Barriers and facilitators to engagement within teaching and learning during medical school: a nationwide cross-sectional questionnaire to encourage inclusivity and engagement

Authors: Michael Harrison, Nicola Clarke, Agalya Ramanathan, Yath Premadasan, San Rolfe, Etienne Royer-Gray, Hamer Hunt, Sophie Park

1. Newcastle University
2. Department of Primary Care and Population Health, UCL
3. City St George's
4. University College London

Abstract

Background

There is significant academic interest in understanding the role academic institutions play in perpetuating an awarding gap seen between different groups of medical students. This paper sought to understand medical students' attitudes towards, and barriers and facilitators to engagement in, learning during medical school; and, in doing so, develop a series of recommendations to encourage inclusivity and engagement.

Methods

A cross-sectional online questionnaire was administered to UK medical students. Quantitative data relating to student participation was analysed descriptively. Quantitative data was then triangulated with qualitative responses to understand the key barriers and facilitators to engagement, which were grouped into key themes. We discussed the results with student participants to produce a matrix of recommendations.

Findings

207 students responded to the survey. Respondents expressed a range of attitudes towards learning at medical school. Four themes arose in relation to barriers and facilitators to engagement: 1) Learning environment. 2) Access to resources. 3) Personal cost of attending placement. 4) Vulnerability to change. Recommendations developed in conjunction with student participants included increasing the tariff for travel reimbursement and providing flexible paid working opportunities for students.

Conclusion

Our paper provides insight into the challenges faced by medical students in engaging with teaching and learning during medical school. We have demonstrated that students may face a range of challenges engaging with learning, which may be contributing to an awarding gap seen. We recommend that medical schools utilise the recommendations from this study to inform local dialogue and co-create local solutions.

Key words: awarding gap, differential attainment, widening participation, Covid-19, engagement

Introduction

Despite widening participation efforts at UK medical schools (1), there is an awarding gap associated with various factors, including race and socio-economic status (2-6). Discussion frequently centres around the 'student deficit model', which describes some students as lacking academic and cultural resources (7). However, universities are increasingly being put under the spotlight (7-9). A recent study by Brown, Goss (8) demonstrated variation in AGs amongst medical schools, highlighting the important role that medical schools may play in influencing medical students' academic success and development.

However, whilst the reasons for differential attainment have been explored within postgraduate training (10) the mechanisms explaining this phenomenon within undergraduate medical education remain poorly understood (8). Curricula, assessment, and faculty diversity have all been suggested as factors that may be contributing to the AG (8). There is also increasing concern regarding poor attendance within medical school (11).

In this study, we sought to explore how student experience during medical school may be influencing engagement with learning. In doing so, we hope to identify barriers and facilitators to student participation in teaching and learning activities and develop a series of recommendations aiming to maximise widening participation, improve access to equitable educational experiences and promote student engagement with learning.

Objectives

To elicit barriers and facilitators to participation in learning, and students' perspectives of teaching activities, with a view to producing recommendations to support access and engagement.

Research questions

1. What are the attitudes of UK medical students towards teaching and learning activities undertaken during medical school?
2. What are the barriers and facilitators to student participation in these teaching and learning activities?
3. What affordances ought to be made to improve access to equitable educational experiences and promote student engagement?

Methods

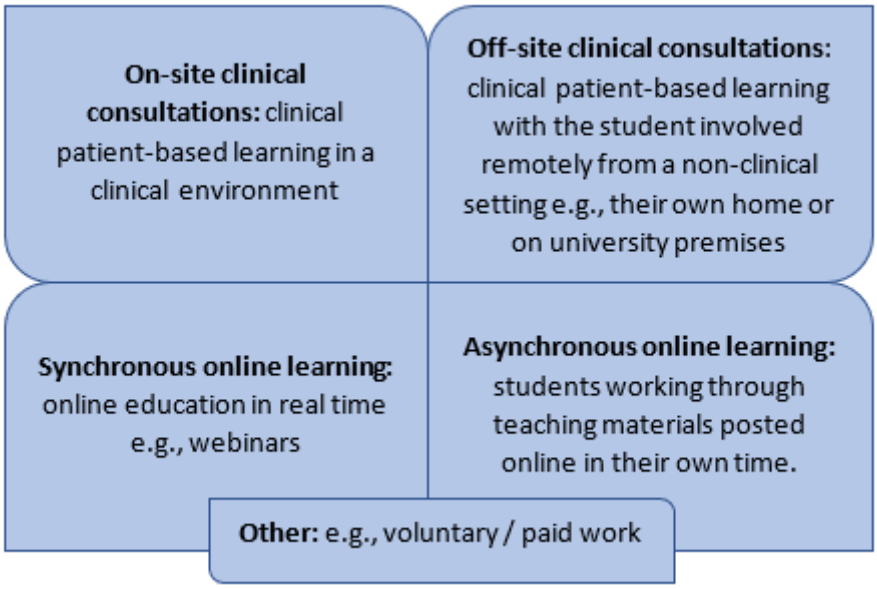
Design

A cross-sectional questionnaire study of UK medical students.

Development of online survey

Patients and primary care medical education leaders were consulted at a Society for Academic Primary Care (SAPC) Special Interest Group meeting in August 2020. Five categories of participation were identified. See Figure 1.

Figure 1: Categories of student participation



Questions aimed to establish categories students participated in to provide context. Further questions explored student attitudes as well as barriers and facilitators to involvement.

The survey includes multiple choice questions, short and long answer questions, and Likert scales (see appendix 1). The survey was piloted with five medical students from Newcastle University.

Participants and survey distribution

The survey was distributed between 11th December 2020 and 29th May 2021, during the covid-19 pandemic. This rapid shift in medical education from face-to-face onto virtual platforms provided a unique context in which access to educational resources were acutely compromised. We believe that this context adds to the study by accentuating differences in educational experience amongst students.

The survey was distributed by leads for undergraduate primary care teaching (SAPC GP Heads of Teaching). Further recruitment occurred via the authors' twitter feeds, and those of a Royal College of General Practitioners representative and student societies at collaborating universities.

Analysis

A descriptive analysis of quantitative data was performed to outline teaching and learning activities students experienced during the study period

Attitudes around learning environments were assessed via descriptive analysis of quantitative responses. To understand barriers and facilitators, descriptive quantitative data was reviewed, and triangulated with free text comments. The data was iteratively reviewed, with agreement of dominant themes, by the authors in regular virtual data clinics. To identify mitigations against barriers to equitable educational experiences and promote student engagement, we produced a matrix of recommendation via discussion of the results with several student participants.

Patient and Public Involvement (PPI)

This study was initiated through student and PPI discussion about pandemic educational experiences. This included a National Institute for Health Research School of Primary Care Research funded PPI group discussion [14]. The analysis was also reviewed by a PPI representative.

Positionality

MH, NC, AR and SP are academic GPs with interests in medical education. Other authors include JHH (PPI representative) and SR, ER and YP (medical students).

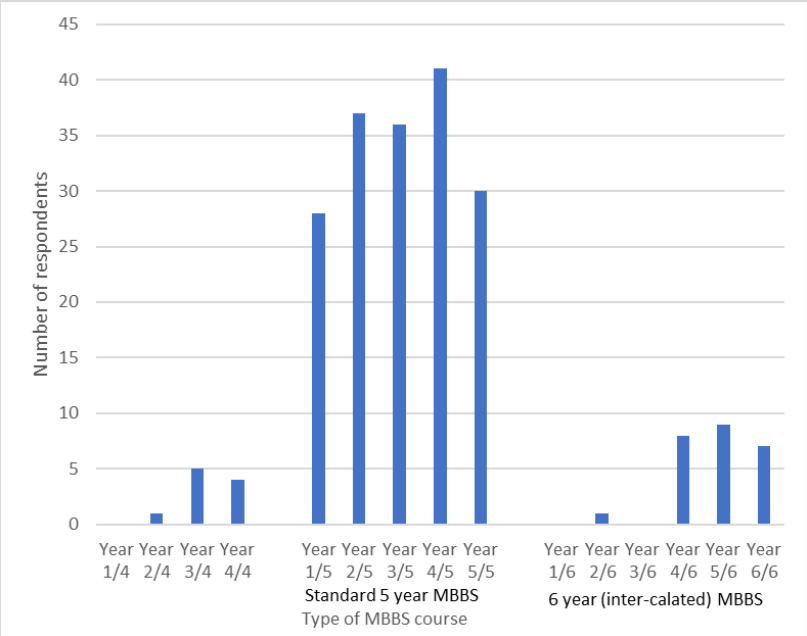
Ethical approval

Ethical approval was granted by the UCL Ethics Committee. Ethics ID: 18763/001

Results

Participant demographics

Figure 2: year of study and course-type



207 students responded from eight universities: Newcastle University School of Medical Education (n=90); University College London Medical School (n=2); Brighton and Sussex Medical School (n=1); University of Bristol Medical School (n=1); University of Dundee School of Medicine (n=6); University of Glasgow School of Medicine (n=65); University of Sheffield Medical School (n=23); and St George's, University of London (n-7).

Figure 3 shows the year of study and course type of respondents. Most (140, 68.3%) had undertaken clinical placements prior to the March 2020 lockdown; with 90.3% (186) reporting their 2020/2021 academic year would ordinarily have included clinical placements.

Results

Categories of student participation

Figure 3 demonstrates the types of learning activities undertaken by survey respondents

Clinical on-site learning	**Clinical off-site learning**
• 58.5% (120/207) of students had been on clinical placement in recent months.	

<table>
<tr>
<td>

The majority (85.8%) of students who had been on placement reported seeing patients both face-to-face and remotely. 3.3% (4/117) only saw patients remotely.
Of students who had consulted remotely, 83.8% (104/124) had undertaken telephone consultations and 37.9% (47/124) had undertaken video consultations.

</td>
<td>

33% (68/207) of students participated in this type of learning.
46.3% (30/68) had used telephone consulting and 59.7% (40/68) had participated using MS Teams or Zoom.
66.2% (45/68) participated in consulting directly with a patient with a clinician observing, 42.6% (29/68) observed a clinician consulting and 39.7% (27/68) consulted without observation.
Most students (82.4%, 56/68) were based at home.

</td>
</tr>
<tr>
<td>
Synchronous online learning

96.1% (198/207) experienced this type of learning
Various platforms were used, including Zoom (77.3% of respondents) and Microsoft Teams (74.7% of respondents).

</td>
<td>
Asynchronous online learning

94.2% (195/207) participated in asynchronous online learning.
92.3% of these students engaged with PowerPoint slides and 93.7% watched pre-recorded lectures.
Teaching materials were mostly developed by university staff (93.3%) and clinicians (87.6%).
45.9% reported opportunity for interaction and feedback, via email (61.8%) and interactive polls, chat forums, and written essay feedback.

</td>
</tr>
<tr>
<td colspan="2">
Other Clinical Experiences

36.4% (75/207) of students undertook paid work including: healthcare assistant, NHS 111 advisor, domestic, carer, phlebotomy, GP receptionist, online tutoring and working in supermarkets.
13.6% (28/207) students volunteered, including at flu vaccination clinics, hospices and soup kitchens.

</td>
</tr>
</table>

Figure 3: Categories of involvement

Attitudes towards teaching activities

On-site clinical learning

Students reported this as being the most useful method (192/207, 92.6%); they felt it most closely reflected their future role. Students valued opportunities to develop clinical skills, interact with patients and staff, and receive feedback. They were less enthusiastic about passive observation.

"It is so much easier to learn in the environment we will be expected to practise in the future, and remembering the content is far easier when we can link cases to real patients." - response 70710769

Off-site clinical learning

Students were reserved about consulting remotely from a non-clinical setting, with only 76/207 (36.7%) students noting relevance to future practice.

"The lack of practice in clinical examination will make me less competent when we return to face-to-face settings"- Response 70426922

Whilst some recognised its educational value, problems included technological difficulties for themselves or patients and lack of access to patient records. 9.7% of students stated they would not be able to access a private space at home. Only 42.6% (29/68) of students had received training on confidentiality and information governance.

Synchronous online learning

Whilst 144/207 (69.6%) students agreed this method was fit for purpose, only 37.2% (77/207) agreed they would like more.

Students appreciated opportunities for interaction and feedback. 120/198 (60.6%) reported technological issues; others noted staff struggling with online platforms. However they valued the structure afforded by this form of online learning.

"Live events are helpful as they give structure to the working day"- Response 70123098

Asynchronous on-line learning

87/207 (42.0%) felt this was similarly beneficial to synchronous learning, however 54.5% ranked asynchronous learning as least useful.

Many students struggled to engage due to minimal interaction and the self-directed nature. Other issues included a lack of timetable, overwhelming amounts of materials and "under-developed" resources.

"Useful for learning the facts but not great for applying information to clinical practice and often felt as though they had been rushed" - response 70118628

However, some enjoyed the flexibility of working at their own pace and revisiting materials.

"I saved myself over 2 hours of travel time for lectures that can easily be done at home, and in my own time." - response 71749835..

Other activities: paid or voluntary roles

Students reported feeling that they could genuinely contribute to patient care in their additional roles.

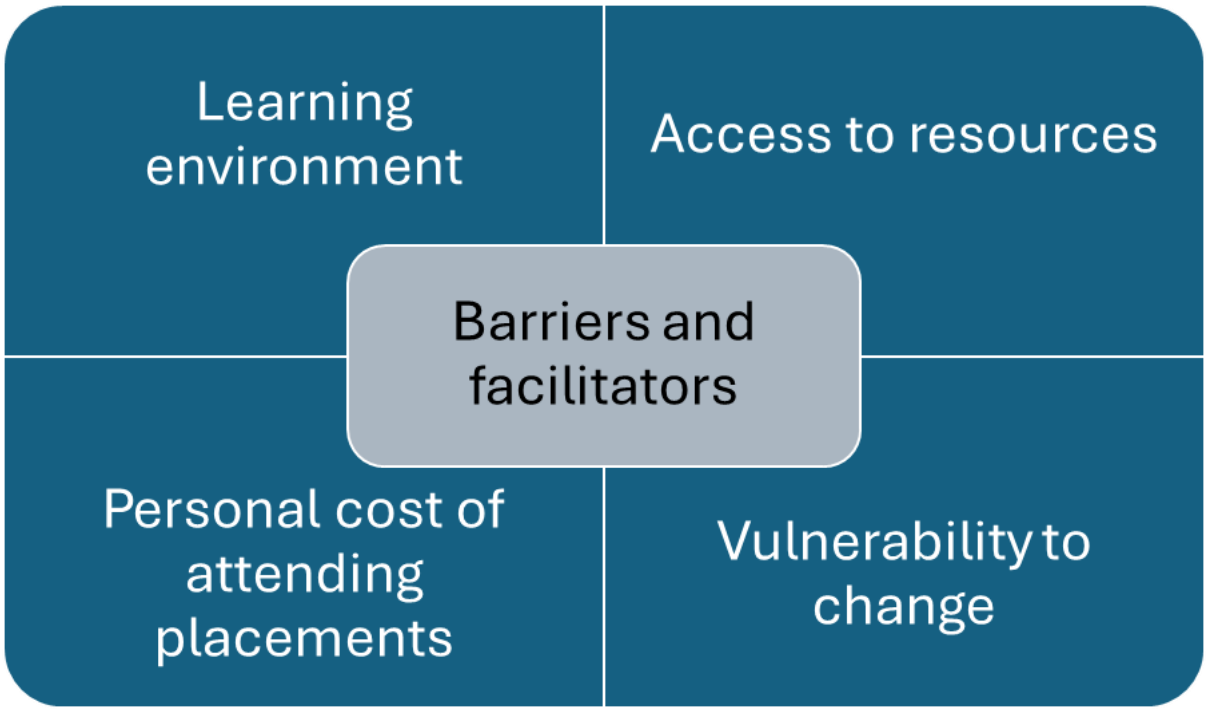
".... when I am at my paid job, I would consider myself an essential worker." - response 71680145.

In contrast, whilst on clinical placement, students felt like their presence was a 'bother' to staff, and they often considered their roles as 'learners', as opposed to 'service providers'. They reported feeling like they could not contribute to care and often didn't feel part of the team.

"A student …cannot contribute to their care in any meaningful way (whilst on clinical placement)"- response 70118488

Barriers and facilitators to participation in teaching activities

Four themes arose (Figure 3). A narrative account of each of the themes is described thereafter.



Learning environment

Most students (82.1%, 55/67) were based in their own home rather than a university or clinical location, for clinical off-site patient-based teaching. 13.4% (9) were based in a university-provided space. Students reported that they would struggle to find an appropriate space (15% or 20/133). Students reported that even within clinical environments they were often not allocated private spaces for learning.

Students reported issues such as poor internet (91.9%) and issues with personal devices (48.6%) or devices on campus (16.2%). Similar issues were reported in relation to synchronous non-patient-based teaching and asynchronous learning.

Many students highlighted concerns with maintaining patient confidentiality and professionalism, as a result of not having private space.

"I'd struggle to maintain patient confidentiality, and also I'd feel unprofessional/uncomfortable using video consulting where a patient could see my own house, especially because it would be my bedroom!!" - response 73562956

These challenges seemed to disproportionately affect respondents living in smaller accommodation, sharing with others working from home, or providing childcare:

"My house isn't big enough for me to consult without my husband's telephone calls being audible in the background. My son has no wrap-around care at school at the moment, so he is home from 3.15 every day." - response 71329105

Access to resources

Clinical off-site, asynchronous and synchronous learning interventions were delivered via online learning platforms and video-conferencing software.

For clinical off-site/remote learning, most students reported using their own personal PC/Ipad (56 students or 83.6 percent) compared to 14.9% (10 students) who had access to an NHS device.

In order to ensure confidentiality, students reported using earphones (53.7 percent or 36 students) or a neutral screen background (26.9 percent or 18 students) whilst 98.5 percent were in a private room.

Personal cost of attending placements

Costs to students included financial and time opportunity costs.

Some students relied upon public transport to attend clinical placements, which was often unreliable. Even if transport was available, students faced the dilemma of risking their and their family's safety during the pandemic. Students noted that other students who they previously shared lifts with were reluctant to do so during that time.

"Due to reduced services and removal of night tube it can be difficult to get in for 8am on the weekends similarly finishing late created a tough decision on how to get home in the dark" -response 73539388

Some students cited protected characteristics such as disability or shielding status as impacting attendance:

"Taking public transport is difficult due to personal disability, a risk to my partners health as they are in shielding category and it is 1.5hours each way (30 min drive)" - response 71288455

Students also reported repercussions for lateness due to issues with public transport.

Vulnerability to changes

73 (36%) of participants undertook paid roles in addition to their studies.

Some students were dependent on others in situations where public transport became restricted.

These students were more vulnerable to changes, and often reported feeling unsupported by their medical school in accessing support, for example with last minute time-tabling changes.

"Public transport is hugely expensive ... I found it hugely discriminated against people who did not have their own cars and the bursary that we got from the medical school to help this does not scratch the surface" - response 70134624

Matrix of recommendations

Figure 4 demonstrates the key recommendations produced through discussing the key findings with student representations

Barrier to engagement with learning	Student meeting discussion	Key recommendations
Difficulty with transport	Students experienced difficulties claiming reimbursement for travel expenses. This included: - Having to log onto multiple systems to claim expenses; - Time delays in receiving reimbursement. Students reported disparities between local allocation tariff and NHS bursaries. Currently, the travel costs for placements are substantial and felt not being claimed/ refunded in their entirety.	Tariff for travel reimbursement needs to be increased if covered locally (and issued in a timely way), or the NHS bursary used as an exclusive route and better funded to ensure timely and appropriate expense claims.
Access to IT devices, internet connections and wifi	Students discussed initiatives at their local medical schools in which students receive i-pads that can be used in clinical and non-clinical environments. These were perceived to support learning, and ensure equitable access to IT.	Access for all students to IT devices during all phase of medical studies.
Caring commitments	Students reported that peers are not aware of support or struggle additionally as a result of caring commitments and issues related to placements such as distances, or last-minute changes in timetabling.	Access to additional funds or childcare provisions Improving awareness of support for example through written resources or guidance Flexibility in timetabling to accommodate students with additional commitments
Having to carry out paid work	Students reported that a significant proportion of medical students now undergo paid work to support their studies. Key factors which influences how medical students juggle paid work alongside medical studies includes: - Flexibility; - How the additional work compliments/competes with medical studies. For example, working as a tutor for science school students can be flexible and lucrative.	Increase in NHS bursaries for those from lower income backgrounds. Provision of flexible paid work opportunities that compliment medical training and minimise impact on medical studies e.g. tutoring. Provide opportunities for paid work that complement learning done during formal medical studies, which includes opportunities for sign-off of mutual clinical competencies and/or statutory learnings e.g. Basic Life Support training, within these roles.

Learning environment	Students reported that finding access to appropriate private spaces to learn whilst on university campus was generally not an issue. Students did, however, experience challenges finding appropriate spaces for private study whilst on clinical placement	Treating students as adult peers when on clinical placement. Increase student sense of belonging and sense of value, so students can negotiate with local staff. Consider innovative ways of booking spaces whilst on clinical placement. Consider integration of local administrative (as well as clinical academic) teams placed in District General Hospitals or primary care admin teams,
Vulnerability to changes	Although a wide range of potential support mechanisms are in place for university students, they can be confusing and difficult to navigate. This can cause additional stress. Students reported that some of the application processes, e.g. for bursaries, can be difficult to navigate. Students reported that, even in the absence of last minute timetabling changes, compulsory activities are often held at different sites which can create unexpected costs for students. It was accepted that there was a need for universal support for all medical students, plus increased accessibility where additional support is needed.	Make it easier to apply for bursaries, e.g. make bursary criteria explicit. Provide students with assistance to navigate the various opportunities for support available to them. This may include streamlining processes or considering a 'single point of access' approach to university support, e.g. information banks containing application criteria, deadlines and useful web pages. .

Discussion

Our results recommend ways to support widening participation students and mitigate factors which contribute to the awarding gap, and thus may inform the delivery of equitable medical education.

Widening access to participation

Our study illustrates a range of barriers to learning. Students who had access to a personal vehicle experienced fewer difficulties attending clinical placements. Furthermore, evidence suggests that students from widening participation backgrounds may have less access to support such as lifts from medical student peers because they may be more likely to form friendships with each other. Our research suggests that travel costs for placements are substantial and unlikely to be refunded in their entirety.

Reimbursement for travel can be complex, with disparities between local allocation tariff and NHS bursaries, Whilst there are pros and cons of a universal versus means-tested system, we recommend that tariff for travel reimbursement be increased if covered locally, or the NHS bursary used as an exclusive route and better funded to ensure timely and appropriate expense claims. This will ensure that costs relating to transport to and from clinical placement do not act as a barrier to attendance.

Our findings support those of Anane and Curtis (12), who describe the impacts of socioeconomic disadvantage on learners. Whilst socioeconomic background is not explicitly captured, our results suggest some learners may face disproportionate challenges, which may relate to socio-economic status. Indeed, successful participation at medical school requires access to resources and privileges, related to socio-economic status. This mirrors broader societal issues (13), where wide disparities have been reported in wages, employment and health- influenced by ethnicity, age and socio-economic group (14). Such issues may explain the increased vulnerability of some students to changes.

Our study demonstrated that remote learning requires access to confidential areas and functioning technology. Students' accommodation impacted their ability to engage. Better quality broadband and devices facilitated remote learning, with students relying upon personal devices and wifi. This is particularly important because our findings showcase some benefits of remote teaching in addressing inequities, such as reduced expense. Recognition of students' individual needs is crucial to promote engagement and allows students to flourish. Whilst this is resource intensive, it represents a significant opportunity associated with blended medical curricula.

There have been concerns recently about poor student attendance (11). Often attendance or lack of engagement are thought to be due to individual factors, such as lack of motivation, or poor organisational skills. Our study highlights factors beyond the control of individual students, and emphasises the need to consider both human and non-human factors as described by Coyle, Bullen (15) in their analysis of WP policies.

Professional identity formation

Students negotiate multiple identities as learners and 'service providers' (16). However it is noted in our study that students perceived paid work in other roles as 'essential'. This may reflect peripherality and lack of authentic participation in placements. Widening participation students may be disproportionately affected, due to discrimination, inadequate resources, and the need to work in paid roles. On our study, a third of survey respondents undertook paid work during the study period, although other studies have suggested a much higher proportion undertaking paid work (12).

Self-esteem may be influenced by feelings of incompetence (17), which can prevent students identifying as part of the team. Nursing students also report concerns about competence, despite

adopting an apprenticeship model which often provides more opportunities to become actively involved in patient care (18, 19). This highlights the complexities of professional identity formation. It is likely that widening participation students' may be disproportionately affected if, for example, they lack access to positive learning experiences to build their self-esteem.

The role of being paid is unclear. A study exploring paid and unpaid placements - from various fields - found that students felt more valued and employers recognised their work more when paid (20). Similarly our respondents felt 'essential' in their extracurricular paid roles, although being paid does not guarantee meaningful experience (20). Universities must consider how they can better support active involvement, and whether there is a role for paid participation.

Recommendations

In this paper, we have built on our collective experiences across different medical schools; each institution will experience different opportunities and challenges. We encourage you to use some of the suggestions to inform dialogue between staff and students, to co-create local solutions.

The Strategic Review of Health Inequalities introduced the concept of 'proportionate universalism', suggesting that health actions must be universal but with a scale and intensity that is proportionate to the level of disadvantage (21) . We believe that there should be universal support for students, but with a greater focus on those with the highest needs. There is an imperative need to address social determinants of engagement. Medical schools should consider challenges faced by all students but adapt services to meet the needs of different groups and provide targeted support (Krstic REF) to those who need it , for example through support with timetabling, equipment and access to private spaces.

Strengths and Limitations

We did not explicitly collect data about participants socio-economic status, which can be complex; as classification often varies.

The sample size is small and the survey is likely not representative of all UK medical students. The timing was appropriate to capture student experiences. Students with favourable or unfavourable experiences may have been more likely to respond. However, the categories of participation are representative of all UK medical schools.

The authors all work in medical education and primary care, however, bias was mitigated through the use of a reflexive approach and stakeholder input.

This survey provides a deeper understanding of perspectives and impacts of rapid transitions in educational delivery as a consequence of the covid-19 pandemic, beyond measures of satisfaction. These findings remain relevant in relation to increasing medical student numbers and concerns about attendance.

Conclusion

This study highlights UK medical students' perspectives of teaching and factors which promote engagement; these can inform ongoing evolution of medical education with regards to inclusivity and delivery of blended curricula.

Universities should increase students' sense of value as legitimate contributors to clinical care. This may be achieved through empowering students to participate, and efforts to include students in clinical teams. We recommend further research exploring how legitimate participation can be facilitated.

It is important to anticipate disproportionate challenges encountered by some students. Medical schools need to provide adequate resources and support, particularly considering the impact of financial burden in relation to participation, learning and performance. We recommend that this be driven at both local and national level. Additional research and dialogue amongst stakeholders should inform efforts to support equitable participation.

Author contributions

YP and SP created the initial idea for the study, carried out our initial stakeholder consultation and generated the initial survey questions. SP was also involved in data analysis, write-up and drafting of the final document.

MH was involved in the refinement of initial survey questions, piloting and delivering the survey, data analysis, write-up and drafting of the final document.

AR and NC were involved in reviewing the survey questions (prior to launch of the survey), data analysis, write-up and drafting of the final document.

SR and ER were student contributors who informed the production of recommendations in Figure 4, and contributed to revisions of the final report write-up

JHH supported the initial PPI work, informed the analysis and reviewed drafts prior to the final submission.

References

1. Medical Schools Council. Selection Alliance 2019 Report: An update on the Medical Schools Council's work in selection and widening participation. 2019.
2. Woolf K, Potts HW, McManus I. Ethnicity and academic performance in UK trained doctors and medical students: systematic review and meta-analysis. Bmj. 2011;342.
3. Ferguson E, James D, Madeley L. Factors associated with success in medical school: systematic review of the literature. Bmj. 2002;324(7343):952-7.
4. Curtis S, Smith D. A comparison of undergraduate outcomes for students from gateway courses and standard entry medicine courses. BMC Medical Education. 2020;20(1):4.
5. Woolf K. Differential attainment in medical education and training. BMJ : British Medical Journal (Online). 2020;368.
6. General Medical Council. Tackling differential attainment [Available from: https://www.gmc-uk.org/education/standards-guidance-and-curricula/guidance/tackling-differential-attainment.
7. Curtis S, Mozley H, Langford C, Hartland J, Kelly J. Challenging the deficit discourse in medical schools through reverse mentoring-using discourse analysis to explore staff perceptions of under-represented medical students. BMJ Open. 2021;11(12):e054890.

8. Brown C, Goss C, Sam AH. Is the awarding gap at UK medical schools influenced by ethnicity and medical school attended? A retrospective cohort study. BMJ Open. 2023;13(12):e075945.
9. Forrest D, George S, Stewart V, Dutta N, McConville K, Pope L, et al. Cultural diversity and inclusion in UK medical schools. The Clinical Teacher. 2022;19(3):213-20.
10. Woolf K, Rich A, Viney R, Needleman S, Griffin A. Perceived causes of differential attainment in UK postgraduate medical training: a national qualitative study. BMJ Open. 2016;6(11):e013429.
11. Nagappan PG, Brown S, McManus A, Sayers S, Absar S, Tan SRX, et al. Changes in medical student attendance and its impact on student educational outcomes: a systematic review protocol. BMJ Open. 2024;14(3):e078252.
12. Anane M, Curtis S. Is earning detrimental to learning? Experiences of medical students from traditional and low socioeconomic backgrounds. The British Student Doctor Journal. 2022;6:14-22.
13. Marmot M, Allen J. COVID-19: exposing and amplifying inequalities. J Epidemiol Community Health. 2020;74(9):681-2.
14. Bambra C, Riordan R, Ford J, Matthews F. The COVID-19 pandemic and health inequalities. Journal of Epidemiology and Community Health. 2020;74(11):964.
15. Coyle M, Bullen J, Poobalan A, Sandover S, Cleland J. Follow the policy: An actor network theory study of widening participation to medicine in two countries. Medical Education. 2024;58(3):288-98.
16. Goldie J. The formation of professional identity in medical students: considerations for educators. Med Teach. 2012;34(9):e641-8.
17. Stets JE, Burke PJ. Identity Theory and Social Identity Theory. Social Psychology Quarterly. 2000;63(3):224-37.
18. Fuvich JI, editor Exploring the Perceptions of Nursing Students' Self-Confidence in the Acute Care Setting2017.
19. Milisen K, De Busser T, Kayaert A, Abraham I, de Casterlé BD. The evolving professional nursing self-image of students in baccalaureate programs: a cross-sectional survey. Int J Nurs Stud. 2010;47(6):688-98.
20. Smith SG, Smith CF, Caddell M. Can pay, should pay? Exploring employer and student perceptions of paid and unpaid placements. Active Learning in Higher Education. 2015;16:149 - 64.
21. Marmot. M. Fair Society, Healthy Lives: The Marmot Review,. In: Strategic Review of Health Inequalitites in England post-2010, editor. London2010.