 11

Question 6 Gender of applicants

Male	Female
68	25

Question 7 Will your future practice focus on sexual dysfunction?

Yes	No	Unsure
52	19	23

Question 8 Are you currently or do you plan to pursue fellowship in andrology, sexual dysfunction, or GU-reconstruction?

Yes	No	Unsure
42	33	18

Question 9 Does (did) your residency program currently have an attending urologist who specializes in sexual dysfunction?

Yes	No	Unsure
73	19	2

Question 10 If you answered yes to the question 9, what is the attending's gender?

Male	Female	Other	Prefer not to answer
70	9	0	2

Question 11 Do you have a faculty member who you would consider a mentor?

Yes	No	Unsure
79	12	3

Question 12 If you answered "yes" to question 11, how influential has your mentor been in your future career plans?

Very important	Important	Neutral	Low importance	Not at all important
24	34	23	0	2

Question 13 Is your mentor an expert in sexual health?

Yes	No	Unsure
41	42	2

Question 14 Did your medical school training include dedicated sexual health curriculum?

Yes	No	Unsure
46	46	1

Question 15 If you answered yes to question 14, was the curriculum required or optional?

Required	Optional (elective)	Unsure	Not applicable
42	3	3	43

Question 16 During which years of medical school training was the curriculum offered? (check all that apply)

MS-1	MS-2	MS-3	MS-4	Unsure	Not applicable
14	35	7	2	5	41

Question 17 Please estimate how many hours of course work in sexual health were provided:

1-2 hours	3-5 hours	5-10 hours	10-20 hours	>20 hours	Unsure	Not applicable	Other
7	19	14	7	5	1	5	36

Question 18 What type of sexual health topics did this curriculum cover (check all that apply)?

Male anatomy/ physiology	Female anatomy/ physiology	Gender and sexual orientation	Sexual history taking	Sex toys and tools	Body image and sexual self-esteem	Sexuality across the lifespan	Sexuality and religion/ spirituality	Sexual abuse and intimate partner violence	Safe sex	STIs	Porn	Other	N/A
55	53	41	51	11	15	20	10	38	38	48	6	0	30

Question 19 In what setting was the curriculum provided (check all that apply)?

Large-group didactics	Panel discussion	Small-group (instructor led)	Standardized patient experience	Online content and modules	Clinical (direct patient care)	Other	N/A
56	14	26	31	18	14	0	32

Question 20 Do you feel that this coursework provided you with an adequate fund of knowledge to address sexual health concerns for your patients?

Yes	No	Unsure	Not applicable
23	30	11	30

Question 22 Do you feel that your medical school sexual health curriculum contributed to your decision to sub-specialize in sexual dysfunction?

Yes	No	Unsure	Not applicable
6	27	6	55

Question 21 Do you feel that your medical school sexual health curriculum contributed to your decision to specialize in urology?

Yes	No	Unsure	Not applicable
13	44	6	30

Question 23 Do you feel that having a mentor who specializes in sexual dysfunction contributed to your decision to specialize in this field?

Yes	No	Unsure	Not applicable
33	11	5	44