

Satisfaction of Medical Students with Surgical Training: A Survey of Northern Italy

Gabriela Azevedo Sansoni,¹ Patrizia Borzi,² Preetha Karki,³ Shahzeen Khan Sajid,⁴ Anastasia Semikhnenko,³ Aswathy Varma.³

Abstract

Background: Medical student satisfaction regarding the inclusion of surgical education into the medical curriculum may vary among learners. In this study, we analyzed the satisfaction of medical students in regard to how surgical topics were taught in Italian schools in 2021 through a survey. The results collected can be used to not only improve the quality of medical education in the future, but to help students make informed decisions about their own education. **Methods:** An electronic survey was sent out to medical students in their third to sixth years across three medical schools in Northern Italy via their respective institutional secretaries. The questionnaire was available in Italian and English. It included both closed and open-ended questions regarding satisfaction with the teaching of surgical topics in Italian medical universities. **Results:** Results were reported following the Checklist for Reporting Results of Internet E-Surveys (CHERRIES). Most respondents (87%) preferred to have an increase in surgery-related electives and/or extracurricular courses. Further, 51.2% of respondents expressed an increased interest in surgery after having observed in the Operating Room (OR). The majority of respondents (73.3%) also expressed that the coronavirus disease 2019 (COVID-19) pandemic had negatively impacted the quality of teaching of surgical topics. **Conclusion:** In the present survey study, Italian medical students preferred hands-on practice over theoretical lectures for surgical education. The majority of students stipulated that the inclusion of suturing, scrubbing, and good surgical practice workshops along with an increased OR attendance would facilitate a better understanding of surgery.

Key Words: Surgical Procedures; Operative; Education; Medical; Survey (Source: MeSH-NLM).

Introduction

Surveys represent a valuable tool for collecting information on student perceptions of medical education. Educators and educational institutions often use surveys to collect relevant feedback and improve the quality of education.^{1,2}

It is crucial to understand the perception of surgical educational programs by students as student satisfaction with their training is essential for the program's effectiveness and their career output. It goes without saying that the technical skills of surgeons are directly related to postoperative outcomes. In Italy, several studies based on surveys have been done. A study conducted in 2016 comparing the attitudes of medical students who experienced different training models for their surgical rotations demonstrated that learning in the Operation Room (OR) and through observed ward rounds provided the most effective training experience. Students who were not admitted to the OR reported poor educational experiences.³ Several studies in Saudi Arabia, for example, showed that surgical students were generally dissatisfied with their current training programs and revealed significant weaknesses in their education.^{4,5}

Other surveys conducted in Italy revealed that the majority of medical students expressed concerns regarding distance learning during the SARS-CoV-2 disease (COVID-19) pandemic.⁶ Additionally, the COVID-19 pandemic has affected surgical medical education in unprecedented ways. Many countries have faced the necessity to move to distance learning through different methods and this has imposed many restrictions on surgical training and reflected in various ways on student satisfaction.⁷ Surgical residents and early-career surgeons across the globe have experienced reduced operating times due to cancellation of elective surgeries leading to a decline in intraoperative practice and training opportunities.^{8,9}

However, information regarding the level of student satisfaction with regards to the teaching of surgical skills in the context of the COVID-19 pandemic is still limited. This study, designed as a survey, aims to delineate the level of satisfaction in surgical training and the opinions of medical students on how surgical topics are taught in Italy in the context of the COVID-19 pandemic.

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Methods

Setting, Sampling Method, and Population

Electronic Surveys were sent via email to the students' respective medical school secretaries in three universities in Northern Italy. Responses were collected between the 26th of April and the 10th of August, 2021. Italian medical students in their third through sixth year.

Survey

This survey was developed using a precise sequence of item generation, item reduction, questionnaire formatting, composition, pilot testing, and transcription in both Italian and English.¹⁰ The closed-ended questions were created using Likert's 5-point rating scale system ranging from 1 to 5 (in which 1 corresponds to "not interested at all" and 5 to "very interested") as well as multiple-choice questions. The full survey is available in the [Supplementary Material](#). Closed-ended questions facilitated robust data analysis, allowing reliable quantification of effect size.¹¹ Respondents were also able to express their opinions through open-ended questions and to obtain a better understanding of participants' perceptions. A soft-launch approach with a pilot survey determined the expected response rate and was used to correct any ambiguities before finalizing the survey.

Analysis

Results were reported following the Checklist for Reporting Results of Internet E-Surveys (CHERRIES).¹² Simple descriptive statistics (frequencies and percentages) were computed for each survey question using the Excel Office 16.51 functions and performed statistical analysis using GraphPad online software (QuickCalcs; <http://www.graphpad.com/quickcalcs>). The Google Forms platform, chosen to collect the data, is in accordance with the European Union General Data Protection Regulation.¹³ The survey questions were also reviewed and approved by the organization Women in Surgery Italia, who themselves carried out a survey study to assess satisfaction among female surgeons in Italy and gender-based discrimination.¹⁴

Results

Responses obtained before August 10th, 2021, at 12:00 pm Central European Time were analyzed. The survey was sent to a total of 419 students, of whom 103 responded (response rate of 24.6%). Two students (1.9%) enrolled in their non-clinical years were excluded from the survey. Overall, 30 (29.1%) respondents were enrolled in their third year, 22 (21.4%) in their fourth year, 36 (35.0%) in their fifth year, and 13 (12.6%) in their sixth year. The baseline characteristics of the participants are outlined in [Table 1](#). Students' interest in surgery ([Figure 1](#)) was variable throughout their degree.

Theoretical surgery courses included in the curriculum were evaluated by survey respondents with the use of a Likert scale. Only 5% of students found the classes "very interesting" while 76.3% of students ranked the courses from "not interesting at all" to "mildly interesting". Just 4.1% of the respondents claimed that

Table 1. Participant's Characteristics.

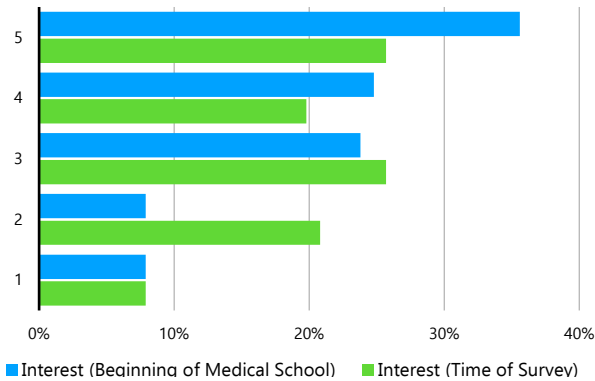
Participant characteristics	Number	Percentage (%)
Number of students that received the survey	419	N/A
Total number of survey respondents	103	N/A
Response rate	103/419	24.6
Those who answered in English	87	84.5
Those who answered in Italian	16	15.5
Age (years)		
20-23	50	49.5
24-27	43	42.6
28	8	7.9
Gender		
Female	74	73.3
Male	24	23.8
Other	3	3.0
Year of study		
1st and 2nd year	2	1.9
3rd year	30	29.1
4th year	22	21.4
5th year	36	35.0
6th year	13	12.6
Nationality		
Italian	41	40.6
Non-Italian	60	59.4
Employment status		
Full-time students	73	70.9
Occasional workers	16	15.8
Part-time workers	7	6.9
Full-time workers	2	2.0
Place of study		
Lombardy	85	84.2
Emilia-Romagna	16	15.8

Legend: Participant characteristics that were obtained through their answers at the beginning of the survey. N/A: non-applicable

the existing surgery clerkships were very useful for their learning experience; 39.8% of respondents described the clerkships as somewhat useful for their learning experience and 24.5% as not useful. Of the responding students, 31.6% had not had surgical clerkship experiences yet.

As demonstrated in [Figure 2](#), a majority of the respondents (82.2%) agreed that the mandatory hours of practice included in their institutional surgical courses were insufficient. Only 5.9% of respondents reported that the hours of practice were sufficient. A significant proportion of the respondents had never been to the OR (26.7%) or had been to the OR only 1 to 5 times (43.6%). Only 15.8% of respondents had been to the OR more than 10 times. Of those that attended the OR, more than half (51.2%) expressed an increased interest in surgery after the OR experience. Significant percentages of students reported wanting to go to the OR more frequently and disclosed that the hours of practice included in their surgical course were insufficient ([Figure 2](#)).

Figure 1. Interest in surgery at the beginning of students' medical education compared with the time of the survey.



Legend: Level of Interest Rated from 1 (Not interesting at all) to 5 (very interested). Student's interest in Surgery at the beginning of their medical education compared to their interest in surgery at the time of answering the Survey.

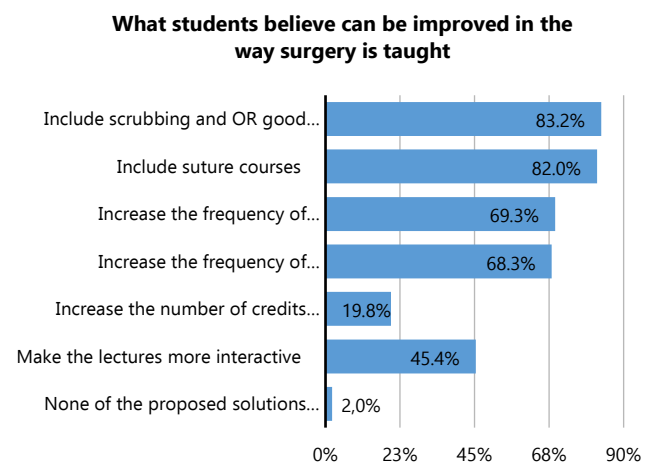
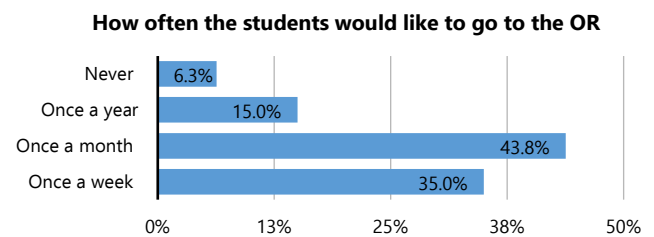
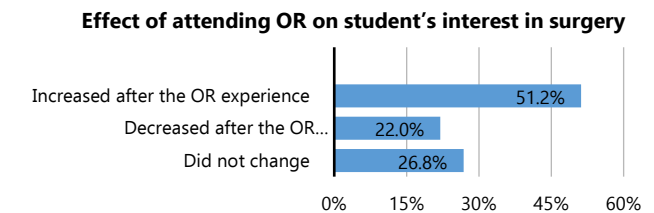
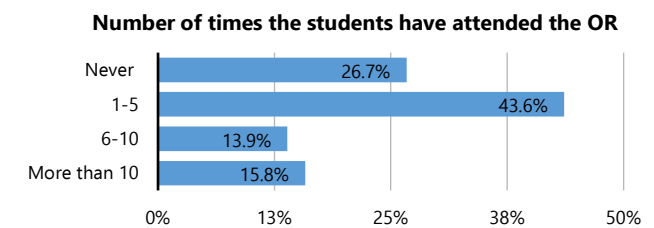
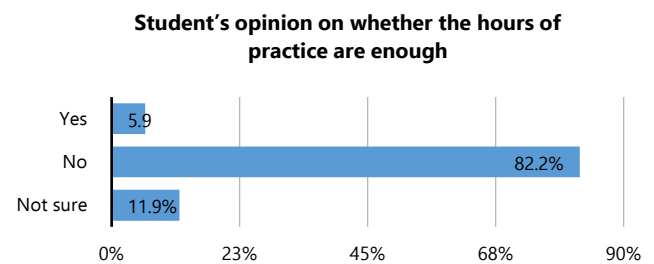
Regarding the impact of the COVID-19 pandemic, most respondents (73.3%) confirmed that it negatively affected the quality of teaching of surgical topics. Less than a quarter (24.8%) did not notice any change in the quality of teaching of surgical topics due to the pandemic and 2.0% of the students found that the pandemic positively affected the quality of teaching.

Unpaired t-tests were performed to compare the interest in surgery among the participants at the beginning of medical school as well as their interest in surgery at the time of the survey.¹⁰ No statistical difference was found between men and women. However, a paired t-test of the interest in surgery in all participants at the beginning of university compared to the time of the survey showed a statistically significant decrease ($p=0.01$).

Discussion

This was the first study to evaluate the quality of surgical teaching as reported by students at Italian medical schools. High levels of dissatisfaction were highlighted- in that a significant percentage of the students (82.2%) reported that not enough hours of practice were included in the surgical courses at their institutions. The majority of the respondents (43.6%) had attended the OR one to five times only or had never attended it (26.7%) at all. The benefit of increasing surgical practical skill development is demonstrated by 51.2% of the respondents expressing an increased interest in surgery after OR experiences. The same percentage of students claimed that an increase in OR attendance would increase satisfaction with surgical training. The majority of respondents (87.0%) maintained that they would like to have more surgery-related electives and/or extracurricular activities to be included in core courses. Furthermore, a large percentage (**Figure 2**) of students responded that the inclusion of good surgical practice, scrubbing and suture workshops, as well as increased OR attendance would help in having a deeper understanding and knowledge of surgery¹⁴.

Figure 2. Student's experience of and ideas for improvement for surgical skills teaching.



Legend: This figure presents the percentage of students that have selected these possible answer options for various questions in the survey pertaining to their experience and their suggestions for improvement relative to how surgery is taught.

Strengths

The present survey provided critical insight into the opinions of third- to sixth-year medical students in Medicine and Surgery International courses in Italian medical schools. The inclusion of "Other" as an alternative to selected multiple-choice answers minimized the potential inflexibility inherent to questionnaires^{12,13}. A soft launch approach via a pilot survey allowed the design of a clear and easily understandable questionnaire. The bilingual characteristic of the survey minimized the potential language barrier interference.

Limitations

Reduction of sampling bias was done by reaching out to students through their respective medical school secretaries. Due to the lack of response from many medical schools, it was only possible to reach students studying in the Lombardy and Emilia-Romagna regions, which limited the generalizability of this study geographically. Further investigation is vital to obtain a broader perspective of medical student surgical experiences. Nevertheless, such a limitation has a positive impact on the specificity of findings in characterizing a more specific population of medical students in Italy. In addition, the easily replicable method can be used in other regions to quantify the same variables.

Conclusion

Previous studies have shown that students are dissatisfied with how the theoretical aspects of surgery are taught. Furthermore, there is a much greater percentage of students that are dissatisfied with the number of learning opportunities for surgical practical skills. The present survey sheds light on the areas in which changes are necessary to improve the overall experience of students regarding surgical training and teaching. Lastly, regarding the implications of COVID-19 restrictions on surgical topics teaching, a large proportion of students reported significant impacts on medical learning. This result reiterates the preference for practical lessons and active learning in surgical teaching for students.

Summary – Accelerating Translation

Soddisfazione dei Studenti di Medicina e Chirurgia con l'Insegnamento della Chirurgia: un'Indagine del nord Italia

Questo studio si focalizza sulla soddisfazione degli studenti del corso di studio in medicina e chirurgia per quanto riguarda l'approccio all'insegnamento delle materie chirurgiche in alcune regioni dell'Italia settentrionale. Dopo svariati confronti tra studenti di medicina in Italia, è emersa l'impressione comune della presenza di un distacco tra l'insegnamento della chirurgia all'università e la realtà dell'attività e della professione chirurgica. Gli ultimi anni accademici sono stati inoltre segnati dalla pandemia di COVID-19, che ha imposto significativi cambiamenti nell'ambito delle esperienze pratiche e dei tirocini. Questo sondaggio mira a misurare l'impatto di questo nuovo problema anche nell'insegnamento delle materie chirurgiche. Abbiamo ritenuto che un sondaggio fosse il metodo appropriato per indagare le opinioni degli studenti su questo tema e per utilizzare potenzialmente i dati qualitativi raccolti per migliorare la futura qualità dell'istruzione degli studenti di medicina in Italia.

METODI

Un'indagine qualitativa è stata inviata agli studenti dal terzo al sesto anno di 3 diverse scuole di medicina dell'Italia settentrionale tramite un'e-mail inoltrata

loro dalle rispettive segreterie istituzionali. Il questionario è stato progettato e sperimentato su studenti di medicina per assicurarsi che il testo e le modalità di compilazione fossero chiari e di facile comprensione. Il questionario era disponibile in italiano e in inglese, in quanto queste sono le due lingue di insegnamento dei corsi di medicina e chirurgia in Italia, e comprendeva sia domande chiuse che aperte, riguardanti la soddisfazione per l'insegnamento delle materie chirurgiche nei corsi di studio in medicina.

RISULTATI

In totale abbiamo ricevuto 103 risposte. Abbiamo riscontrato che l'interesse per la chirurgia dei partecipanti al sondaggio ha subito dei cambiamenti durante il percorso di studio. È infatti emerso un calo di interesse per la chirurgia con l'avanzare degli studi: il 35.6% degli studenti aveva espresso di essere molto interessato alla chirurgia prima di iniziare a studiare medicina, ma solo il 25.7% ha dichiarato di essere molto interessato alla materia al momento della risposta al sondaggio. Mediante l'utilizzo di test statistici, abbiamo effettivamente riscontrato dei risultati rilevanti nel calo di interesse per la chirurgia dei partecipanti.

Abbiamo inoltre evidenziato una scarsa soddisfazione dei partecipanti relativamente ai corsi teorici di chirurgia. L'interesse veniva espresso nelle risposte con una scala Likert da 1 a 5, dove 1 rappresenta elementi "per nulla interessanti" e 5 "molto interessanti". Il 14.9% degli studenti li ha definiti "per nulla interessanti", il 28.7% hanno dato un punteggio di 2 su 5, e il 32.7% di 3 su 5. Solo il 5% dei partecipanti li considera "molto interessanti".

Per quanto riguarda la soddisfazione sull'insegnamento della chirurgia, abbiamo usato la stessa modalità di risposte e abbiamo riscontrato un pattern di risposte simile. Il 25.7% degli studenti ha dato un vuoto di 1 che corrispondeva a "per nulla" soddisfatti, il 24.8% ha dato un voto di 2, il 35.6% di 3 e solo il 5.0% erano "molto" soddisfatti.

Abbiamo poi indagato quanto la pratica sia necessaria nell'insegnamento della chirurgia: l'opinione del 97.0% degli studenti è che sia necessaria. Solo il 4.1% dei partecipanti al sondaggio ha però definito utili i tirocini pratici, e la maggior parte degli studenti (82.2%) ha concordato sul fatto che le ore pratiche incluse nei corsi di chirurgia siano insufficienti.

Il 26.7% dei partecipanti ha dichiarato di non essere mai stato in sala operatoria, e solamente il 15.8% di esserci stato più di 10 volte. Alla domanda "quanto spesso vorresti andare in sala operatoria?" il 35.0% degli studenti ha risposto una volta alla settimana, il 43.8% una volta al mese, il 15.0% una volta all'anno, il 6.3% mai.

Abbiamo ricevuto una vasta gamma di risposte alla domanda riguardante i possibili miglioramenti dell'insegnamento della chirurgia: la maggior parte degli studenti partecipanti al sondaggio ha votato per corsi di vestizione, lavaggio e pratiche di comportamento in sala operatoria, per l'aggiunta di corsi di sutura e per l'aumentata frequenza in sala operatoria.

Per quanto concerne l'impatto della pandemia, il 73.3% ha affermato che questa ha negativamente impattato sulla qualità dell'insegnamento della chirurgia. Il 24.8% non ha notato alcun cambiamento, e solo il 2.0% ha notato dei cambiamenti in positivo.

CONCLUSIONE

Diversi studi hanno già evidenziato l'insoddisfazione degli studenti di medicina per quanto riguarda le modalità di insegnamento della parte teorica della chirurgia, ma ancor più studenti non sono soddisfatti della quantità di opportunità dedicate all'insegnamento della parte pratica.

Questo sondaggio vuole puntare i riflettori sugli aspetti che necessitano di essere migliorati per offrire agli studenti un'esperienza della chirurgia completa nella teoria e nella pratica, nell'insegnamento e nell'apprendimento.

Molti dei partecipanti hanno espresso interesse nel poter avere accesso a maggiori attività in ambito chirurgico, ad esempio con più corsi elettivi dedicati alla chirurgia, corsi di vestizione e pratiche di comportamento in sala operatoria. Questi, insieme ad una aumentata frequenza in sala operatoria, aiuterebbero significativamente a perseguire una preparazione più completa anche in ambito chirurgico.

L'insoddisfazione sulla qualità dell'insegnamento è stata evidenziata dall'82.2% degli studenti che ha espresso una carenza di ore di pratica; questo dato è stato confermato anche dalle basse percentuali di studenti che hanno frequentato più di 5 volte la sala operatoria. I benefici dell'idea di aumentare le ore di pratica chirurgica sono dimostrati da un aumentato interesse degli

studenti per la chirurgia dopo essere stati in sala operatoria, e dall'affermazione degli studenti che una maggiore frequenza della sala operatoria incentiverebbe il loro interesse per la chirurgia.

Infine, considerando l'impatto delle restrizioni imposte dalla pandemia di COVID-19 sull'insegnamento delle materie chirurgiche, la maggior parte degli studenti ha percepito un peggioramento: questo risultato evidenzia nuovamente la preferenza degli studenti per lezioni pratiche e apprendimento attivo. in nunc porta tristisque. Proin nec augue.

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Author Contributions

Conceptualization: GAS, PB, SKS, AS, AV. Data Curation: GAS, PK, AS, AV. Formal Analysis: PB. Investigation and Methodology: GAS, PB. Project Administration: GAS. Resources: PK. Supervision: GAS. Validation: GAS, PB, SKS. Visualization: GAS, AS, AV. Writing – Original Draft Preparation and Writing – Review & Editing: GAS, PB, PK, SKS, AS, AV.

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Supplementary Material

Engagement and satisfaction of medical students in Italy: how are surgical topics taught? (Italian version)

Questo è un sondaggio anonimo che indaga il coinvolgimento e la soddisfazione degli studenti nell'insegnamento della chirurgia nei corsi di Medicina e Chirurgia in Italia.

Non raccogliamo né trattiamo alcun dato personale; la piattaforma utilizzata per il sondaggio è conforme alla EU GDPR.

Rispondendo al questionario presti il consenso all'utilizzo delle tue risposte per finalità accademiche. La compilazione del sondaggio richiederà circa 3 minuti.

Grazie per la tua partecipazione!

* Required

1. Che anno stai frequentando? (se sei fuori corso, scegli l'ultimo anno in cui ti sei immatricolata/o) *

Mark only one answer.

- 1° o 2°. 3°.
- 4°.
- 5°.
- 6°.

Sezione senza titolo

2. Qual'è la tua età?

Mark only one answer.

- 19 anni o meno.
- 20-23 anni.
- 24-27 anni.
- 28 anni o più.

3. Con quale genere ti identifichi?

Mark only one answer.

- Femminile.
- Maschile.
- Senza genere/non binario.
- Altro.
- Preferisco non dirlo.

4. Sei un/a cittadino/a italiano/a?

Mark only one answer.

- Sì.
- No.

5. Qual'è il tuo status occupazionale?

Mark only one answer.

- Lavoro a tempo pieno.
- Lavoro part-time.
- Lavoro occasionalmente.
- Studente a tempo pieno, non lavoro.
- Preferisco non dirlo.

6. In che regione si trova la tua Università?

Mark only one answer.

- Abruzzo Puglia Basilicata Calabria Campania Emilia-Romagna Sardegna
 Lazio Liguria Lombardia Marche Molise Piemonte Veneto
 Sicilia Umbria Trentino-Alto Adige Toscana Friuli-Venezia Giulia

7. Quanto eri interessata/o alla chirurgia quando hai iniziato il tuo percorso universitario?

Mark only one answer.

1 2 3 4 5

Non interessata/o. Molto interessata/o.

8. Quanto sei interessata/o alla chirurgia adesso?

Mark only one answer

1 2 3 4 5

Non interessata/o. Molto interessata/o.

9. Cosa pensi dei corsi frontali (di teoria) di chirurgia che hai seguito fino ad ora nel tuo percorso Universitario?

Mark only one answer

1 2 3 4 5

Per nulla interessanti. Molto interessanti.

10. Sei soddisfatta/o del livello di insegnamento dei corsi di chirurgia?

Mark only one answer

1 2 3 4 5

Per nulla Molto.

11. Pensi che per imparare la chirurgia siano necessari corsi pratici?

Mark only one answer.

- Sì.
 No.
 Non lo so.

12. Cosa pensi dei tirocini in area chirurgica che hai fatto fino ad ora?

Mark only one answer.

- Molto formativi.
 Abbastanza formativi.
 Per nulla formativi.
 Non ho ancora fatto tirocini in area chirurgica.

13. Pensi che i corsi di chirurgia che hai seguito finora includano sufficienti ore di pratica?

Mark only one answer.

- Sì.
 No.
 Non lo so.

14. Quante volte sei stata/o in sala operatoria come attività inclusa nel tuo percorso di studi?

Mark only one answer.

- Mai.
- 1-5 volte.
- 6-10 volte.
- Più di 10 volte.

15. Se sei stato in sala operatoria, la frequenza in sala ha modificato il tuo interesse per la chirurgia?

Mark only one answer.

- No, il mio interesse non è cambiato.
- Sì, il mio interesse per la chirurgia è aumentato.
- Sì, il mio interesse per la chirurgia è diminuito.
- Non sono mai stato in sala operatoria.

16. Quanto frequentemente ti piacerebbe andare in sala operatoria?

Mark only one answer.

- Mai.
- Una volta all'anno.
- Una volta al semestre.
- Una volta al mese.
- Una volta alla settimana.

17. Ti piacerebbe avere la possibilità di fare più attività elettive/corsi che abbiano a che fare con la chirurgia?

Mark only one answer.

- Sì.
- No.
- Non lo so.

18. Cosa potrebbe essere migliorato nei corsi di chirurgia? (Puoi scegliere più opzioni)

Check all that apply.

- Lezioni di chirurgia più interattive.
- Aumentare il numero di crediti formativi dedicati alla chirurgia.
- Aumentare la frequenza nei reparti chirurgici.
- Aumentare la frequenza in sala operatoria per seguire dal vivo gli interventi. I
- Includere corsi di sutura.
- Includere corsi di lavaggio chirurgico e vestizione/ di preparazione di campi sterili.
- Nessuna delle opzioni elencate sarebbe utile.
- Other:

19. Pensi che la pandemia di COVID-19 abbia interessato la qualità di insegnamento/apprendimento delle materie chirurgiche?

*

Mark only one answer.

- Sì, la pandemia di COVID-19 ha impattato in maniera NEGATIVA sulla qualità di insegnamento/apprendimento delle materie chirurgiche.
- Sì, la pandemia di COVID-19 ha impattato in maniera POSITIVA sulla qualità di insegnamento/apprendimento delle materie chirurgiche.
- No, la pandemia di COVID-19 NON HA interessato la qualità di insegnamento/apprendimento delle materie chirurgiche.

Engagement and satisfaction of medical students in Italy: how are surgical topics taught? (English version)

This is an anonymous survey about student engagement and satisfaction with how surgical topics are taught in Italian Medical Schools.

We are not collecting any identifiable personal data, and the platform used for the survey complies with EU GDPR.

By filling the survey you agree that we can use your answers for academic purposes. The time required to fill in the questionnaire is about 3 minutes.

*** Required**

1. What year of University are you enrolled in (if you are fuori corso, choose the last year of enrollment)? *

- 1st or 2nd.
 3rd year.
 4th year.
 5th year.
 6th year.

Sezione senza titolo

2. What is your age?*

Mark only one answer.

- 19 years old or younger.
 20 to 23 years old.
 24 to 27 years old.
 28 years old or older.

3. What gender do you identify as?*

Mark only one answer.

- Female.
 Male.
 Agender/non binary.
 Other.
 Prefer not to say.

4. Are you an Italian citizen?*

Mark only one answer.

- Yes.
 No.

5. What is your current employment status?*

Mark only one answer.

- Employed full time.
 Employed part time.
 Occasional worker.
 Full time student not currently working.
 Prefer not to say.

6. At what region is your University located?*

Mark only one answer.

- Abruzzo Apulia Basilicata Calabria Campania Emilia-Romagna Sardinia
 Lazio Liguria Lombardy Marche Molise Piemonte Veneto
 Sicily Umbria Trentino-Alto Adige Tuscany Friuli-Venezia Giulia

7. How interested in surgery were you when you entered University?*

Mark only one answer.

1 2 3 4 5

Not interested at all. Really interested.

8. How interested in surgery are you now?*

Mark only one answer

1 2 3 4 5

Not interested at all. Really interested.

9. What do you think about the frontal (theoretical) surgery courses included in the curriculum?*

Mark only one answer

1 2 3 4 5

Not interested at all. Really interested.

10. What is your opinion about the teaching of the surgical topics?*

Mark only one answer

1 2 3 4 5

I'm not satisfied at all. I'm really satisfied.

11. Do you think that in order to learn surgery, practice is necessary?*

Mark only one answer.

- Yes.
- No.
- I'm not sure..

12. What is your opinion o surgery clerkships you have had so far?*

Mark only one answer.

- Very useful for my learning experience.
- Somewhat. useful for my learning experience.
- Not usefull at all for my learning experience.
- I did not have surgery clerkships so far.

13. Do you think enough hours of practice were included in your surgical courses done so far?

Mark only one answer.

- Yes.
- No.
- I'm not sure.

14. How many times have you been to an OR (Operating Room) as an activity promoted by the University?*

Mark only one answer.

- Never.
- 1 to 5 times
- 6 to10 times
- Over 10 times.

15. If you have been to the OR, has this experience changed you interest in surgery?

Mark only one answer.

- No, my interest in surgery did not change.
 Yes, my interest in surgery increased.
 Yes, my interest in surgery decreased.
 I've never been to the OR.

16. How often would you like to go to the OR?*

Mark only one answer.

- Never.
 Once every academic year.
 Once every month.
 Once every week.
 Other _____

17. Would you like to have more surgery related electives and/or extracurricular courses?*

Mark only one answer.

- Yes.
 No.
 I'm nt sure.

18. What could be improved in the way surgery is taught in your University?*

Check all that apply.

- Make the lectures more interactive.
 Increase the number of credits dedicated to surgical courses
 Increase the frequency of attendance to surgical wards.
 Increase the frequency of attendance to live surgeries
 Include suture courses.
 Include scrubbing and OR good practice training.
 None of the above would be helpful.
 Other: _____

19. Do you think that the COVID-19 pandemic affected the quality of teaching of surgical topics? *

Mark only one answer.

- Yes, the COVID-19 pandemic affected the quality of teaching of surgical topics in a NEGATIVE way.
 Yes, the COVID-19 pandemic affected the quality of teaching of surgical topics in a POSITIVE way.
 No, the COVID-19 pandemic DID NOT affect the quality of teaching of surgical topics.