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Prevalence of pelvic examinations on anesthetized patients without informed consent

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Abstract

Context: The pelvic examination is a fundamental tool for the evaluation and diagnosis of women's health conditions and an important skill for all medical students to learn as future physicians for the early detection of treatable conditions such as infection or cancer. Although the American College of Obstetricians and Gynecologists (ACOG) asserts that performing pelvic examinations under anesthesia for educational purposes should only occur if the patient provides explicit and informed consent, there still have been reports of medical students performing pelvic examinations on anesthetized patients across the country, and many states are now starting to pass bills requiring informed patient consents to conduct pelvic examinations under anesthesia.

Objectives: The objectives of this study are to evaluate the prevalence of pelvic examinations performed by osteopathic medical students on anesthetized patients without consent while fulfilling their third-year OB-GYN clerkship requirements.

Methods: The survey was administered and distributed to all osteopathic medical schools in the country via the Student Osteopathic Medical Association's (SOMA's) chapter emails, outreach emails, and SOMA's social media accounts to collect data. Inclusion criteria included third- or fourth-year osteopathic medical students who completed their OB-

GYN clerkship rotations when taking the survey. The exclusion criteria included any osteopathic medical student who had not completed their OB-GYN clerkship rotation. We utilized descriptive analysis to summarize the final data.

Results: We received 310 responses. The final number of responses was 291 after meeting the exclusion criteria. Most osteopathic medical students (94.2 %, n=274) considered the practice of performing pelvic examinations on anesthetized patients without their explicit consent unethical. Among the participants, 40.9 % (n=119) admitted to performing pelvic examinations on patients under anesthesia while on OB-GYN rotations, but most of them (57.1 %, n=68) did so without obtaining prior consent from the patients. Notably, the number of pelvic examinations performed by medical students on patients under anesthesia ranged widely from 1 to 25 with a median number of 10. Moreover, 58.9 % (n=70) indicated that they had not been properly educated to obtain specific consent before performing pelvic examinations under anesthesia. Many participants cited efficiency of practice, lack of policy awareness and personal education by medical students, and failure to refuse to perform pelvic examinations on anesthetized patients as trainees when asked by their seniors or preceptors.

Conclusions: This study demonstrates that although most osteopathic medical students consider performing pelvic examinations on anesthetized patients unethical, many still admit to practicing pelvic examinations on patients under anesthesia, while on OB-GYN rotations for efficiency of practice, lack of policy awareness and personal education, and being in unique positions in which grades are determined by seniors and preceptors for their willingness to do what is asked even if the practice does not align with their conviction. This study highlights the importance of ongoing research and implementation of policies at institutional and state levels that will procure the value of pelvic examinations while protecting and upholding the ethics of patients' rights and autonomy of medical students.

Keywords: consent; ethics; medical education; patient rights; pelvic exam

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The pelvic examination is a fundamental tool for the evaluation and diagnosis of women's health conditions. It is an essential skill for medical students to learn as future physicians, because it can aid in diagnosing various gynecologic conditions, including cancer [1, 2]. For decades, medical students performed pelvic examinations on anesthetized patients without explicit consent, as it was considered ethically justifiable for the purpose of medical training [3]. In an article published in 2005 in the *Journal of Health Care Law and Policy*, Dr. Jennifer Goedken, an OB-GYN, argued that practicing pelvic examinations under anesthesia is a necessary tool for medical students to utilize because it allows for complete relaxation of the abdominal and pelvic musculature for a full assessment of the internal pelvic organs; however, transparency is vital to the use of examinations under anesthesia [4]. A statement by the Association of Professors of Gynecology and Obstetrics echoes this sentiment as well, asserting the importance of informed consent for pelvic examinations while emphasizing their value and the development of a compromise to address both aspects [1].

Recently, there have been concerns regarding student involvement in performing pelvic examinations while a patient is under anesthesia [1]. This practice first came under public scrutiny in 1989 after the *American Journal of Obstetrics and Gynecology* published an article, discussing the need for medical student involvement in patient care. The article emphasized that patients, whether conscious or unconscious, have the right to refuse participation in medical education and advocated for the establishment of policies prohibiting pelvic examinations without patient consent [5]. The American College of Obstetricians and Gynecologists (ACOG) maintains that the decision to perform a pelvic examination should be a shared one between the patient and their provider, emphasizing that pelvic examinations under anesthesia should only be conducted with the patient's specific informed consent obtained before surgery [2, 6]. In 2001, the American Medical Association (AMA) Council on Ethical and Judicial Affairs reinforced the importance of informed consent in medical education. They recommended that medical students involved in any patient care obtain explicit and voluntary consent from patients. Furthermore, they advised that any anticipated involvement of medical students with anesthetized patients should be discussed before the procedure [7].

Informed consent is a fundamental ethical principle in medicine that upholds patients' autonomy and integrity. When the patient is awake and able to make informed decisions, obtaining consent for examinations is straightforward [8]. The clarity of their understanding or consent

regarding a student's participation in their treatment decreases under anesthesia, which increases the risk of potential harm. Unconsented intimate examinations can lead patients to feel violated and lose trust in healthcare providers if they later discover that an examination was performed without prior consent [9]. Additionally, students may feel anxiety or guilt if they decline to perform the examination [10].

Although there are guidelines and recommendations addressing the practice, many medical students still may perform pelvic examinations on unconscious patients without consent. While a medical student at the University of Pennsylvania, Dr. Silver-Isenstadt [11] co-authored a 2003 study in the *American Journal of Obstetrics and Gynecology*, which revealed that over 90 percent of the 401 surveyed students had performed pelvic exams on anesthetized patients. Following this publication, the Association of American Medical Colleges (AAMC) denounced the practice as "unethical and unacceptable," stating that pelvic examinations should not be performed on anesthetized women without their informed consent [12].

Since then, several states have passed legislation banning the practice of performing pelvic examinations without explicit patient approval, which could be grounds for loss of medical licensure [3, 13]. Although many of these laws are detailed, there is significant variation in existing legislation from state to state, including differences in who is affected by the laws, the circumstances in which the regulations apply, and the types of consent required. To address these discrepancies, the US Department of Health and Human Services, through the Centers for Medicaid and Medicare Services, recently issued guidance in April 2024. This guidance urges teaching hospitals nationwide to establish and enforce policies that guarantee the practice of obtaining informed consent before beginning any sensitive examinations, thus providing a national framework to standardize these procedures [14]. Given the minimal research published on this issue, it is important to further investigate this matter and determine the incidence in which it occurs on clinical clerkships. This study aimed to evaluate current medical students' perceptions of pelvic examinations on patients under anesthesia. We also surveyed the current occurrence of these intimate examinations to bring awareness to this practice and determine how to further protect our patients.

Methods

This quantitative cross-sectional study was reviewed by the Touro College Human Subjects Institutional Review Board

(HSIRB), which granted exempt approval of the study (HSIRB #18531). The study subjects were compensated for their participation after being randomly chosen utilizing a number generator. The National Student Osteopathic Medical Association Arkansas College of Osteopathic Medicine's chapter provided the funding of ten \$25 Amazon gift cards.

Survey design

The voluntary anonymous survey (Supplementary material) was administered on Google Forms. The survey was distributed to all osteopathic medical schools in the United States. Anyone who did not meet the inclusion criteria or sign the informed consent was excluded from the study. The survey began with the informed consent form and followed by questions regarding general demographic information, their involvement in performing pelvic examinations on anesthetized patients while on OB-GYN rotations, their understanding and perception of performing pelvic examinations on patients under anesthesia without their explicit consent, and possible reasons for this common practice. The survey also inquired whether there were any medical students who refused to perform pelvic examinations on anesthetized patients despite being asked by their preceptors and whether they experienced any repercussions of this refusal. The survey took approximately 5 minutes to complete and comprised of questions utilizing multiple choice, checkboxes, and free text. Responses were collected over five months from May to September 2023. The email addresses linked to the survey responses were removed, and the entire data set was de-identified by an independent analyst.

Statistical analysis

According to the AOA's 2020–2021 Osteopathic Medical Professional Report, there are approximately 33,800 medical students registered as osteopathic medical students in the country [15]. The Student Osteopathic Medical Association (SOMA) data analysis indicates that 15,000 of those students are part of the SOMA, with roughly 3,000 students receiving weekly SOMA emails. The participants were recruited through SOMA's internal chapter email lists, outreach emails, and SOMA's social media accounts. Therefore, the survey sample size was determined to be 380 utilizing a 95 % confidence interval by utilizing the Qualtrics Sample Size Calculator [16]. The general data analysis was performed through basic Microsoft Excel functions. The corresponding survey responses, frequencies, and percentages were reported.

Table 1: Demographic characteristics of medical students as participants of the survey.

	Study participants (n)	Percentage (%)
Race		
White	199	68.4 %
Asian	52	17.8 %
Multiracial	17	5.84 %
Black or African American	10	3.44 %
Latinx/Latino/Hispanic	6	2.06 %
Middle Eastern	4	1.37 %
Native Hawaiian or other Pacific Islander	1	0.34 %
Prefer not to say	2	0.69 %
Total	291	
Gender		
Male	84	28.87 %
Female	199	68.38 %
Prefer not to say	5	1.72 %
Non-binary	3	1.03 %
Total	291	

Results

Demographics

The survey collected 310 responses. However, 19 of them were excluded because they indicated that they had not completed their OB-GYN rotation at the time of study participation, bringing the total number of eligible participants to 291. The participants self-reported their race and gender, as shown in Table 1. Notably, 68.4 % (199) were females, 28.9 % (84) were males, 1.72 % (5) preferred not to say, and 1.03 % (3) identified themselves as nonbinary.

Medical students' perception of performing pelvic examinations under anesthesia

When participants were asked if the practice of performing pelvic examinations on anesthetized patients is considered ethical, 94.2 % (274) indicated "No" with 83.5 % (243) considering the practice akin to sexual assault. Among the participants, 99.9 % (290) expressed the correct understanding of what constitutes informed consent, stating that written or verbal consent must be provided for students to perform the pelvic examinations on anesthetized patients even if consents were given separately to their attending preceptors. When asked if the students ever performed a

Table 2: Incidences of performing pelvic examinations on anesthetized patients by medical students.

	Study participants (n)	Percentage (%)
Incidences of performing pelvic examinations on patients under anesthesia		
Yes	119	40.9 %
No	172	59.1 %
Total	291	
Obtained explicit consent from patients prior to performing pelvic examination under anesthesia		
Yes	31	26.0 %
No	68	57.1 %
Prefer not to answer	20	16.9 %
Total	119	
Did the medical students get the proper education to obtain consent prior to performing pelvic examinations on anesthetized patients?		
Yes	45	37.8 %
No	70	58.8 %
Prefer not to answer	4	3.4 %
Total	119	

pelvic examination on anesthetized patients while on their OB-GYN clerkship rotations, 40.9 % (119) indicated “Yes.” However, among those who performed pelvic examinations on patients under anesthesia, only 26.0 % (31) had obtained explicit consent from the patients prior to anesthesia, whereas 57.1 % (68) participants had not. The remaining 16.9 % (20) of respondents did not answer the survey question on whether explicit consent had been obtained. Notably, the number of pelvic examinations performed on anesthetized patients ranged widely from 1 to 25 with a median number of 10. Moreover, when asked if the students had been educated to obtain explicit consent for them to perform a pelvic examination on anesthetized patients, 37.8 % (45) responded “Yes” whereas 58.9 % (70) said they had not been given the proper education to obtain consents by the preceptors or rotation administration, and 3.36 % (4) preferred not to answer this question. The summary of incidences of medical students performing pelvic examinations on anesthetized patients with or without consent is illustrated below in Table 2.

Possible reasons for medical students performing pelvic examinations on anesthetized patients

When asked what the participants thought were the possible reasons for practicing pelvic examinations on anesthetized

Table 3: The number of medical students that refused performing pelvic examinations on anesthetized patients.

	Study participants (n)	Percentage (%)
Have you ever refused to perform pelvic examinations on anesthetized patients when asked by your seniors or preceptors?		
Yes	15	5.1 %
No	98	33.7 %
Prefer not to answer	178	61.2 %
Total	291	
Number of students experiencing consequences for refusing to perform pelvic examinations on anesthetized patients	10	66.7 %

patients, most cited efficiency of practice, lack of personal education, and policy awareness (79 %, 235) as well as being in unique positions as medical students whose clerkship grades are often determined by their willingness to do what is asked of them by their preceptors. Many participants 93.1 % (271) indicated that they did not know whether their state has a policy requiring explicit consent for performing pelvic examinations on unconscious patients. When asked if they ever refused to perform pelvic examinations on anesthetized patients, understanding that this act was considered unethical, only 5.1 % (15) refused, whereas 33.7 % (98) felt that they could not refuse when they were asked by their preceptors. Most of the participants (61.2 %, 178) preferred not to answer this question. Out of the 15 participants who refused to perform the pelvic examination without explicit consent, 66.7 % (10) of students indicated that they were scrutinized later by their preceptors for refusing to perform the pelvic examination. Table 3 summarizes the number of medical students who refused to perform the pelvic examinations on anesthetized patients when asked by their preceptors. Some further elaborated that their refusal was viewed as insubordinate and a refusal to learn. When asked if there should be a separate signature line on the patients’ consent forms for any surgical procedures involving performing pelvic examinations under anesthesia by medical students, 79 % (230) indicated “Yes.”

Discussion

Medical students’ perception of performing pelvic examinations under anesthesia

Informed consent is a vital part of medical education on clinical rotations. Our study found that there is a deficiency

in medical students' understanding of needing to obtain consent for pelvic examinations under anesthesia. In addition, different hospitals may have varying administrative policies and instructions surrounding informed consent. They may also contain unclear language regarding informed consent procedures, posing a challenge to medical students' understanding of when pelvic examinations under anesthesia should be performed.

Incidences of performing pelvic examinations on anesthetized patients by medical students

It has been consistently mentioned in professional society statements and state laws that pelvic examinations should not be performed if they are not related to the planned procedure [1, 14]. Although the general population views pelvic examinations under anesthesia without consent as unethical, medical students may still participate in them because they fear punitive actions if they decline due to their subordinate position, even when knowing that pelvic examinations under anesthesia are unethical. The 16.9 % (20) of medical students who preferred to not answer whether consent was obtained or not prior to performing pelvic examinations under anesthesia raises concern for the moral crisis experienced by students in these situations. Furthermore, most students in this study reported that they were not properly educated to obtain consent prior to performing pelvic examinations on anesthetized patients. This poses the question of whether the responsibility for educating students on obtaining explicit consent for procedures lies on the precepting physician, preclinical, or clinical education.

Possible reasons for medical students performing pelvic examinations on anesthetized patients

The occurrence of pelvic examinations under anesthesia has multiple potential sources including efficiency of practice, lack of policy awareness, and the hierarchical culture of medicine. Those involved in medical education may find instructing medical students to perform pelvic examinations under anesthesia before the commencement of a procedure in the operating room to be the most time-efficient and practical way of allowing medical students to practice this physical examination skill under their supervision. This may be exacerbated by instructors with busy schedules or those

at institutions with a higher volume and complexity of patients. Contributing to medical students' experiences with pelvic examinations under anesthesia is a lack of understanding of institutional policies and variance in these policies between institutions. Students may be unable to cite a policy or provide their superiors with reasoning, posing a barrier to students' refusal to conduct pelvic examinations. Finally, the long-standing hierarchical nature of medicine and the historical pattern of subordination to superiors in medical training creates a challenging environment for students to voice their concerns.

Ways to address the issue

The practice of performing pelvic examinations under anesthesia without consent may be addressed through changes in the approach to teaching pelvic examinations. Medical student education may be amended to emphasize the importance of informed consent and patient autonomy. On the institutional side, we recommend that hospitals and institutions proactively disclose their consent policies to medical students before clerkships, ensuring student awareness and understanding of protocols. Furthermore, ultrasound simulation training could be conducted with the mannequin models to educate students on pelvic anatomy and pathology [17]. In recent years, the utilization of immersive technologies (e.g., virtual reality [VR]) in medical education has grown due to its effectiveness in teaching both procedural and interpersonal skills [18]. VR technology also exists for practicing pelvic examinations [19]. Medical students have reported VR to be helpful in learning to perform a pelvic examination, suggesting that VR may be another teaching modality for learning these sensitive examinations [20].

There are many different teaching modalities for acquiring pelvic examination skills. However, the hierarchical culture of medical training presents a systemic challenge that may require more than diverse teaching modalities to overcome [21]. This culture often places pressure on medical students, contributing to fear and intimidation. A starting point to tackle these issues may be eliminating any negative consequences for students who refuse to perform pelvic examinations under anesthesia without informed consent. Additionally, open communication may be achieved through regular feedback sessions with the supervising instructor, and this practice may be effective in addressing intimidation or fear felt by students. Furthermore, creating a supportive environment where students can anonymously report concerns about insufficient consent obtained may further this goal. In alignment with osteopathic tenets and the practice of osteopathic

medicine, these measures also contribute to learning professionalism and maintaining respect for patient privacy as a medical student.

Recommendations

As outlined by the guidelines of the US Department of Health and Human Services through the Centers for Medicaid and Medicare Services, consent must be obtained for any pelvic examination regardless of whether patients are anesthetized or not. Performing a pelvic examination without a patient's informed consent is not allowed in osteopathic medicine. Currently, there are approximately 20 states with consent laws in place, and we expect that many more states will follow this practice and require consenting laws to be universal for any pelvic examination. We would recommend implementing institutional protocols to ensure the practice of obtaining consent from any patients before performing a pelvic examination. Additionally, resident physicians and attending physicians on the team should pay extra attention to ensure that the patients are consented if any medical students are present on their rotating services.

Study limitations

This study's limitations include the inclusion of only osteopathic medical students' experiences, and the hesitation of medical students to honestly report occurrences of and attitudes toward the practice of pelvic examinations under anesthesia with unclear status of informed consent. The findings here are also limited by an insufficient sample size. They may also be affected by the profound lack of existing literature on this topic and selection bias, namely volunteer and/or nonresponse bias.

Future work

Further studies are necessary to elucidate this topic in medical education. Larger sample sizes and a more diverse student population are needed to improve the reliability and validity of our findings. Potential areas of further study include methods of preventing unconsented pelvic examinations from being performed under anesthesia and qualities of clear institutional policies regarding informed consent and their standardization. It is recognized that those under anesthesia are incapacitated to make their own medical decisions evidenced by the common practice of surgeons to discuss potential intraoperative complications

and decisions before procedures [1]. Similarly, those under anesthesia cannot then consent to a pelvic examination conducted by a medical student if not informed beforehand. Efforts to elucidate medical student participation in pelvic examinations under anesthesia and obtaining informed consent may include supplemental consent forms that explicitly include medical students, attestation of discussion on consent forms, and including the term "exam under anesthesia" on consent forms as a standardized practice [1]. There are currently only 20 states in the country that passed a bill requiring obtaining consent for pelvic examinations under anesthesia [13]. Through this study, our hope is to raise awareness of this important issue and to encourage institutions to develop and implement policies regarding pelvic examinations under anesthesia.

Conclusions

This study found that most medical students view pelvic examinations under anesthesia without explicit consent as unethical. However, there are still many medical students who perform pelvic examinations without obtaining explicit consent from patients prior to anesthesia. Our survey demonstrates that this is in part due to efficiency of practice, lack of policy awareness, limited knowledge on informed consent practices, and being in a subordinate position as a trainee with fears of repercussions. This study underscores the ongoing need for future research, and implementation and adherence of policies that will allow teaching and learning of pelvic examinations by medical students in ethical ways while protecting the autonomy of both the medical student and the patients.

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Research ethics: This quantitative cross-sectional study was reviewed and approved by the Touro College HSIRB, who deemed this study exempt (HSIRB# 18531).

Informed consent: Informed consent was obtained from all individuals included in this study, or their legal guardians or wards.

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Use of Large Language Models, AI and Machine Learning

Tools: None declared.

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References

1. Hammoud MM, Spector-Bagdady K, O'Reilly M, Major C, Baecher-Lind L. Consent for the pelvic examination under anesthesia by medical students: recommendations by the Association of Professors of Gynecology and Obstetrics. *Obstet Gynecol* 2019;134:1303–7.
2. ACOG committee opinion No. 754: the utility of and indications for routine pelvic examination. *Obstet Gynecol* 2018;132:e174–80.
3. Adashi EY. Teaching pelvic examination under anesthesia without patient consent. *JAMA* 2019;321:732.
4. Goedken J. Pelvic examinations under anesthesia: an important teaching tool. *J Health Care Law Policy* 2005;8:232–9.
5. Cohen DL, Kessel RWI, McCullough LB, Apostolides AY, Heiderich KJ, Alden ER. Pelvic examinations by medical students. *Am J Obstet Gynecol* 1989;161:1013–14.
6. Committee opinion No. 500: professional responsibilities in obstetric–gynecologic medical education and training. *Obstet Gynecol* 2011;118:400–4.
7. Mentor V. Medical student involvement in patient care: report of the Council on Ethical and Judicial Affairs. *AMA J Ethics* 2001;3:71–5.
8. Zuchelkowski BE, Eljamri S, McDonnell JE, Varma B, Stern NG, Rothenberger SD, et al. Medical student attitudes on explicit informed consent for pelvic exams under anesthesia. *J Surg Educ* 2022;79:676–85.
9. Friesen P. Educational pelvic exams on anesthetized women: why consent matters. *Bioethics* 2018;32:298–307.
10. Kaur K, Salwi S, McNew K, Kumar N, Millimet H, Ravichandran N, et al. Medical student perspectives on the ethics of pelvic exams under anesthesia: a multi-institutional study☆. *J Surg Educ* 2022;79:1413–21.
11. Ubel PA, Jepson C, Silver-Isenstadt A. Don't ask, don't tell: a change in medical student attitudes after obstetrics/gynecology clerkships toward seeking consent for pelvic examinations on an anesthetized patient. *Am J Obstet Gynecol* 2003;188:575–9.
12. Bruce L. A pot ignored boils on: sustained calls for explicit consent of intimate medical exams. *HEC Forum* 2020;32:125–45.
13. Plantak M, Alter SM, Clayton LM, Hughes PG, Shih RD, Mendiola M, et al. Pelvic exam laws in the United States: a systematic review. *Am J Law Med* 2022;48:412–19.
14. U.S. Department of Health and Human Services. Letter to the nation's teaching hospitals and medical schools. Published April 1, 2024 <https://www.hhs.gov/about/news/2024/04/01/letter-to-the-nations-teaching-hospitals-and-medical-schools.html> [Accessed 26 May 2024].
15. American Osteopathic Association. 2020–2021 osteopathic medical profession report; 2021. [Osteopathic.org/OMP](https://osteopathic.org/OMP).
16. Qualtrics. Available from: <https://www.qualtrics.com>.
17. Cook J, Rao VV, Bell F, Durkin M, Cone J, Lane-Cordova A, et al. Simulation-based clinical learning for the third-year medical student: effectiveness of transabdominal and transvaginal ultrasound for elucidation of OB/GYN scenarios. *J Clin Ultrasound* 2020;48:457–61.
18. Mistry D, Brock CA, Lindsey T. The present and future of virtual reality in medical education: a narrative review. *Cureus* 2023;15:e51124.
19. Moraes RM, Souza DFL, Valdek MCO, Machado LS. A virtual reality based simulator for gynecologic exam training. In: 2006 7th international conference on information technology based higher education and training. *IEEE*; 2006:786–91 pp.
20. Cheung VYT, Tang YM, Chan KKL. Medical students' perception of the application of a virtual reality training model to acquire vaginal examination skills. *Int J Gynaecol Obstet* 2023;161:827–32.
21. Kempf AM, Pelletier A, Bartz D, Johnson NR. Consent policies for pelvic exams under anesthesia performed by medical students: a national assessment. *J Wom Health* 2023;32:1161–5.

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