

ORIGINAL RESEARCH

18. From Observation to Participation: Gender Differences and Surgical Exposure among Medical Students

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https://www.youtube.com/watch?v=hJlCJ1w8oM&list=P_LhqNq3xJC1baf00Y5bvBcgMmXpgzJxd44&index=5&t=6796s

Introduction: Surgical rotations are critical to the clinical education of medical students, bridging theoretical knowledge with practical experience. In many medical institutions, the transition from passive observation to active participation in surgical settings remains inconsistent and may be influenced by gender disparities. This study aimed to assess the extent of surgical exposure among clinical medical students in Georgia, with a particular focus on gender-based differences in opportunities to participate actively during general surgery rotations.

Methods: A cross-sectional survey was conducted among undergraduate medical students from the University of Georgia, Ilia State University, European University, Caucasus University, and Caucasus International University in Tbilisi, following ethical approval. The survey was carried out from June 27 to July 18, 2025. Participants were asked about the duration of their general surgery rotation, the number and types of procedures they observed and assisted with, and their involvement in basic surgical tasks. Perceptions of supervisory support, feedback, and overall satisfaction were measured using a Likert scale. Gender-based comparisons were analyzed using independent sample t-tests, with statistical significance at $p < 0.05$.

Results: Of the 96 respondents (mean age: 24.05 ± 2.65 years), 52 were female (54.2%) and 44 male (45.8%). Most students (58.3%) spent 2–4 weeks in general surgery rotations. Only 70.8% had the chance to perform basic surgical skills under supervision. Male students were more likely to have scrubbed in during surgeries compared to females. Males also reported significantly more opportunities to perform basic surgical tasks ($p = 0.007$) and assist in operations ($p = 0.017$). While both genders reported similar perceptions of supervisor approachability, female students rated their overall learning experience lower on average. 43.8% of all students strongly disagreed they had sufficient hands-on practice, and only 16.7% received regular constructive feedback. When asked whether the experience increased their interest in pursuing a surgical career, only about one-third agreed or strongly agreed, with a slight but not statistically significant male predominance.

Conclusion: This study showed the presence of gender-based disparities, with male students receiving significantly more hands-on opportunities. Addressing these gaps through more structured and equitable training is essential to ensure that all students gain meaningful surgical experience.

Table 1. Survey of Medical Students' Surgical Exposure, Participation, and Satisfaction

Exposure to Surgical Procedures		
Approximately how many weeks did your General Surgery rotation last?		
Less than 2 weeks	5	5.2
2–4 weeks	56	58.3
5–8 weeks	26	27.1
More than 8 weeks	9	9.4
How many surgeries did you observe during your rotation?		
Less than 2 weeks	22	22.9
1–5	47	49.0
6–10	17	17.7
More than 10	10	10.4
How many surgeries did you assist in (scrubbed in)?		
None	66	68.8
1–3	24	25.0
4–7	3	3.1
More than 7	3	3.1
Which types of procedures were you exposed to?		
Appendectomy	34	35.4
Hernia repair	38	39.6
Laparotomy	57	59.4
Mastectomy	85	88.5
Cholecystectomy	51	53.1
Amputations	87	90.6
Other	44	45.8
Did you have the opportunity to perform basic surgical skills under supervision?		
Yes	68	70.8
No	28	29.2
Perception and Satisfaction		
How would you rate the overall learning experience during your surgery rotation?		
Excellent	15	15.6
Good	26	27.1
Average	33	34.4
Poor	22	22.9
Statement		
I was actively involved during ward rounds.		
Strongly disagree	25	26.0
Disagree	21	21.9
Neutral	28	29.2
Agree	15	15.6
Strongly agree	7	7.3
I was given chances to scrub in and assist in surgeries.		
Strongly disagree	41	42.7
Disagree	21	21.9
Neutral	13	13.5
Agree	15	15.6
Strongly agree	6	6.3
My supervisors were approachable and willing to teach.		
Strongly disagree	15	15.6
Disagree	7	7.3
Neutral	30	31.3
Agree	27	28.1
Strongly agree	17	17.7
The rotation improved my clinical and procedural confidence.		
Strongly disagree	25	26.0
Disagree	14	14.6
Neutral	29	30.2
Agree	14	14.6
Strongly agree	14	14.6
I had enough hands-on practice during the rotation.		
Strongly disagree	42	43.8
Disagree	29	30.2
Neutral	17	17.7
Agree	5	5.2
Strongly agree	3	3.1
I received constructive feedback regularly.		
Strongly disagree	32	33.3
Disagree	22	22.9
Neutral	26	27.1
Agree	9	9.4
Strongly agree	7	7.3
I am now more interested in pursuing surgery as a career.		
Strongly disagree	24	25.0
Disagree	13	13.5
Neutral	27	28.1
Agree	13	13.5
Strongly agree	19	19.8

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