

# Bridging the cultural divide? Exploring school pupils' perceptions of medicine

Kirsty Alexander<sup>1</sup>, Jennifer Cleland<sup>1</sup> and Sandra Nicholson<sup>2</sup>

[kirsty.alexander@abdn.ac.uk](mailto:kirsty.alexander@abdn.ac.uk); [jen.cleland@abdn.ac.uk](mailto:jen.cleland@abdn.ac.uk); [s.nicholson@qmul.ac.uk](mailto:s.nicholson@qmul.ac.uk)

1. Centre for Healthcare Education Research and Innovation (CHERI)

Institute of Education for Medical and Dental Sciences

University of Aberdeen

Polwarth Building, Foresterhill, AB25 2ZD

Tel: +44 (0)1224 435257

2. Centre for Medical Education

Institute of Health Sciences Education

Barts and The London School of Medicine and Dentistry

Queen Mary University of London

Garrod Building, Turner Street, Whitechapel, London E1 2AD

Tel: +44 (0)207 882 2508

**Address for correspondence:**

Kirsty Alexander

Email: [kirsty.alexander@abdn.ac.uk](mailto:kirsty.alexander@abdn.ac.uk)

Tel: +44 (0)1224 437251

**Funding:** This work was supported by the College of Life Sciences, University of Aberdeen, through the funding of Kirsty Alexander's programme of doctoral research.

**Disclosure Statement:** The authors have no conflicts of interest to declare.

**Word Count** (main text & references): 7001

# Abstract

## Introduction

Literature published around a decade ago demonstrated that UK individuals from non-traditional groups may not consider, or aspire to, medicine because of sociocultural barriers, instead perceiving medicine as 'not for the likes of me'. Since this time the UK Higher Education landscape has undergone significant change, with an increased emphasis on student choice and widening access (WA) initiatives. Consequently, the present study looks anew at the perceptions of medicine held by school pupils from non-traditional backgrounds to assess whether sociocultural factors remain a major barrier to medicine.

## Methods

Focus groups were conducted with 71 high-achieving school pupils in their penultimate or final year (aged 16-18). Participants attended UK state-funded schools engaged with medical schools' WA initiatives. Transcripts were analysed thematically using a data-driven approach. Themes were then interpreted through the conceptual lens of the 'reflexive habitus' – an adapted version of Bourdieu's classic concept.

## Results

Participants did not perceive that sociocultural differences would deter them from aspiring to, or pursuing, the career of their choice. Some participants identified their 'different' backgrounds as a strength to bring to medicine. They reported that intrinsic motivators (personal interest and fulfilment) were most important in their own career choices. When asked what they believed might have motivated current medical students for the career, participants debated the role of extrinsic motivators (high status and income) versus intrinsic

ones. 'Hot knowledge' (social contacts) from within medicine helped some participants reconcile any 'clash' in perceived values and better imagine themselves in the profession.

### **Discussion**

These non-traditional school pupils from schools engaged with WA initiatives appear to have embraced the belief that medicine is for anyone with appropriate desire and ability, regardless of their background. Furthermore, some pupils reported that some aspects of their 'difference' (diversity) could help enrich the workforce and patient care.

## Introduction

Widening access (WA) policies aim to boost social mobility and to ensure that any individual with the requisite ability and commitment has the opportunity to access the career of his/her choice, regardless of background, gender or ethnicity.(1–3) In medicine, WA is also increasingly linked to the promotion of social accountability through its potential to create a more diverse workforce with an improved understanding of deprived communities and an increased desire to work in underserved specialities and locations.(4–7)

WA to medicine coexists against a wider backdrop of educational policy and practice. In the UK, wider changes to the Higher Education (HE) landscape include a strong political and policy emphasis on student choice,(8) a large increase in total student numbers(9) and a focus on opening up access to more ‘elite’ subjects and universities.(2,10) Comparable forces are in play internationally. For example, Australian governments have set similar high targets for participation in HE overall.(11)

Nonetheless, despite the substantial changes to the global HE sector’s focus,(12) and the accompanying international investment and engagement in WA,(13) numbers of applications to medicine from those in underrepresented groups have not risen substantially.(14–16)

Why is this? Applicants from underrepresented, or “non-traditional”, groups may not apply to medicine for multiple reasons. In the UK context, ‘non-traditional’ groups include (amongst others) those who live in an area of socioeconomic deprivation or attend a school with low progression rates to university. International literature reveals that people from these groups may be deterred by factors including: socio-cultural barriers and lack of identity ‘fit’(17–20); lack of confidence or feelings of inadequacy(19,21,22); perceived financial costs or material barriers(23–25); or lack of information.(1,25–27) Greenhalgh et al.’s 2004 UK study reported more affluent school pupils were happy to consider medicine for the intrinsic benefits of the

career, whereas school pupils from lower socioeconomic groups perceived it as a career geared towards the 'posh' (people from higher social classes) and felt they would be at an unsurmountable disadvantage in competition for a place since they did not come from this group.(17)

This and other empirical studies focusing on the sociocultural barriers to medicine in the UK context are now approximately a decade old.(17–19,26) As mentioned earlier, in this time there have been substantial changes to the broader HE sector, including a wide-spread focus on WA. The cultural and structural barriers non-traditional pupils currently face may now be quite different.

Medical schools' WA initiatives thus risk operating on old knowledge and outdated assumptions. There is an urgent need for up-to-date studies through which medical schools may recalibrate their initiatives and focus on the key concerns of today's non-traditional applicants. These studies must address questions including: Is medicine still a career that is considered 'unreachable' for individuals in non-traditional groups? Or have the sector's efforts to widen access, including those from medical schools, changed perceptions? And if so, why might application rates not be following this trend?

This study addresses some of these gaps. It aims to explore how a diverse group of UK pupils in high schools targeted by WA initiatives perceive the reasons individuals in general are attracted to, and seen as 'suitable' for, a career in medicine. We asked pupils to compare how their perceptions of medicine aligned or contrasted with their own priorities for a career and analysed how they could change their beliefs and expectations through a conceptual framework of 'reflexive habitus'(28).

The following research questions guided our analysis:

1. What key factors do pupils believe would have motivated *current* medical students to apply?
2. How do pupils perceive their own career motivations align with those they believe the medical students hold?
3. Why do pupils consider themselves 'suitable' (or not) for medicine?

## Methods

This study employs a social constructionist worldview, which acknowledges participants' individual and diverse experiences of the world, and emphasises the social dimension in meaning-making.(29)

### Data collection

#### Participating schools

The UK's pre-university school system consists primarily of non-selective state-funded schools that are free to attend. These schools vary considerably with regards to their levels of attainment and are often socioeconomically and socially segregated.(30,31)

This study aimed to collect perspectives from high school pupils attending schools targeted by, and engaged with, medical schools' WA activities. UK medical schools target non-selective state schools within their local geographical region, identified via statistics on school performance and demographic intake (e.g. characterised by below average attainment or progression to university and situated in an area of socioeconomic deprivation). These schools are prioritised for aspiration-raising pre-entry WA activities and application support and guidance.(32)

We were interested to investigate whether there were sociocultural barriers that transcended the procedural and structural differences between Scottish and English school systems (e.g. in

Scotland, pupils stay in high schools accommodating 11-18 year olds and sit their university entrance exams in their penultimate year; whilst in England many senior pupils will progress to sixth form colleges (16-18 years) and sit their university entrance exams in their final year. Thus, instead of focussing on one geographical area or city,(17,22,23,26) this study aimed to explore the breadth of pupils' experiences across the UK and identify any commonalities in culture, despite contextual and systemic differences across regions. Purposive sampling(33) ensured the participants' schools met widening access eligibility criteria and included of range of high schools across three diverse UK regions: North-East Scotland, London and Southern England.

We were particularly interested in gathering the views of pupils who were academically able and interested in science subjects, as these pupils' abilities and interests positioned them well to consider medicine as a career. Our focus, in short, was pupils who could go on to study medicine. We actively sought to include pupils with a range of career intentions (not only medicine) in order to hear both what attracts, as well as deters, a potential applicant from the career.

Pupils in their penultimate and final years of school were included as these individuals were considered more likely to have started making reasoned decisions about their post-school choices, as well as more likely to have experienced some kind of university outreach.(1,34)

#### Participant recruitment

Headteachers of eligible high schools (ages 11-18) and sixth-form colleges (ages 16-18) were contacted with information about the study and an invitation for their pupils to participate. Following consent, contact teachers were asked to invite eligible pupils (see above) to participate and to provide them with an information sheet. It was stressed to teachers that pupils' participation should be entirely voluntary. Teachers organised a time and venue within

the school for the focus group. One additional focus group took place during a medical school widening access initiative.

At the start of the focus groups, all participants were given further information and the opportunity to ask questions, and made aware that they could withdraw consent or choose to not participate at any time with no adverse effects. All participants gave written consent to participate, and for their focus group to be audio-recorded for later transcription.

All participants were asked to complete a personal information sheet to collect demographic data.

Data was collected in October and November 2016.

#### Focus groups

Focus groups were chosen to encourage interaction between participants, and allow them to discuss, debate and situate their own opinions amongst those of their peers.(35,36) We were particularly interested to capture this process of knowledge co-construction,(35,37) due to our focus on the cultural and social influences on participants' perceptions.

Participants were first asked to complete an activity as a group. Task-based activities are a useful strategy to engage participants, encourage them to work together interactively and explore their thoughts informally before discussing them with an unfamiliar adult.(38,39)

Participants were given 14 'factors' that might be given as a reason to apply for medical school. These 'factors' were developed for Vaglum et al.'s survey study on medical students' motivations (see Box 1).(40)

*Box 1: Fourteen 'factors' provided to participants for the activity: taken from Vaglum et al. (40)*

Opportunity for high income Social prestige/status Job security The education leads to a defined profession
--



Classroom-like study programme Opportunity to take advantage of good grades Being a doctor provides opportunity for social and humanitarian effort Opportunity to work with people Opportunity to care for people Interest in relations between health, well-being and society Desire for challenge Interest in human biology Opportunity to perform research General interest in natural science
--

Participants were provided with the ‘factors’ on individual paper slips and asked to rank these in order of importance (from the most important factor to the least) according to how they believed *current medical students* would have chosen (i.e. according to their perceptions of another group’s choices). Participants were left to discuss the activity without participation from the focus group moderator (KA), although she remained in the room to answer any questions.

Once participants had completed the exercise, the moderator prompted the group to discuss their ranking and justifications for this, as well as their perceptions of medical students, doctors and medicine more generally, and any other factors not listed that they deemed important. Participants were then prompted to discuss their own plans for the future, and how they might reorder the ranking if it were *for them personally* in their chosen career (medicine or otherwise) using both the provided factors and their own additional motivations.

At the end of the session the moderator discussed the findings of the study from which the ‘factors’ were taken,(40) allowing the participants to compare their ranking. Motivations for medicine were then briefly discussed within the wider and more recent literature about medical students’ motivations.

## Data Analysis

Focus group audio-recordings (both the participants' discussions during the task/activity and the moderator-led discussions) were transcribed verbatim, corrected for accuracy, anonymised and uploaded into NVivo 11 (QSR International Pty Ltd, Doncaster, Vic, Australia). To safeguard participant anonymity participants are referred to with a pseudonym, their gender (m/f), their focus group identifier and location (e.g. Ana (f) Group H, South England).

Template analysis<sup>(41)</sup> was used to code the data, identify the developing themes and to create a final template with which to code all data. This template included integrative themes which permeated through several other themes. KA performed the initial coding, with subsequent analytical cycles refined with input from JC and SN, who checked developing templates to ensure the distinctiveness of codes, and the confirmability and dependability of the process.<sup>(42)</sup> We were particularly careful to ensure that the 'factors' from the group activity (above) did not automatically become our 'themes' – a common pitfall when data collection errs towards pre-set themes.<sup>(43)</sup> The analytical process was largely inductive (data driven), although we do acknowledge the inevitable influence of prior literature and experiences on developing interpretations.<sup>(41)</sup> The varied educational and professional backgrounds of the research team provoked a wide range of interpretations: KA has a professional background in WA at an operational level (designing and implementing WA initiatives), JC is a psychologist and SN is a general practitioner. All have an active role in medical education.

The reflexive habitus

Identified themes were then considered through the conceptual lens of a 'reflexive habitus',<sup>(28)</sup> a concept adapted from the work of Pierre Bourdieu. Bourdieu's concept of habitus offers insight into the manner in which context shapes an individual's dispositions and subsequently his/her thoughts and choices.<sup>(44,45)</sup> Habitus has been used extensively within

research examining educational inequalities to investigate how and why an individual's background appears to influence his/her educational decisions and participation.(46)

According to Bourdieu, habitus is a set of dispositions (behaviours, beliefs and tastes) that individuals unconsciously develop through socialization, and which help them successfully navigate social contexts.(45) These social contexts are referred to as 'fields'. Within every field, individuals will adapt their practice to compete for desirable resources and to connect or 'fit in' with others. For example, in the field of medical school, applicants must compete for a place,(47) successfully negotiate the transition from pre-clinical to clinical practice,(48) and foster professional networks.(49) Every field is governed by unquestioned and implicit rules of acceptable behaviour, referred to as "doxa".(45)

Bourdieu understood the habitus to consist of both primary (or 'original') habitus and secondary ('specific' or 'cultured') habitus.(50–52) An individual develops their primary habitus in early childhood through exposure to familial dispositions. The secondary habitus develops through teaching or learning, for example during schooling, technical skills acquisition or entry into a profession.(28) The greater the difference between the primary and secondary habitus, the more difficult the acquisition of the secondary habitus may be.(28) The mismatch or 'gap' between the primary habitus of non-traditional applicants and the habitus required to negotiate the field of medicine has been identified as a barrier to attracting these groups to medicine.(17,18,53,54)

However, Bourdieu's concept of habitus has been critiqued as limited and outdated. For example, habitus has been criticised for insufficiently acknowledging individuals' ability to exert their own agency(55) and to be unsuitable for a modern world, in which traditional class systems, roles and expectations have been replaced with reflexive individualism.(56–58)

Therefore, in this study we employ the more nuanced concept of a 'reflexive habitus'.(28)  
Within this model, individuals are understood to be positioned within multiple, intersecting and overlapping fields. From learning the doxa and practices of one field and translating this to another field, they are able to perceive and negotiate any mismatch between their primary habitus and the secondary habitus required for a specific field and thus reflexively decide how to act.(28)

The 'reflexive habitus' is distinct from Bourdieu's original concept, as the original predominantly understands habitus to be restructured in reaction to disruptions and radical changes to the field(51) rather than through an individual's everyday reflection.(28)

Ethical Approval

Permission to conduct this study was granted by the Committee for Research Ethics and Governance in Arts, Social Sciences and Business at the University of Aberdeen.

## Results

In this study, we were interested in the similarities and differences participants perceived between their own motivations for a career and those they believed medical students to hold. We intended to explore any cultural differences and question whether participants saw themselves as 'suitable' for medicine.

First, we describe the participants. We then explore the above questions via themes relating to the aforementioned perceived similarities and differences in motivations. We summarise how participants may be negotiating the perceived differences between their own values and those they believe a 'typical' medic to hold, and how they subsequently negotiate their own 'fit' in medicine.

## Descriptive Findings

Ten focus groups were conducted with 71 high school pupils, 26 (36.6%) in their penultimate and 45 (63.4%) in their final year. Focus groups contained between five and ten participants and lasted between 22 and 45 minutes (average 34 minutes).

Overall, participants possessed diverse demographic characteristics (see Table One). More participants were female than male (69.1% and 30.9% respectively). All ethnic minority (non-white) groups were overrepresented in comparison to the UK-wide population.<sup>(59)</sup> A small percentage of participants (4.2%) had been in the statutory care system. Just over half the representative number of participants came from the two lowest Polar Quintiles (22.6%) - a measure of an individual's likelihood of participation in Higher Education.<sup>(60)</sup> Although they were selected purposively, participants' socio-economic spread was roughly comparable to that of the overall UK population, with 16.9 – 22.5% coming from each deprivation quintile (IMD<sup>(61)</sup>/SIMD<sup>(62)</sup>). Parent/guardian occupations represented all eight standard occupation classes.<sup>(63)</sup>

When asked (via the personal information sheet) whether they were considering medicine, 40 participants selected 'yes' (56.3%), 9 selected 'maybe' (12.7%) and 22 selected 'no' (31.0%).

Table One: Participant Demographics and Background Information<sup>1</sup>

<b>Criteria</b>	<b>% (n)</b>	
<b>School Year</b>		
Final	63.4 (45)	
Penultimate	36.6 (26)	
<b>Gender</b>		
Male	30.9 (22)	
Female	69.1 (49)	
<b>Location</b>		
North-East Scotland	40.8 (29)	
London	26.8 (19)	
Southern England	32.4 (23)	
<b>Ethnicity</b>		
Asian/British Asian	31.0 (22)	
Black/African/Caribbean/Black British	5.6 (4)	
Mixed Ethnic Groups	4.2 (3)	
White	54.9 (39)	
Other	4.2 (3)	
<b>Care Status</b>		
Currently or previously been in care	4.2 (3)	
Never been in the statutory care system	95.8 (68)	
<b>Polar 4 Quintile<sup>2</sup></b>		
1 (lowest participation in Higher Education)	12.7 (9)	
2	9.9 (7)	
3	28.2 (20)	
4	21.1 (15)	
5 (highest participation in Higher Education)	21.1 (15)	
Not provided	5.6 (4)	
Unclassified	1.4 (1)	
<b>Index of Multiple Deprivation Quintile (IMD<sup>3</sup>/SIMD<sup>4</sup>)</b>		
1 (most deprived)	16.9 (12)	
2	22.5 (16)	
3	16.9 (12)	
4	19.7 (14)	
5 (least deprived)	16.9 (12)	
Not provided	5.6 (4)	
Unclassified	1.4 (1)	
<b>Parent/Guardian Standard Occupational Class<sup>5</sup></b>	<b>Parent/Guardian 1</b>	<b>Parent/Guardian 2</b>
1 Higher managerial & administrative occupations; Higher professional occupations	15.5 (11)	2.8 (2)
2 Lower professional & higher technical occupations; Lower managerial & administrative occupations; Higher supervisory occupations	16.9 (12)	11.3 (8)
3 Intermediate occupations	7.0 (5)	4.2 (3)
4 Employers in small organisations; own account workers	14.1 (10)	0 (0)
5 Lower supervisory & technical occupations	4.2 (3)	4.2 (3)
6 Semi-routine occupations	16.9 (12)	8.5 (6)
7 Routine occupations	5.6 (4)	4.2 (3)
8 Never worked and long-term unemployed	2.8 (2)	0 (0)
Not provided	14.1 (10)	57.7 (41)
Unclassified	2.8 (2)	7.0 (5)

<sup>1</sup>As self-reported by participants via their completion of a personal information sheet.

<sup>2</sup>Polar4 (Participation of Local Areas) is a UK-wide measure of how likely young people are to enter Higher Education according to postcode area in which they live.(60)

<sup>3</sup>The Index of Multiple Deprivation (IMD) ranks all areas of England according to an aggregate of seven measures of deprivation enabling comparison of these areas.(61)

<sup>4</sup>The Scottish Index of Multiple Deprivation (SIMD) is a similar rank of deprivation for areas in Scotland.(62)

<sup>5</sup>Standard Occupational Class is determined by the UK Office of National Statistics. Jobs are classified by their skill level and content.(63)

## Prioritisation of a fulfilling career

Participants reported that intrinsic motivation for a career was the most important factor in their choices and essential to succeed in a career long-term. The prioritisation of intrinsic motivations was largely unquestioned and immediate, with participants claiming they desired, above all, a career that was enjoyable, interesting and stimulating. This suggests that participants' habitus had internalised the principles of individual choice and personal fulfilment as priorities in career choice. Participants assumed that current medical students' career choices would also be primarily driven by intrinsic interests:

...I think when you're in it you must have like a drive, like a motivation, and I don't think motivation can be sustained from things like, I don't know, money or stuff like that. It has to be something from where you actually genuinely want to help people which is something like a doctor would do... *Connie (f)*

*Group J, London*

When discussing who would be a 'typical' doctor, all groups named personal characteristics and abilities (e.g. academic, motivated, caring) but not demographic characteristics. If participants were not considering medicine, they reported this was also out of personal choice: the subject or the pressures of the career didn't appeal; they had chosen not to strive for the grades; or had a preferred option. No participants reported or implied that they felt medicine was culturally unsuitable for them, nor that financial costs or a lack of information would prevent them from pursuing their desired career.

The only substantial barrier participants reported between themselves and medicine was the achievement of the grade requirements. This had deterred some participants, who seemed disillusioned with the thought of aspiring to an 'impossible' goal – for these participants the career itself was conceivable and attractive, but the entry grades were perceived as virtually unattainable even with great effort and sacrifice. However, other participants believed that the entry requirements could be overcome given enough intrinsic motivation and determination for the career:

Can I say, if you really want to be a doctor, you can. If you get terrible grades, work your way around... it takes ages, but you can work into a doctor position. *Arjun (m) Group I, South England*

## Perceived differences

Family experiences in an insecure job market and growing up in households on a limited income appeared to have shaped some participants' habitus, causing them to automatically prioritise a career with a low risk of redundancy and high employment levels:

*Group E, Scotland*

- |              |  |
|--------------|--|
| Moderator    | So, you put job security at the very top [of the ranking]. Why did you guys put that there?                      |
| Huzaifah (m) | Because people don't like being like, oh, I might get fired the morn'. Whereas if you've got...                  |
| Lindsey (f)  | Yeah, there's a lot to do with like, people losing their jobs right now as well, and it's like, quite stressful. |
| Jackson (m)  | So a lot of young doctors and that...  |
| Huzaifah     | If you're taking in a good, steady income then you can look after your family and yourself.                      |



Jackson            So having a job is one of the most important things in your life, because without a job you can't feed... have a house... everything.

Huzaifah           I'm pretty sure doctor is probably the most stable job...

Structural and extrinsic factors were clearly influential in participants' choice of career. A number of participants openly discussed the familial pressure on them to apply to medicine as a high-status career. Some female participants reported that medicine was a chance to break free of more traditional or expected gender roles (embedded in their primary habitus) and define themselves as individuals, equal to men (develop a new habitus in a field with more gender-equal doxa). However, during discussion participants reinforced that they nevertheless believed intrinsic factors and agentic choice had been their key motivations, not extrinsic or structural factors.

In contrast, some participants felt strongly that extrinsic motivators would have influenced the medical students' choice of career - especially a desire for high social status and income.

These participants argued that there were other roles with healthcare that would fulfil similar intrinsic motivations (e.g. to help people and an interest in science) and subsequently extrinsic factors attracted applicants:

...you could just do biology if you wanted to learn about some of those things. Rather than do medicine.

But then you get the money and stuff with medicine. If that makes sense. So I think that's the reason

why people choose medicine over science courses. *Poppy (f) Group D, Scotland*

These participants believed that these extrinsic motivations originated from medical students' families, who wished them to maintain a family tradition or high status. Therefore, although no participants expressed that medicine was for those from 'rich' or 'posh' backgrounds, they did implicitly perceive medical students as having developed their habitus within families that already possessed and/or desired social status. Moreover, the medical field was seen as an

arena where status and wealth could be accrued. Not all participants felt this way however, especially those with personal connections to the profession (see below), and therefore these views sometimes precipitated emotionally charged debates.

Participants described individuals who were primarily motivated by a desire for high income or social status very negatively, linking this to arrogance, selfishness or lack of ambition.

Participants' strong aversion to these extrinsic motivators was potentially due a clash between these and their habitus. Firstly, allowing extrinsic factors to be considered legitimate motivations might challenge their strong belief in the importance of intrinsic motivation as the key to success, which was firmly embedded within their current habitus. Secondly, when describing their neighbourhoods and upbringings, participants described communities that were close-knit, humble and unpretentious. A primary habitus developed in such a community might be in tension with a field where high status and income were highly valued.

*A lot of folk from here, they're not cocky. Huzaiyah (m) Group E, Scotland*

### **Negotiating cultural difference**

Participants' interaction with doctors and the 'field of medicine' was key in their ability to reconcile any 'clash' between what they perceived to be medical students' motivations and their own values.

Participants with family members in the profession, or who had met doctors or medical students through work experience or widening access initiatives, reported that doctors had stressed to them that extrinsic motivations were unsuitable reasons to choose the career, and rather that personal fulfilment was key:

*Group A, London*

- Safah (f) I think before you actually get to know what medicine is about you'd go into it for the money and prestige...
- Efa (f) Because when you go to a hospital everybody knows who a doctor is, but when it comes to all the other professionals, it's like: "what is that?"
- Safah (f) ... but once you get to know what medicine actually entails...
- Ashlee (f) And once you go to work experience the doctors are constantly telling you if you want, if you're getting into the job for money, don't do medicine, and that's what, that's drilled into your head, so I think that's the thing.

These participants had learned through their interactions ('hot knowledge'(64)) that extrinsic factors were not accepted as suitable motivations within the medical field, and thus reported that this was an outdated stereotype and these factors did not motivate doctors 'nowadays'.

The overall influence of extrinsic motivations in medical students' choices was thus a very hotly debated topic within all the focus groups. Participants who were considering medicine denied the influence of extrinsic factors in their own choices totally or to a very large extent, often citing a belief that medicine should be a totally 'selfless' career. The forceful shunning of extrinsic motivators, and the disassociation of these from medicine, may be seen as an effort by these potential applicants to reconcile the mismatch between their primary habitus (where humility was valued) and their perception of the accepted habitus within the field of medicine (where high status was valued). It may also be seen as an attempt to develop a new secondary habitus and practices to 'fit' within the doxa of the medical field - believing and describing extrinsic factors to be unimportant.

### Perceived 'fit' with medicine

Participants largely perceived medicine as a field that was becoming more inclusive to the participation of women and individuals from diverse backgrounds. Some participants were

even able to critically consider the field of medicine and identify areas in which practices and qualities developed through their backgrounds (one field) could be usefully applied to medicine (the new field). They felt that this would enhance their practice as a doctor as well as enrich medicine more generally:

Maybe possibly someone that came from a very rich background and became a doctor might not have been as exposed to like, the, not as great sides of the NHS [National Health Service]. If they have private health care, they might not know the issues that the public, poorer people might face. Yeah, just in general they [someone from our background] might be sort of be more understanding about that stuff.

*Connie (f) Group J, London*

Being around in this area, you are quite exposed to different cultures and religions and races. And, just being able to, not only be tolerant, but to encourage that kind of diversity, I think, is a mind-set that needs to be spread to other parts. *Ellie (f) Group B, London*

## Discussion

This study investigated the perceptions of an ethnically and socioeconomically diverse group of UK pupils in their final years at high school who possessed high academic ability and attended 'widening access' (WA) schools. Overall, findings suggest that a key mantra of WA initiatives - that anyone with the ability and desire should have the opportunity to access medicine, regardless of their background(65) - has successfully integrated into the collective consciousness of this diverse group of non-traditional pupils. Moreover, through access to 'hot knowledge' of the medical field, participants were able to draw upon role models in medicine, as well as their own experiences, to successfully negotiate cultural tensions and create a positive, coherent image of themselves in the profession.

Participants stressed the primacy of intrinsic motivators (i.e. desire for interest, challenge and fulfilment) in the formation and achievement of career goals, and downplayed the influence of structural factors (e.g. family pressure, financial concerns) in their aspirations. This chimes with wider discourses in educational policy and practice which promote individualisation and encourage young people to choose careers in alignment with their individual interests and strengths.<sup>(8,66,67)</sup> Our participants' attitudes were thus more similar to those Greenhalgh et al.<sup>(17)</sup> found in 2004 amongst the affluent participant group, rather than those in the lower-socioeconomic group. Although direct comparison between studies is not appropriate, our findings may suggest a tangible change in the attitudes of WA eligible pupils over this time.

Indeed, in our study, some participants even cited their own 'non-traditional' experiences (e.g. growing up in ethnically and religiously diverse or non-privileged communities) as a strength to bring to medicine and to benefit patients, rather than a barrier to be overcome. This suggests that a second key argument for WA – to enhance social accountability and enrich the workforce through diversity – may also be influencing some pupils. This positive view of 'difference' perhaps heralds a further – if still more tentative – change in attitudes about who 'belongs' in medicine and why.

Furthermore, our participants did not report that other commonly identified 'barriers' to medicine (financial,<sup>(23–25)</sup> cultural<sup>(17–19,21,22)</sup> or lack of information<sup>(1,25–27)</sup>) would deter them from aspiring to and pursuing the career of their choice. Some, (although not all) participants even believed that the most significant barrier to medicine – achievement of the required academic grades - could be navigated with sufficient willpower and smart choices.

As pupils were still at school, these aspirations were naturally yet to be tested by the rigours of application and the costs and challenges of being a medical student.<sup>(68–70)</sup> Moreover, despite their belief in the triumph of determination and talent, whether or not these pupils

really do have a realistic opportunity to realise their aspirations is questionable. The very high academic entry requirements for medicine may present an almost unsurmountable structural barrier in the UK's pre-university educational context (significant inequality and disparities in attainment).(30,71)

Inequalities in primary and high school translate strikingly into medical school application statistics: 80% of UK medical school applicants come from only 20% of UK high schools, and half of schools have sent no applicants to medicine in recent years.(1) Applicants from selective and fee-paying schools are significantly overrepresented.(72) Structural barriers may help explain why applications from those in lower socio-economic groups have not risen significantly over the last decade(14) despite a change in WA policy and practices, and attitudes. The alignment of medical school systems, educational policies, market pressures and other stakeholders is required to address this barrier.(73,74)

The substantial demographic diversity within the participant group enabled us to include a breath of views from participants living in very different contexts, cultures and attending different schools. The disproportionate number of females may be because females tend to perform better at high school(75) and are more likely to apply for medicine.(14) The overrepresentation of all ethnic minority (non-white) groups may have resulted from three focus groups having taken place in London (accounting for 26.8% of participants), a city that has higher than average ethnic minority populations.(59)

Whilst all participants attended a WA eligible school a small minority of participants came from more 'traditional' backgrounds (e.g. professional parents and/or high socioeconomic postcode). This is not unexpected: Boliver et al.(76) caution against the ecological fallacy of assuming that all people (pupils) have the modal characteristics of those who live in the same area or attend the same school. We considered this mix authentic, and it facilitated a reflexive

'group view' via exposure to various perspectives. We found the format (focus groups interviews and the inclusion of a group activity,(38)) effectively stimulated open, informal and sometimes heated discussion between the participants. Participants were specifically encouraged to consider the 'factors' provided in the group activity critically and to discuss other motivations for medicine (not provided). However, providing the participants with a pre-determined range of 'factors' may have influenced their thoughts and hindered participants in thinking freely about their own motivations.

Although participants were assured of their anonymity and encouraged to speak freely, it is still possible that they felt reluctant to express negative attitudes towards medicine to a university-staff moderator, or because of pressure from their surroundings – in a site of learning generally (at school) or for medicine (after an outreach activity).

As permission and recruitment for data collection was arranged through high schools, we can expect that these WA schools were relatively open and encouraging towards university and medicine. Moreover, these schools may have been actively promoting the message that pupils can aspire to medicine if they chose. The attitudes of WA eligible pupils may be very different in schools that do not currently engage with medical schools' WA activities.

The nature of this study means generalization of findings is not possible, however the similarities in participants' attitudes across locations, and the robust application of theory aids transferability.(77) The conceptual framework of the 'reflexive habitus' helped illuminate the ways in which our participants looked into the field of medicine, how they perceived it's doxa, and the habitus and practices of those already working/studying in this field. It also allowed us to explore whether participants felt any mismatch between their habitus and that of those working medicine. Finally, it helped us consider how participants perceived their suitability for a medical career, by exploring how they felt this 'mismatch' might be managed or reconciled -

taking lessons from practices learnt in one field and applying these to the new field of medicine.

Future studies to compare differences in perceptions between those from contrasting demographic groups (e.g. high/low socioeconomic status; privately/state educated) would add nuanced insight to this area. Alternatively, given the change in attitudes this study suggests, large-scale surveys might be useful to gauge the extent of this change across demographic groups and locations. Finally, studies that target pupils attending schools not engaging with medical schools' WA initiatives may usefully offer a comparison through which to investigate the potential impact of these WA activities.

Overall, this study adds a nuanced understanding of how 'hot knowledge' of the medical field may help non-traditional pupils reconcile cultural differences and adapt their attitudes to imagine themselves in the profession. It suggests that, in the modern Higher Education context, non-traditional pupils no longer see medicine as an 'unreachable' profession, but rather perceive high academic entry requirements as the most substantial barrier within their current position. This illustrates the key importance of research, and subsequently medical schools' practice, keeping pace with political and societal change – exposing and foregrounding the barriers of the present, rather than allowing these to be eclipsed by understandings of the past.

## References

1. Medical Schools Council. Selecting for Excellence Final Report. London; 2014.
2. Milburn A. Fair Access to Professional Careers. The Independent reviewer on Social Mobility and Child Poverty. London; 2012.



3. Bradley D, Noonan P, Nugent H, Scales B. Review of Australian Higher Education, Final Report. Canberra; 2008.
4. Dowell J, Norbury M, Steven K, Guthrie B. Widening access to medicine may improve general practitioner recruitment in deprived and rural communities: survey of GP origins and current place of work. *BMC Med Educ.* 2015;15(1):1–7.
5. Larkins S, Michielsen K, Iputo J, Elsanousi S, Mammen M, Graves L, et al. Impact of selection strategies on representation of underserved populations and intention to practise: international findings. *Med Educ.* 2015;49(1):60–72.
6. O’Connell TF, Ham SA, Hart TG, Curlin FA, Yoon JD. A National Longitudinal Survey of Medical Students’ Intentions to Practice Among the Underserved. *Acad Med.* 2017;93(1):90-97.
7. Puddey IB, Playford DE, Mercer A. Impact of medical student origins on the likelihood of ultimately practicing in areas of low vs high socio-economic status. *BMC Med Educ.* 2017;17(1).
8. Department for Business Innovation and Skills. Students at the heart of the system. London; 2011.
9. Higher Education Statistic Agency (HESA). Higher Education Student Statistics: UK, 2016/17 - Student numbers and characteristics [Internet]. [cited 2018 Jul 13]. Available from: <https://www.hesa.ac.uk/news/11-01-2018/sfr247-higher-education-student-statistics/numbers>
10. Russell Group. Opening Doors. London: 2015.
11. Gale T, Parker S. Widening Participation in Australian Higher Education: Report submitted to HEFCE and OFFA (October 2013). London: 2013.

12. Altbach PG, Reisberg L, Rumbley LE. Trends in global higher education: Tracking an academic revolution. A Report prepared for the UNESCO 2009 World Conference on Higher Education. Paris; 2009.
13. Shah M, Bennett A, Southgate E. Widening higher education participation : a global perspective. Waltham, MA: Elsevier Ltd; 2015.
14. Steven K, Dowell J, Jackson C, Guthrie B. Fair access to medicine? Retrospective analysis of UK medical schools application data 2009-2012 using three measures of socioeconomic status. *BMC Med Educ.* 2016;16(1):11–21.
15. Association of American Medical Colleges (AAMC). AAMC Facts & Figures 2016 | Current Trends in Medical Education [Internet]. 2016 [cited 2018 Jul 13]. Available from: <http://www.aamcdiversityfactsandfigures2016.org/report-section/section-3/#figure-30>
16. Puddey IB, Mercer A. Socio-economic predictors of performance in the Undergraduate Medicine and Health Sciences Admission Test (UMAT). *BMC Med Educ.* 2013;13(155).
17. Greenhalgh T, Seyan K, Boynton P. “Not a university type”: focus group study of social class, ethnic, and sex differences in school pupils’ perceptions about medical school. *BMJ.* 2004;328(7455):1541–4.
18. Mathers J, Parry J. Why are there so few working-class applicants to medical schools? Learning from the success stories. *Med Educ.* 2009;43(3):219–28.
19. McHarg J, Mattick K, Knight L V. Why people apply to medical school: implications for widening participation activities. *Med Educ.* 2007;41(8):815–21.
20. Gorard S, Smith E, May H, Thomas L, Adnett N, Slack K. Review of Widening Participation Research: addressing barriers to participation in higher education. HEFCE. Bristol; 2006.
21. Gore J, Patfield S, Holmes K, Smith M. Widening participation in medicine? New insights from school students’ aspirations. *Med Educ.* 2017;52(2):227–38.

22. Wouters A, Croiset G, Isik U, Kusurkar RA. Motivation of Dutch high school students from various backgrounds for applying to study medicine: a qualitative study. *BMJ Open*. 2017;7(5):e014779.
23. Southgate E, Kelly BJ, Symonds IM. Disadvantage and the “capacity to aspire” to medical school. *Med Educ*. 2015;49(1):73–83.
24. Freeman BK, Landry A, Trevino R, Grande D, Shea JA. Understanding the Leaky Pipeline: Perceived Barriers to Pursuing a Career in Medicine or Dentistry Among Underrepresented-in-medicine Undergraduate Students. *Acad Med*. 2016;91(7):987–93.
25. Hadinger MA. Underrepresented Minorities in Medical School Admissions: A Qualitative Study. *Teach Learn Med*. 2017;29(1):31–41.
26. Robb N, Dunkley L, Boynton P, Greenhalgh T. Looking for a better future: identity construction in socio-economically deprived 16-year olds considering a career in medicine. *Soc Sci Med*. 2007;65(4):738–54.
27. Martin AJ, Beska BJ, Wood G, Wyatt N, Codd A, Vance G, et al. Widening interest, widening participation: factors influencing school students’ aspirations to study medicine. *BMC Med Educ*. 2018;18(1):117.
28. Decoteau CL. The reflexive habitus: Critical realist and Bourdieusian social action. *Eur J Soc Theory*. 2016;19(3):303–21.
29. Savin-Baden M and Howell Major C. *Qualitative Research: The essential guide to theory and practice*. Oxon: Routledge. 2013.
30. Jerrim J and Shure N. *Achievement of 15-Year- Olds in England: PISA 2015 National Report*. London; 2016.
31. The Challenge, iCoCo, SchoolDash. *Understanding School Segregation in England; 2011 to 2016*. 2017. [cited 2018 June 30] Available at: <http://the->

challenge.org/uploads/documents/TCN-Understanding-School-Segregation-in-England-2011-to-2016.pdf

32. Medical Schools Council. Implementing Selecting for Excellence A progress update. London; 2016.
33. Bryman A. Social Research Methods. Oxford: Oxford University Press; 2012.
34. Medical Schools Council. A Journey to Medicine: Outreach Guidance. London; 2014.
35. Stalmeijer RE, McNaughton N, Van Mook WNKA. Using focus groups in medical education research: AMEE Guide No. 91. *Med Teach*. 2014;36(11):923–39.
36. Barbour RS. Making sense of focus groups. *Med Educ*. 2005;39(7):742–50.
37. McMillan W. Theory in healthcare education research: the importance of worldview. In: Cleland J, Durning SJ, editors. *Researching Medical Education*. Chichester, UK: John Wiley & Sons, Ltd; 2015. p. 15–24
38. Gibson F. Conducting focus groups with children and young people: strategies for success. *J Res Nurs*. 2007;12(5):473–83.
39. Punch S. Interviewing strategies with young people: the “secret box”, stimulus material and task-based activities. *Child Soc*. 2002;16(1):45–56.
40. Vaglum P, Wiers-Jenssen J, Ekeberg Ø. Motivation for medical school: the relationship to gender and specialty preferences in a nationwide sample. *Med Educ*. 1999;33(4):236–42.
41. King N, Horrocks C. *Interviews in Qualitative Research*. Sage Publications; 2010.
42. King N. Using Templates in the Thematic Analysis of Text. In: Cassell C, Symon G, editors. *Essential Guide to Qualitative Methods in Organizational Research*. London, UK: SAGE Publications. 2004. p. 256–70.
43. Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol*. 2006;3(2):77–101.
44. Bourdieu P. *Distinction: A Social Critique of the Judgement of Taste*. London: Routledge;

- 1984.
45. Bourdieu P. The genesis of the concepts of habitus and field. *Sociocriticism*. 1985;2(2):11–24.
  46. Webb S, Burke PJ, Nichols S, Roberts S, Stahl G, Threadgold S, et al. Thinking with and beyond Bourdieu in widening higher education participation. *Stud Contin Educ*. 2017;39(2):138–60.
  47. Razack S, Hodges B, Steinert Y, Maguire M. Seeking inclusion in an exclusive process: discourses of medical school student selection. *Med Educ*. 2015;49(1):36–47.
  48. Balmer DF, Richards BF, Varpio L. How students experience and navigate transitions in undergraduate medical education: an application of Bourdieu’s theoretical model. *Adv Heal Sci Educ*. 2015;20(4):1073–85.
  49. Nicholson S, Cleland J. “It’s making contacts”: notions of social capital and implications for widening access to medical education. *Adv Heal Sci Educ*. 2017;22(2):477–90.
  50. Bourdieu P. *Systems of Education and Systems of Thought*. *Soc Sci Inf*. 1967;14:338–58.
  51. Bourdieu P. *Pascalian Meditations*. Stanford, CA: Stanford University Press; 2000.
  52. Wacquant L. Homines in extremis: what Fighting Scholars teaches us about Habitus. In: Garcia R, editor. *Fighting Scholars: Habitus and Ethnographies of Martial Arts and Combat Sports*. Anthem Press; 2013. p. 191–8.
  53. Brosnan C, Southgate E, Outram S, Lempp H, Wright S, Saxby T, et al. Experiences of medical students who are first in family to attend university. *Med Educ*. 2016;50(8):842–851.
  54. Southgate E, Brosnan C, Lempp H, Kelly B, Wright S, Outram S, et al. Travels in extreme social mobility: how first-in-family students find their way into and through medical education. *Crit Stud Educ*. 2017;58(2):242–60.
  55. Archer M. Routine, reflexivity, and realism. *Sociol Theory*. 2010;28(3):273–303.

56. Beck U. *Risk Society: Towards a New Modernity*. London: SAGE Publications; 1992.
57. Giddens A. *Modernity and Self-Identity*. Cambridge: Polity; 1991.
58. Bauman Z. *Liquid Modernity*. Cambridge: Polity Press; 2000.
59. Office of National Statistics (ONS). *Ethnicity and National Identity in England and Wales: 2011*. London; 2011. [Internet]. [cited 2018 Apr 3]. Available from:  
<https://www.ons.gov.uk/peoplepopulationandcommunity/culturalidentity/ethnicity/articles/ethnicityandnationalidentityinenglandandwales/2012-12-11>
60. Higher Education Funding Council for England (HEFCE). *POLAR - Participation of Local Areas* [Internet]. [cited 2018 Apr 3]. Available from: <http://www.hefce.ac.uk/analysis/yp/POLAR/>
61. Ministry of Housing Communities & Local Government. *English indices of deprivation 2015* [Internet]. [cited 2018 Apr 26]. Available from:  
<https://www.gov.uk/government/statistics/english-indices-of-deprivation-2015>
62. The Scottish Government. *The Scottish Index of Multiple Deprivation 2016* [Internet] [cited 2018 Apr 26]. Available from: <http://www.gov.scot/Topics/Statistics/SIMD>
63. Office of National Statistics (ONS). *Standard Occupational Classification (SOC) 2010* [Internet]. [cited 2018 Apr 3]. Available from:  
<https://www.ons.gov.uk/methodology/classificationsandstandards/standardoccupationalclassification/soc/soc2010>
64. Ball SJ and Vincent C. (1998). "I heard it on the grapevine": "hot" knowledge and school choice. *Br. J. Sociol. Educ.* 19(3), 377–400. <https://doi.org/10.1080/0142569980190307>
65. British Medical Association. *BMA - Widening participation into medicine* | British Medical Association [Internet]. [cited 2016 May 17]. Available from:  
<http://www.bma.org.uk/developing-your-career/medical-student/widening-participation>
66. Laughland-Booÿ J, Mayall M, Skrbiš Z. Whose choice? Young people, career choices and reflexivity re-examined. *Curr Sociol.* 2015;63(4):586–603.

67. Rasborg K. From class society to the individualized society? A critical reassessment of individualization and class. *Irish J Sociol.* 2017;25(3):229–49.
68. Cleland J, Dowell J, McLachlan J, Nicholson S, Patterson F. Identifying best practice in the selection of medical students: literature review and interview survey. Report for the UK Medical Schools Council. London; 2012.
69. British Medical Association (BMA) Medical Student Committee. Medical Student Finances and the Effect on Wider Participation. 2015 [Internet]. [cited 2017 July 5]. Available from: [https://www.bma.org.uk/connecting-doctors/community\\_focus/m/mediagallery/185](https://www.bma.org.uk/connecting-doctors/community_focus/m/mediagallery/185)
70. Orom H, Semalulu T, Underwood W. The Social and Learning Environments Experienced by Underrepresented Minority Medical Students. *Acad Med.* 2013;88(11):1765–77.
71. Chowdry H, Crawford C, Dearden L, Goodman A, Vignoles A. Widening participation in higher education: analysis using linked administrative data. *J R Stat Soc Ser A.* 2013;176(2):431–57.
72. Mathers J, Sitch A, Parry J. Population-based longitudinal analyses of offer likelihood in UK medical schools: 1996-2012. *Med Educ.* 2016;50(6):612–23.
73. Alexander K, Cleland J. Social Inclusion or Social Engineering? The Politics and Reality of Widening Access to Medicine in the UK. In: *Achieving Equity and Quality in Higher Education.* Cham: Springer International Publishing; 2018. p.143–72.
74. Gorman D. Matching the production of doctors with national needs. *Med Educ.* 2018;52(1):103–113.
75. Bosworth D, Kersley H. Opportunities and outcomes in education and work: Gender effects. UK Commission for Employment and Skills (UKCES). London; 2015.
76. Boliver V, Gorard S, Siddiqui N. Will the Use of Contextual Indicators Make UK Higher Education Admissions Fairer? *Educ Sci.* 2015;5(4):306–22.
77. Reeves S, Albert M, Kuper A, Hodges BD. Why use theories in qualitative research? *BMJ.*

2008;337:a949.