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# Barriers for Undergraduate Medical Students to Pursuing Plastic Surgery Training in the UK: A National Assessment of Gender, Regional, and Ethnic Disparities by the STEPS-UK Research Collaborative

**Sydney L.A. Barnes**

sydney.barnes1@nhs.net

Anglia Ruskin University

**Parth A. Tagdiwala**

University College London

**Simpson S.C. Tam**

University of Cambridge

**Ankita Goswami**

University of East Anglia

**Simon Filson**

Guy's and St Thomas' NHS Foundation Trust

**STEPS-UK Collaborative**

STEPS-UK Collaborative

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## Abstract

# Background

Historically, plastic surgery in the UK has been a male-dominated field with limited demographic diversity. Entry into the speciality remains competitive with a 1:6.69 competition ratio. While diversity within the field is rising, it remains unclear if medical students from diverse backgrounds are receiving the appropriate professional developmental opportunities and support required to pursue plastic surgery.

# Methodology:

Institutional ethical approval was obtained. An online questionnaire was developed and distributed nationally to medical students between July and October 2024. The survey aimed to explore what barriers UK medical students face when pursuing plastic surgery training. Statistical analysis was performed using Chi-square and Monte Carlo tests ($p < 0.05$).

# Results

A total of 702 participants (55.1% female; 47.6% Asian, 32.7% White) responded across eight medical schools, significant regional and ethnic disparities were identified in undergraduate plastic surgery exposure. While participation in professional development was consistent across most demographics, non-binary students ($n = 11$) reported significantly greater difficulty navigating these opportunities due to gender identity or expression ($p = 0.006$). 73.5% of respondents remained unsure whether the national selection process was fair. Perceptions of the selection criteria varied significantly based on the gender, region, and ethnicity.

# Conclusion

UK medical students face a significant lack of awareness to plastic surgery training. The findings highlight a "bottleneck" in mentorship and professional development that disproportionately affects certain demographic groups. To ensure a diverse and equitable future workforce, medical schools and national bodies must standardise early exposure, expand mentorship programs, and address the financial and systemic barriers identified by aspiring trainees.

## Background

Historically, plastic surgery in the UK was considered a vastly male-dominated surgical speciality with little demographic diversity within the field. A 2023 UK Surgical Workforce Census Report from the Royal College of Surgeons of England surveying 6,348 members of all surgical specialities, 67% of respondents

were male and 33% were female. Respondents within the plastic and reconstructive surgical field revealed that 57% were male and 43% were female – indicating that plastic surgery has a higher proportion of female surgeons and trainees compared to the overall surgical workforce in England, reflecting progress toward greater gender balance in the speciality[1].

As the speciality continues to evolve, improving representation and access to plastic surgery education are important to maintain an inclusive environment. Early exposure to the field while at medical school as well as super-curricular professional development opportunities play a crucial role in developing plastic surgery interest as a future career.[2–4] Plastic surgery is a competitive surgical sub-specialty with a competition ratio of 1 in 6.69, with only 42 training places available nationwide - an increase of 142.4% from the 2016 ratio of 2.76.[5,6] The increasing competition ratio emphasises the requirement of thorough surgical portfolios tailored to plastic surgery. Clinical placements, effective mentorship, research participation, and skills workshops provide students with opportunities to expand their professional network, develop their surgical skills, and shape their career aspirations.[7,8] In the portfolio scoring matrix, involvement in quality improvement projects, audits, publications, presentations, and teaching experience earns valuable points for specialty applications, significantly increasing the likelihood of progressing to the next selection stage.[9] This highlights the advantage of an early start - attending conferences, networking events, and training sessions during medical school can help accumulate points years before applying for a training position. This is particularly important in plastic surgery, which is often inadequately covered in the undergraduate curriculum.[3,9–11] However, disparities in access to these opportunities, both within and between medical schools, contribute to a skewed demographic in plastic surgery, potentially limiting workforce diversity and reinforcing systemic inequalities in medical education and training.[12]

Studies have identified factors influencing medical students' exposure to plastic surgery and access to career events. The proportion of female plastic surgery consultants has risen from 14.3% (59 of 413) in 2010 to 23.7% (173 of 729) in 2023.[13] Increasing female participation in conferences is a crucial step toward addressing this gender imbalance.[14] As noted by Stewart et al., female representation at the Plastic Surgery The Meeting conference grew significantly from 60 (12.4%) in 2015 to 155 (26.5%) in 2020, yet a considerable gender disparity remains.[15] In addition, the recent British Association of Plastic, Reconstructive & Aesthetic Surgery (BAPRAS) Congress included a Women in Plastic Surgery - Breakfast Symposium to help female students and trainees to find their career role models and gradually reduce the gender gap.

Students from lower socioeconomic backgrounds often face greater barriers to attending national or international conferences, participating in surgical skills workshops and networking events, and undertaking career-inspiring elective placements abroad.[16] While many national conferences rotate between cities, and organisations have hosted academic events across the country, the costs of registration, travel, and accommodation may still limit access, preventing a more diverse pool of attendees.[17] Student-led initiatives, such as the national educational initiatives organised and delivered

by the national Plastic, Reconstructive, and Aesthetic Surgery Student Association of the UK (PRASSA UK), help raise awareness and bridge the gap between students from varying socioeconomic and educational contexts.

Overall, little is known about how participant demographics determine exposure to plastic surgery and access to professional development opportunities. Understanding the extent of this impact is crucial for developing targeted strategies that promote inclusivity and equal opportunities in surgical training.

# Methodology

Aims and Objectives

The study aimed to explore what barriers UK medical students face when pursuing plastic surgery training in the UK and if there is any variation by different demographic characteristics.

Study Design and Data Analysis

The STEPS-UK was national cross-sectional study investigating medical students at UK medical schools. Full institutional ethical approval was received. An anonymised questionnaire was developed for this study by the authors following a review of the literature of UK undergraduate plastic surgery training and questions were reviewed by author SF, a consultant plastic surgeon.

The questionnaire consisted of multiple sections; section 1 of the questionnaire collected basic participant demographics to confirm participant eligibility to be included in the study. Sections 2–5 of the questionnaire collected data on knowledge and perceptions of the current training pathways to becoming a qualified plastic surgeon in the UK, knowledge, awareness and perceptions of the entry requirements, and knowledge, awareness, perceptions and access to professional development opportunities including research projects, audits, poster/oral presentations, mentorships and networking opportunities, plastic surgery electives and attending plastic surgery conferences and courses. Section 6 of the questionnaire focused on collecting information about perceptions and career aspirations in plastic surgery, the aesthetic industry and medicolegal training. However, only the subset relevant to this study (demographics, access to professional developmental opportunities, and perceptions of the national selection process) are reported here. The questionnaire used a combination of question types including multiple choice, Likert scale, dichotomous and open-ended questions. The estimated completion time of the full survey was 10 minutes.

Eight Deans of UK medical schools provided written approval for local data collection. Students across all year groups attending the approved UK medical schools were invited to participate. Participation was voluntary and informed consent was obtained from the participants. Medical students volunteered as research collaborators for this study as part of the STEPS-UK research collaborative, disseminating the questionnaire via student groups, social media channels, and student societies at each approved

medical school. The full list of student research collaborators is listed in **Appendix 1** under STEPS-UK Collaborators. Data collection began on 15th of July 2024 and ended on October 1st, 2024.

The questionnaire was hosted online on a general data protection regulation (GDPR)-compliant platform: Joint Information Systems Committee (JISC) Online Surveys (Bristol, UK). The data were collated into Microsoft Office Excel (.xls) spreadsheets via Microsoft Office Excel 2021 (Microsoft Corporation, USA). IBM SPSS Statistics version 29.0.1.0 (171) software (Armonk, New York, USA) was used to analyse the data. Chi-square tests of independence and Monte Carlo tests were applied with significance set at $p < 0.05$.

# Results

Participant Demographics

A total of 702 respondents were analysed (estimated response rate of 11.9%) and a mean age of 22.1 years. 387 (55.1%) females and 298 (42.5%) males participated in the study. No survey responses were removed. Training level ranged from year 1 to year 5 of the standard 5-year MBChB (and equivalent) undergraduate medicine course, as well as those currently undertaking an intercalation. Most respondents were from East of England (n = 232, 33.0%) and West Midlands (n = 160, 22.8%). Ethnically, the largest groups represented were Asian/Asian British (47.6%, n = 334) and White (32.7%, n = 229) populations. A total of 67.7% (n = 475) of the respondents did not have a previous degree, 24.5% (n = 172) reported having a prior degree, and 7.69% (n = 54) had an intercalated degree. Table 1 details the complete list of participant demographics.

Table 1
Participant demographics

| Category | Subcategory | Count | Percentage (%) |
|---|---|---|---|
| Gender | Female | 385 | 54.8 |
| | Male | 298 | 42.5 |
| | Nonbinary | 11 | 1.57 |
| | Prefer not to say | 7 | 0.998 |
| | **Total** | **702** | **100** |
| Age Group | 18–21 | 321 | 45.7 |
| | 22–25 | 311 | 44.3 |
| | 26–29 | 63 | 8.97 |
| | 30+ | 6 | 0.85 |
| | Prefer not to say | 1 | 0.14 |
| | **Total** | **702** | **100** |
| Ethnicity | Asian/Asian British | 334 | 47.6 |
| | White | 229 | 32.6 |
| | Mixed/Multiple Ethnic groups | 45 | 6.41 |
| | Black, Black British, Caribbean, or African | 44 | 6.27 |
| | Other | 33 | 4.70 |
| | Prefer not to say | 17 | 2.42 |
| | **Total** | **702** | **100** |
| Region | East of England | 232 | 33.0 |
| | West Midlands | 160 | 22.8 |
| | Southwest | 65 | 9.25 |
| | Southeast | 52 | 7.41 |
| | Northwest | 69 | 9.83 |
| | Yorkshire & Humber | 4 | 0.57 |
| | Scotland | 19 | 2.71 |
| | Wales | 98 | 14.0 |
| | Prefer not to say | 3 | 0.43 |

| Category | Subcategory | Count | Percentage (%) |
|---|---|---|---|
| | **Total** | **702** | **100** |
| Previous University Degree | No previous degree | 475 | 67.7 |
| | Previous degree | 172 | 7.69 |
| | Intercalated degree | 54 | 24.5 |
| | Prefer not to say | 1 | 0.14 |
| | **Total** | **702** | **100** |

Exposure to Plastic Surgery

Statistically significant differences were observed across age, region, ethnicity, and prior degree status in relation to exposure to plastic surgery teaching. Age was significantly associated with reported exposure ($p < 0.009$), with participants aged 18–21 and 26–29 more likely to report no plastic surgery teaching, while those aged 22–25 were more likely to report exposure to a short teaching series. Regional variation was also significant ($p < 0.001$). Respondents from the East of England, Southeast of England, and West Midlands were more likely to report no plastic surgery teaching. In contrast, those from the Northwest and Southwest reported a higher frequency of short teaching series. Respondents from Wales were more likely to report receiving both short (< 6 sessions) and extended (> 7 sessions) teaching series. Ethnic background was significantly associated with reported teaching exposure ($p < 0.001$), with Asian participants more likely to receive no plastic surgery teaching while white medical students were more likely to receive a short teaching series. (Fig. 1).

As plastic surgery is usually performed in specialist centres across the UK, not all medical students have the fortune of rotating through a plastic surgery unit. Our questionnaire assessed whether the respondents had undertaken a plastic surgery rotation while at medical school. The data shows that regional variation was significant ($p < 0.001$): respondents from the East of England were more likely to report “no, and I do not intend to”, while those from the Northwest and West Midlands were more likely to respond “no, but I do intend to”. Ethnicity significantly influenced responses ($p = 0.048$): Asian participants were more likely to report “no, but I do intend to”, while Black and Mixed ethnic groups were more likely to respond “yes, and I intended to”. White participants were more likely to report “no, and I do not intend to”.

When asked about how satisfied they felt about the current availability of a plastic surgery placement rotation, students from the East of England and Southwest were more likely to report being “dissatisfied”, while those from the Northwest were more likely to report being “extremely dissatisfied”. In contrast, participants from the Southeast, Wales, and West Midlands showed more positive or neutral responses, with Wales more likely to report being “satisfied” or “extremely satisfied”, and the West Midlands more likely to report being “undecided”, ($p = 0.008$). Previous medical degree status significantly influenced

satisfaction ($p = 0.029$). Participants without a prior medical degree were more likely to report being “undecided”, while those with a previous degrees were more likely to report being “satisfied”.

Student-selected components (SSCs) are modules within the curriculum in which students are given the freedom to choose an area of their choice to undertake further study or research. SSCs may be set by medical schools depending on the availability of SSC supervisors, or may be self-proposed by the students, subject to availability of an appropriate supervisor. SSCs are an opportunity to explore a field that is not covered in the curriculum, more importantly, they are an opportunity to gain research experience in a field that students wish to pursue in a future career. Our questionnaire analysed whether students were aware of any SSCs in plastic surgery that their medical school provides. Gender significantly influenced responses ($p = 0.006$), with females more likely to respond “yes” and males more likely to respond “no”. Regional variation was significant ($p < 0.001$): students from the East of England, Southeast, and Scotland were more likely to respond “yes”, while those from the Northwest, Wales, and West Midlands were more likely to respond “no”. Participants from the Southwest were more likely to be “unsure”. Clinical students were more likely to respond “yes”. whereas preclinical students were more likely to be “unsure” ($p < 0.001$). Ethnicity significantly influenced responses ($p = 0.002$). Asian participants were more likely to be “unsure”, Black participants more likely to respond “no”, and White participants more likely to respond “yes”.

When asked about how satisfied students felt about availability of plastic surgery SSCs, significant differences were found across regions ($p < 0.001$). Respondents from the East of England and Southeast were more likely to report being satisfied or extremely satisfied. In contrast, those from Scotland, Southwest, and Wales were more likely to report dissatisfaction. Participants from the West Midlands were more likely to be unsure.

Participation in Professional Development Opportunities

The students were asked about their perceived level of access or participation in professional developmental opportunities. Students were able to select multiple options including undertaking and publishing research, delivering presentations, attending conferences and courses, teaching, engaging in mentorship, and having leadership experience. This criterion was chosen to be assessed as they feature as weighted items on the core surgical training application as well as the plastic surgery ST3 training application.

The data revealed a marked lack of engagement in research. The common super-curricular activities undertaken were poster presentations (29.3%, $n = 206$), oral presentations (23.8%, $n = 167$), delivering teaching sessions (24.1%, $n = 169$), and research publications (23.1%, $n = 162$). Among the super-curriculars that were hardly accessed were plastic surgery themed electives (5.0%, $n = 35$), attending plastic surgery conferences (10.4%, $n = 74$), and plastic surgery courses ($n = 48$). Of the respondents who presented posters, the male to female ratio was 1:1.31; there were 90 (43.7%) Asian students, 67 (32.5%) White students, 15 (7.3%) Black students, and 13 (6.3%) Mixed-race students. However, there was no significant difference among the opportunities accessed by all the demographics. 25.5% ($n = 179$) of

students reported not participating in any professional developmental opportunities at all, out of which 54.2% (n = 97) were female. Out of those who did not participate in any professional developmental opportunities, there was no apparent disparity in access with regards to gender as the distribution was relatively equal; the male to female ratios for White students was 1:1.89 and 1:0.60 for Asians, Black and Mixed ethnic groups.

Multiple known factors can deter students from pursuing a surgical career. The five factors that this study assessed were perceived exclusion from career progression based on gender identity/expression, difficulty managing a work-life balance with conflicting commitments/family responsibilities, financial constraints and implications, competitive applications, and a lack of mentorship/guidance from senior colleagues in the field. The questionnaire asked students to rank these factors in order of increasing perceived difficulty navigating during plastic surgery training. In increasing order of perceived difficulty to navigate, students ranked exclusion based on gender identity as least difficult, followed by conflicting commitments, followed by financial constraints, then competitive applications, and finally students ranked the lack of mentorship and guidance as the most difficult aspect of professional development **(Fig. 2)**. Notably, there was a significant relationship between gender and the degree of difficulty experienced in navigating professional developmental opportunities because of “exclusion due to gender identity or expression”, $\chi 2$ (4, (N = 674)) = 14.27, p = 0.006. Non-binary students were most likely to rank this aspect as more difficult as post hoc comparisons indicated that the mean rank for the nonbinary students was significantly greater than that for the male students ($p < 0.001$) and that for the female students (p = 0.003). However, there was no significant difference between the male and female rankings (p = 0.055).

There was a significant relationship between region and the degree of difficulty experienced in navigating “conflicting commitments such as family responsibilities”, $\chi 2$ (8, (N = 674)) = 16.78, p = 0.032. The mean rank for this aspect across the regions can be seen in Table 2. Post hoc comparisons indicated that the perceived difficulty for Scottish students was significantly greater than those for the other regions: Wales, p = 0.005; Southeast, p = 0.003; East of England, p = 0.032; and West Midlands, p = 0.041. No significant relationships were detected between Scotland and the other regions.

Table 2

**Ranking of conflicting commitments by geographical region.** On a scale of 0 to 1, a numerical value closer to 1 indicates increasing perceived difficulty of conflicting commitments on access to professional development.

| Region | Mean inverse rank of conflicting commitments |
|---|---|
| East of England | 0.295 |
| Northwest | 0.283 |
| Scotland | 0.250 |
| Southeast | 0.321 |
| Southwest | 0.288 |
| Wales | 0.314 |
| West midlands | 0.292 |
| Yorkshire and Humber | 0.272 |
| **Total** | **0.296** |

The effectiveness of medical school support in facilitating participation in professional development opportunities in plastic surgery was assessed. A total of 45.7% (n = 321) of the students reported that their medical school effectively supported them in participating in professional development opportunities, whereas 28.2% (n = 198) reported that the support they received was ineffective.

Perceptions of National Selection Criteria

Students were asked about their perceptions of the selection criteria to enter plastic surgery training in the UK. The students were asked whether they believed that the plastic surgery national selection criteria adequately assess candidates' abilities and competencies for the speciality.

Overall, 73.5% (n = 516) of respondents were "unsure" whether the current national selection process effectively evaluates applicants' competencies, while only 44.6% (n = 313) believed the process should undergo revision. Similarly, when asked about fairness, 58.4% (n = 410) reported being unsure, with 24.5% (n = 172) considering the process fair overall.

Statistical testing revealed the significant relationships between demographics and perceptions. For the question on adequacy of the selection criteria, there were significant relationships with both gender ($\chi 2$ (8, (N = 702)) = 31.67, $p < 0.001$) and region ($\chi 2$ (16, (N = 702)) = 48.54, $p < 0.001$). Females were more likely to report uncertainty, whereas males were more likely to respond affirmatively. Regionally, students from East England were more likely to report being unsure, whereas those from the Northwest and West Midlands more frequently considered the selection process adequate.

Similarly, perceptions of the need for revision of the selection process were associated with gender ($\chi 2$ (8, (N = 702)) = 29.45, p = 0.005) and region ($\chi 2$ (16, (N = 702)) = 32.66, p = 0.020). Female students and those from East England, Northwest, Southeast, Wales, and West Midlands were morel likely to select “unsure”, while male respondents were more likely to respond “no”. Perceptions of fairness varied across training level ($\chi 2$ (25, (N = 702)) = 45.72, p = 0.011), implying that understanding of the selection process may improve with seniority.

Collectively, these findings indicate substantial uncertainty among the student sphere regarding both the adequacy and fairness of the plastic surgery national selection process. The high number of “unsure” responses suggests limited familiarity with how trainee selection operates – reflecting broader deficiencies in undergraduate awareness of postgraduate surgical training pathways.

Students were asked to rate to relative weighting of key portfolio requirements in the plastic surgery national selection. Surgical theatre experience was the most frequently rated as highly important (44.3%, n = 311), followed by publication of plastic surgery-related research (41.6%, n = 292) and obtaining prizes, awards, and distinctions (40.7%, n = 286) **(Fig. 3)**. Significant demographic differences were observed. Female respondents were more likely than males to assign higher or moderate weighting to surgical theatre experience ($\chi 2$ (16, (N = 702)) = 53.95, p = 0.002), whereas male respondents more frequently assigned lower weighting. Regional differences were also evident in perceived importance of organising plastic surgery-themed teaching $\chi 2$ (32, (N = 702)) = 56.42, p = 0.013); students from East of England, Southeast and West Midlands were more likely to select “moderate weighting” while those from the Northwest more frequently selected “high weighting”. Ethnicity was significantly associated with perceptions of two aspects: obtaining prizes, awards and distinctions and organising/attending plastic surgery electives. Mixed or White students more likely to assign lower weightings to prizes and awards, while Asian/Asian British students were frequently selected moderate weighting for organising higher weighting to plastic electives.

# Discussion

The cohort comprised of a largely balanced representation of male and female students, although a slight female predominance was noted (55.1%). This aligns with the current gender distribution across the UK medical schools – females represent most medical school entrants. However, the continued underrepresentation of women in surgical training posts, including plastic surgery, suggests that early educational exposure alone may not be enough to tackle the gender inequality. Structured mentorship programmes tailored to empowering females may help in solving the disparity.[18,19]

Ethnic diversity within the survey cohort was notable; nearly half of the respondents identifying as Asian and one-third as White. This is evidence of the increasing multicultural composition of medical schools’ cohorts in the UK but reinforces the need to make sure that pathways into surgical specialities remain equitable and inclusive across all backgrounds. Previous studies have identified varied access to

mentorship, research and elective opportunities among different ethnic groups, which may contribute to a loss of confidence in pursuing competitive specialities like plastic surgery.[20]

Marked variability in exposure to plastic surgery was observed across demographic and regional groups. Opportunity is not equally distributed; age, region, and ethnicity were all significantly associated with differing levels of exposure. The finding that medical students in the Southeast, East of England and West Midlands received less formal teaching. This may be due to the nature of plastic surgery services in the National Health Service which are predominantly at regional tertiary centres across the UK. Medical schools in the area without an affiliated plastic surgery department may lack the faculty to deliver formal teaching during pre-clinical lectures or during clinical hospital placements.

Knowledge and Perceptions of the Plastic Surgery Training Pathway

Only 27.6% of the surveyed medical students were familiar with the UK plastic surgery training pathways. This is expected, as most medical students rely on online resources for education, which can vary significantly in quality. Given that plastic surgery is an underrepresented speciality at medical schools, it is no surprise that information about its career progression and portfolio requirements might not be readily accessible. Some institutions have organised educational initiatives to compensate for the paucity of plastic surgery in the undergraduate curriculum. Online teaching series have been a common educational initiative and have supported student confidence and knowledge suggesting a useful and feasible approach.[21,22] Nevertheless, the quality and content of a teaching series organised by different institutes can be heterogeneous and difficult to compare.

Access to Professional Development Opportunities

The plastic surgery and core surgical postgraduate training pathways have research and audit requirements. As expected, the most accessible professional development opportunities were poster/oral presentations, publications, and audits. Although this study did not report any differences among various demographic groups in accessing these opportunities, the literature suggests that medical students with less well-funded plastic surgery departments or programmes and less research experience may be unable to access research and audit opportunities.[23]

Mentorship plays an integral role in developing well-rounded surgeons; mentorship was a component that was valued universally across all the demographic groups in this study. However, a perceived lack of mentorship was ranked second most difficult in accessing professional development opportunities. Although formal plastic surgery mentoring programs exist nationally, such as the BAPRAS or BAAPS mentoring schemes, many of these programs are directed at postgraduate doctors who are either in surgical training or have completed their training.

Internationally, plastic surgery is regarded as a competitive speciality.[24] The American National Residence programme reported that the integrated plastic surgery programme had a competition ratio of 2.3 as of 2024. The UK boasts an even higher ratio of 6.69 for ST3 entry.[5] With recent media coverage of

the speciality training bottleneck and NHS funding issues, the threat of not securing a training position is an area of concern. Medical students are not strangers to these current issues faced by the NHS; thus, it is unsurprising that most participants ranked competitive applications as the greatest challenge in accessing professional development opportunities. It is suggested that medical schools could better promote and encourage access to academic super-curricular activities at an early stage.

Most regions place significant value on family responsibilities, which are often seen as barriers to career progression, particularly for female trainees. Owing to training, female surgical trainees often attempt to delay having children[19]. It is evident that gender plays a role in accessing professional development opportunities at all stages of training. Although the survey demonstrated that non-binary students significantly perceive a barrier to accessing professional development opportunities, the small cohort of individuals reporting this barrier makes it difficult to ascertain the true value of this finding.

## Limitations

Although the sample size of 702 participants is substantial for a specialised survey, it represents only a fraction of the total UK medical student population. As formal power calculations were not performed prior to data collection, the statistical significance of certain findings should be interpreted with caution, as the study may not be sufficiently powered to detect smaller effects across all demographic subgroups. The novel questionnaire, although carefully composed by the authors, was original and not formally validated.

The study is subject to self-selection (responder) bias. Participants who chose to complete a survey on plastic surgery are likely to have a pre-existing interest in the field or strong opinions regarding the training pathway. Consequently, these findings may not be generalisable to the broader medical student body, including those who are undecided or uninterested in the specialty.

Finally, the cross-sectional nature of the survey limits its ability to establish causality or explain the underlying reasons for the identified demographic and regional variations. While the study identifies *where* disparities exist, it does not fully explore *why* they occur. Further qualitative research, such as interviews or focus groups, is required to identify the root causes of these inequalities and to develop targeted strategies for improving access to surgical training.

## Conclusion

There are significant differences in the exposure to plastic surgery, participation in professional development opportunities and access to professional development opportunities amongst different demographics. Further qualitative research is essential to uncover the underlying socio-economic and institutional drivers of these disparities. Addressing these barriers is a critical next step in fostering a more inclusive, equitable, and diverse future workforce in plastic surgery.

## Declarations

# Author Contribution

Sydney L.A. Barnes and Parth A. Tagdiwala are joint first authorsSB: Conceptualisation, Survey Design, Methodology, Collaborator Recruitment, Ethics Approval, Project Administration, Formal Analysis, Manuscript Preparation.PT: Survey Design, Collaborator Oversight, Project Administration, Formal Analysis, Manuscript Preparation.ST: Survey Design, Collaborator Oversight, Project Administration, Manuscript Preparation.AG: Data Collection, Formal Analysis, Manuscript Preparation.SF: Conceptualisation, Survey Design, Manuscript Preparation, Project Supervision.STEPS-UK Collaborative: Collaborative authorship: see appendix for full list of contributors.

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# Data Availability

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

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## Figures

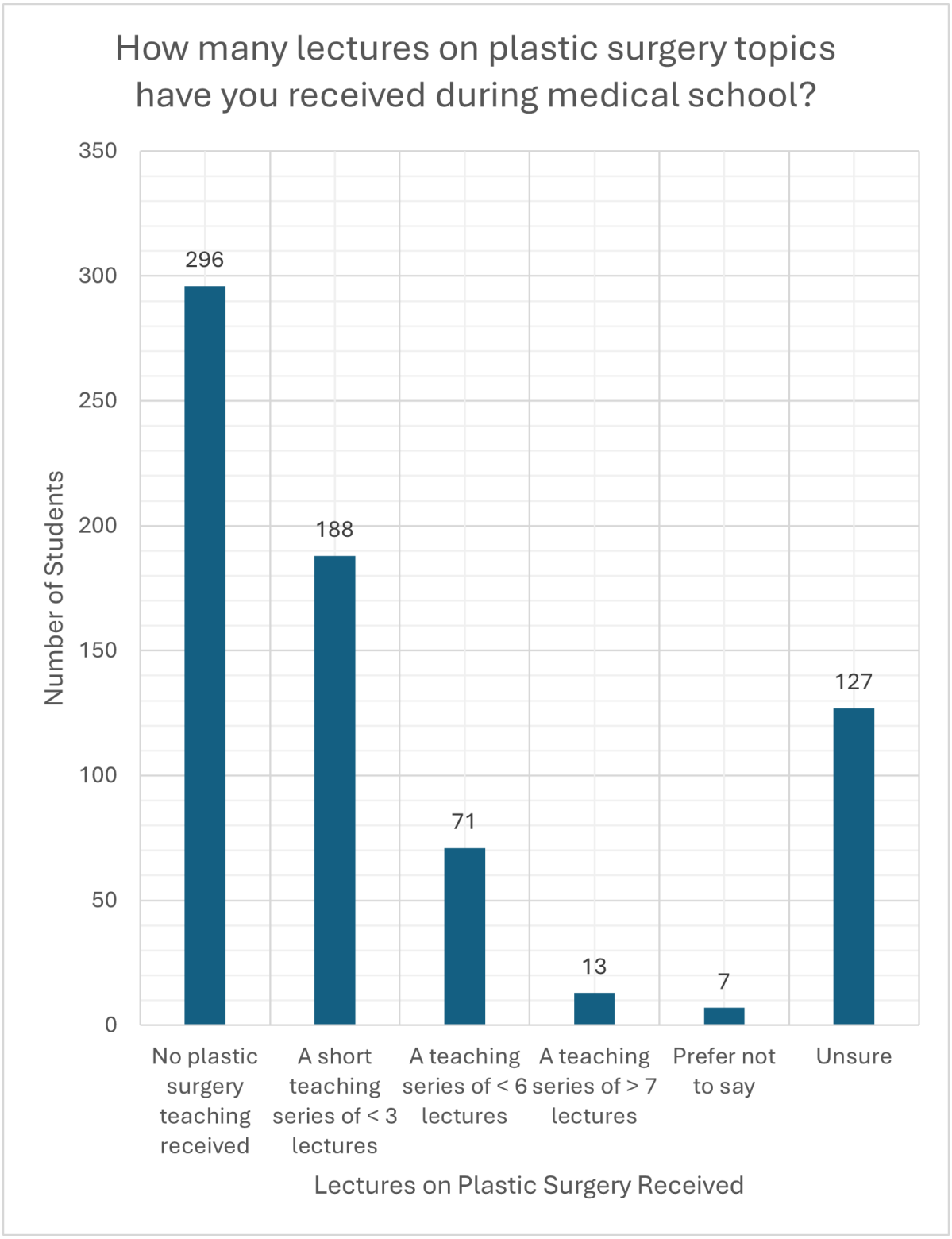



**Figure 1**

**Response to "How many lectures on plastic surgery topics have you received during medical school?".**

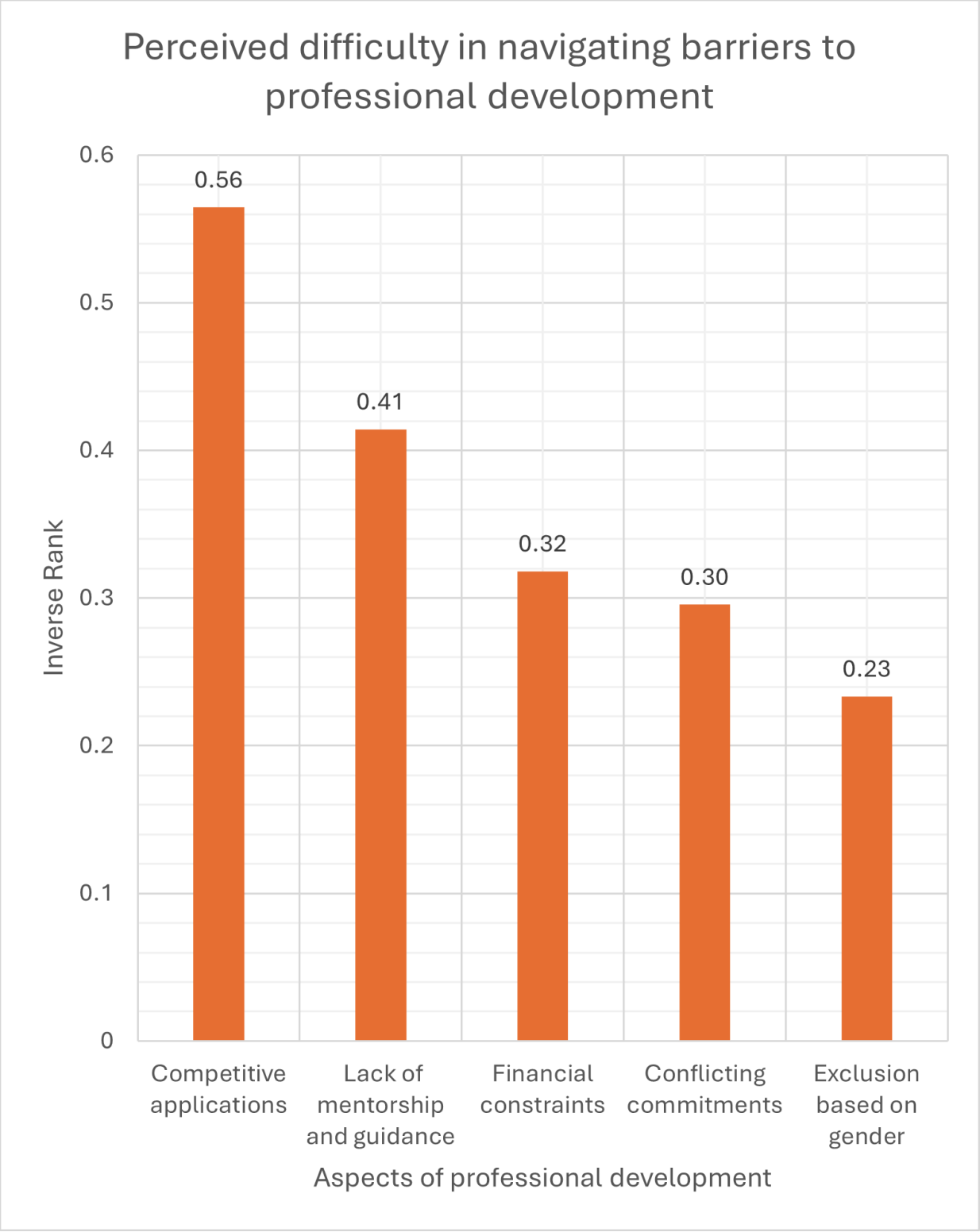



**Figure 2**

**Perceived difficulty in navigating barriers to professional development in plastic surgery training.** A numerical value closer to 1 indicates increasing perceived difficulty of barriers to professional development.

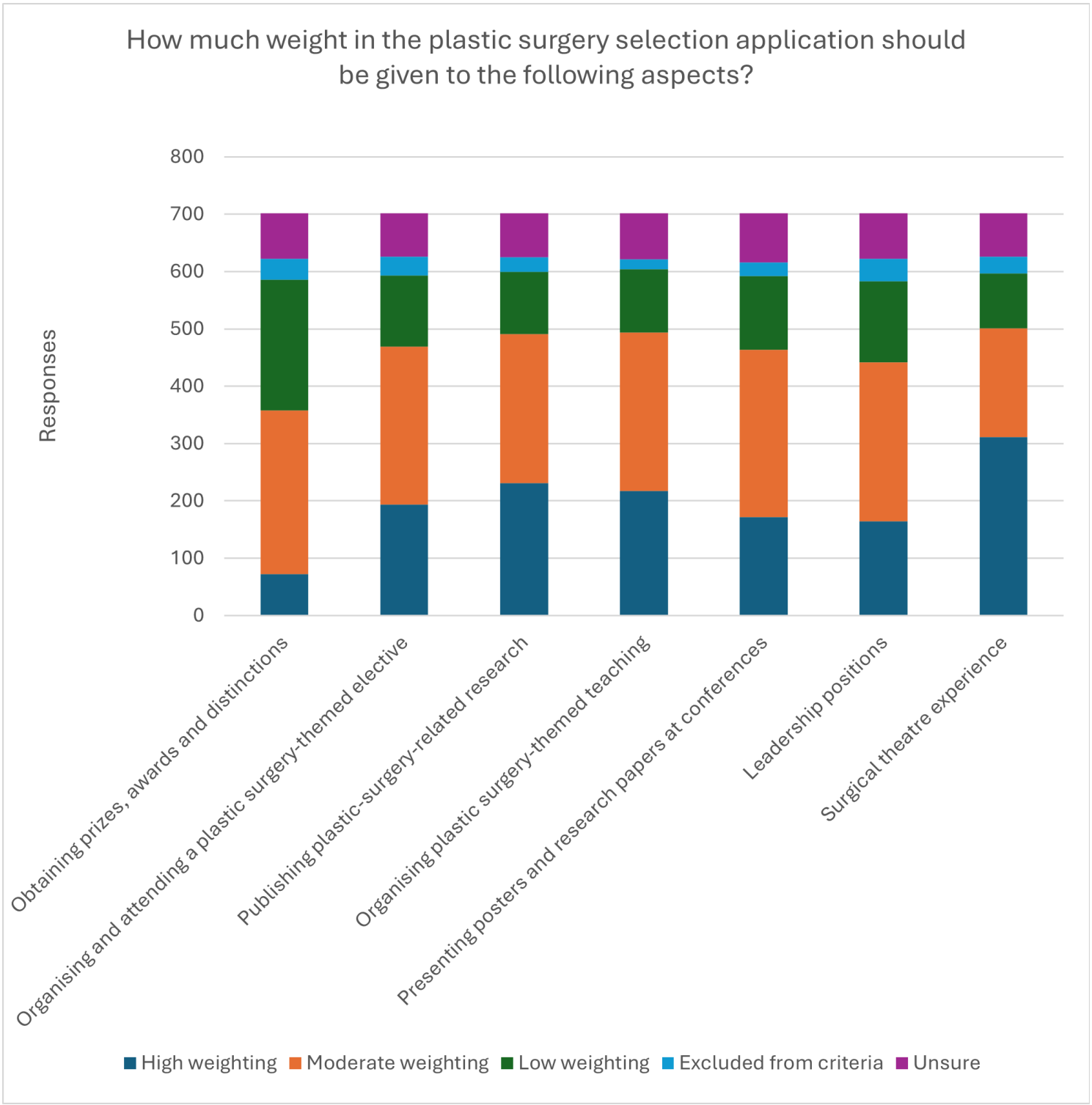



**Figure 3**

**Suggested weighting of components on the plastic surgery training application.**