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Deborah Eastwood is a Consultant Paediatric Orthopaedic Surgeon in London and Vice President of the BOA. She believes that accepting diversity is the key to success.

How diverse and inclusive are the demographic, socio-economic and disability profiles of the British Orthopaedic Association membership in the United Kingdom?

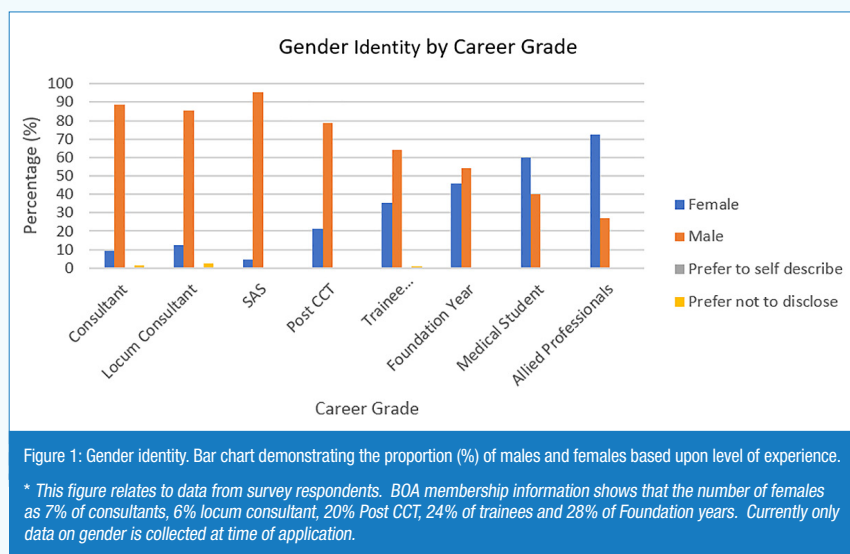
Neal Rupani, Caroline Hing, Deborah Eastwood, Justine Clarke, Rob Gregory and Salma Chaudhury

Workforce diversity and inclusion are recognised as drivers of innovation, productivity, outcomes and better decision making in industry by the McKinsey report, which in medicine ultimately benefits patients¹. Diversity attracts and retains better talent and improves job satisfaction. The critical mass for effective diversity is reportedly 30%². Traditionally, diversity was defined by obvious categorisation into gender, ethnicity, culture disability and sexual orientation. However, this definition is evolving to encompass different perspectives, roles and experiences³.

Despite the known benefits of diversity and inclusion, female and ethnic representation in Trauma and Orthopaedics (T&O) is the lowest within all specialities^{4,5}, despite being the largest surgical sub-speciality. Female T&O consultants and trainees in the UK formed 9% and 22% respectively between 2010 and 2021^{6,7}. Despite recent improvements the rate of change has neither kept pace with the demographic changes seen at medical school (55% female) nor the improvements in gender

parity seen in other specialities⁸. The UK was 15th out of 31 countries in recently published gender diversity status⁹ and alarmingly, in the USA, it is felt that it could take up to 200 years to achieve gender parity¹⁰ at current rates. This inequality is also reflected in the British Orthopaedic Association (BOA) female membership, who account for 12% of its consultant members and 19% of current Council Trustees¹¹.

Ethnic disparity is less well-documented in the UK. The proportion of ethnic minorities suffer from a funnelling effect, progressively dropping from medical school to consultant posts. Asians (Indian subcontinent) account for 25% of consultants, 28% of specialist trainees and 35% of core trainees. Almost half the medical student population are from the BAME group, but only 10% are Black/Afro-Caribbean. The proportion of black doctors and medical students does not reflect the general population. Accessing accurate data sources makes it difficult to draw conclusions regarding representation of other demographic groups relating to sexual orientation, socio-economic background, disability and education.



A diverse workforce should help address health inequalities in minority ethnic groups, which are likely compounded by clinical and social confounders. Studies have shown a reduced uptake of total knee and shoulder replacement in Hispanic and older black patients, despite equivalent arthritis rates, worse outcomes following hip and knee surgery in terms of PROMs, mortality surgical delays, re-operations, re-admission rates and longer waits for analgesia following trauma¹²⁻²⁰. There is a paucity of high level evidence for health inequality in T&O, with only 6 out of 482 randomised controlled trials evaluating outcomes based on ethnicity²¹.

Without detailed knowledge of the demographic make-up of our specialty it is difficult to formulate an action plan, and more importantly, it is difficult to assess the effectiveness of any initiatives. This study aims to determine the demographic, socio-economic and disability profiles of the orthopaedic community affiliated with the BOA.

National survey

A national survey was undertaken of all BOA UK members to collect their demographic data. The survey aims were determined by the BOA Executive Committee, who designed the survey modifying previously published and validated surveys to optimise construct validity. The survey was emailed to all BOA members. Two separate email reminders were sent on 5th and 27th October 2020. Data was collected in accordance with Information Commissioners Office guidance and results are published anonymously.

The eight survey questions had a minimum number of available response options, including the opportunity to select a 'prefer not to disclose' option, to minimise completion fatigue. Respondents could identify themselves as one of 16 pre-determined ethnicity sub-groups, identified by the Office of National Statistics^{22,23}.

Results

1,407 BOA members responded, representing 30% of 4,684 members surveyed. Consultants were the most represented of all groups, with responses from 35%. The most junior doctor training grade of foundation doctors were least represented, with a return rate of only 14%.

Gender

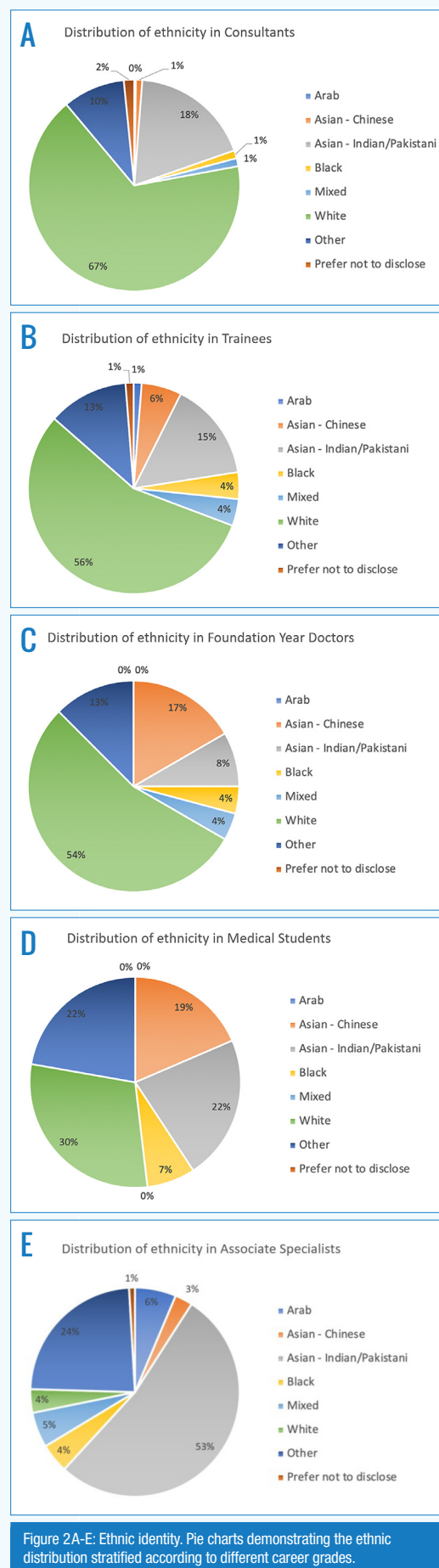
9.5% of consultant responders were female*, with greater female representation at more junior grades (Figure 1). Females represented 12% of locum consultants, 21% of post-CCT fellows, 35% of trainees and 46% of foundation year doctors.

Ethnicity and national identity

BOA orthopaedic consultants predominantly identified as white, which accounted for two thirds (66.8%) of the consultant cohort (Figure 2A). This proportion reduced for every more junior training grades, representing 56% for trainees, 54% for foundation trainees and 30% of medical students (Figure 2B). The second largest ethnic group amongst trainees were those who identified as Asian (Indian sub-continent), at 15%, and amongst foundation trainees was Chinese at 17% (Figure 2C). Only 1% of consultants were represented by black doctors, which rose to 4% for all training grades and 7% of medical students (Figure 2D). Half the associate specialist identified as Asian (Indian sub-continent), 24% as 'other' while only 4% were white.

Secondary education

Approximately equal proportions of consultants, foundation doctors and medical students had either an independent or state school education (Figure 3). >>





Justine Clarke is Chief Operating Officer for the BOA.



Rob Gregory is a Consultant T&O surgeon who works in Durham. He has a longstanding interest in surgical training, is currently Chair of the SAC for T&O and is a recent Trustee of the BOA.



Salma Chaudhury is Salma Chaudhury is a Clinical Lecturer in Trauma & Orthopaedics in Oxford, with an interest in shoulder and elbow surgery. Salma sits on the BOA diversity and inclusion committee and is a senior BOA diversity and culture ambassador. She is the Orthopaedic Lead for undergraduate medical students at the University of Oxford.

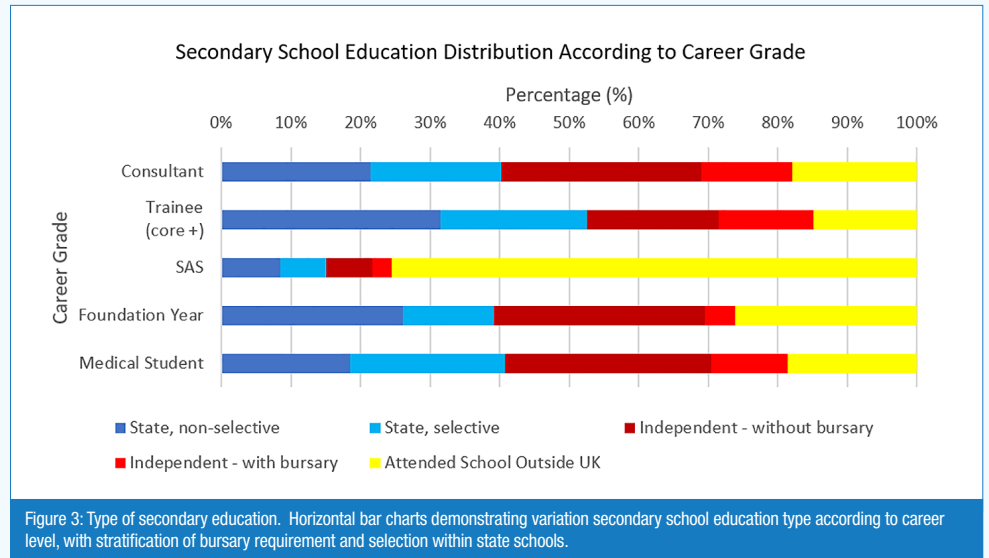


Figure 3: Type of secondary education. Horizontal bar charts demonstrating variation secondary school education type according to career level, with stratification of bursary requirement and selection within state schools.

Trainees had the highest proportion of state education, at 53% compared to 34% educated in the independent sector. 65% of staff grades were educated outside the UK. Most independently educated respondents did so without bursaries. 45% of those who received a state education, attended a selective school.

Socio-economic background

Approximately three-quarters of all orthopaedic grades are from a middle socio-economic background (Figure 4). International members were most likely from a higher socio-economic background, accounting for 28%, followed by consultants and foundation year trainees at 18%. Medical students most commonly identified from a lower socio-economic background at 22%.

95% of all grades identified as heterosexual or straight, apart from medical students where 11% identified as bisexual (Figure 5). 1-3% of trainees identified as gay and lesbian.

Disabilities

Whilst very few consultants reported a disability, 15% of medical students identified a disability, with mental health related issues affecting 11.2% (Figure 6). Learning/concentration issues were relatively prevalent, affecting 10.6% of post CCT trainees, and 3.7% of all trainees and medical students.

Discussion

We present the first comprehensive national survey to-date describing the UK orthopaedic surgical community. A clear demographic shift is seen from medical student to consultants. Most consultants identified as white, heterosexual males from a medium socio-economic class. Junior training grades have a greater proportion of females and ethnic variation. Equal proportions of respondents had state and private education, although a significant proportion attended selective state schools or received a bursary to attend private schools. This survey also highlights demographic differences for our staff grade community.

Unsurprisingly, 9.5% of consultants were females, however the proportion of female consultants appointed within the past five years has increased. The proportion of white respondents decreased from approximately two-thirds of consultants, half of all trainees and one-third of medical students. A small but significant proportion of the non-consultant workforce have disabilities, particularly relating to learning and concentration (potential neurocognitive diversity), highlighting the need to destigmatise and support all disabilities. Only early years respondents identified as having mental health issues.

“These results are important in understanding the make-up of our current workforce, identifying disparities and assessing whether initiatives to increase diversity and inclusion have been successful. Many factors are thought to drive the trends seen, including lifestyle concerns, unconscious bias, lack of exposure and mentorship.”

Low reported consultant disabilities may reflect admission inhibitions.

These results are important in understanding the make-up of our current workforce, identifying disparities and assessing whether initiatives to increase diversity and inclusion have been successful. Many factors are thought to drive the trends seen, including lifestyle concerns, unconscious bias, lack of exposure and mentorship²⁴. A common perception is that T&O is a 'boys club' that predominantly consists of white, privately educated, wealthy, alpha males which potentially deters applicants. These results may help dispel some of these myths by identifying changing demographics. A multifaceted approach is required to improve diversity and attract T&O trainees, including supporting parents, recognising T&O can be fun and fulfilling, and earlier exposure and greater visibility of positive role models particularly in leadership positions²⁵.

This study has limitations. There may be selection bias as only 30% of the BOA membership responded to the survey. Respondents may not have been completely honest due to the personal nature of some questions and not all questions were completed by all respondents.

Future initiatives

The BOA recognises that patient care will be improved by recruiting and developing the best workforce, irrespective of background, which requires effort and a mindset change. The BOA acknowledges its leadership fails to fully reflect its membership, and that its membership does not reflect medical student demographics. It has made efforts to understand the under-representation of gender, racial minorities, disability, and sexual orientation and in 2020 published its Diversity and Inclusion Action Plan, aiming to target five key related priorities over three years¹¹. Numerous initiatives have been pursued, such as greater female representation on Council, presenters at the Annual Congress, through social media platforms and T&O Pride month.

In conclusion, this is the most comprehensive and detailed snapshot of the demographic and disability profile of the UK orthopaedic community. This study highlights important demographic shifts from consultants to medical students and highlights under-appreciated disabilities. With acceptance that a more diverse and inclusive speciality will enhance delivery of high-quality healthcare outcomes, the orthopaedic stereotype of the white, male, affluent consultant is likely to change. ■

References

References can be found online at: www.boa.ac.uk/publications/JTO.

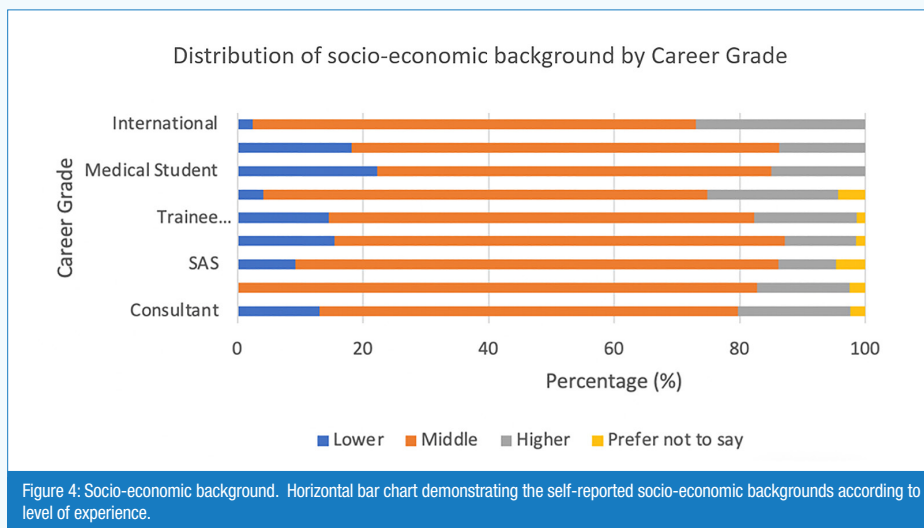


Figure 4: Socio-economic background. Horizontal bar chart demonstrating the self-reported socio-economic backgrounds according to level of experience.

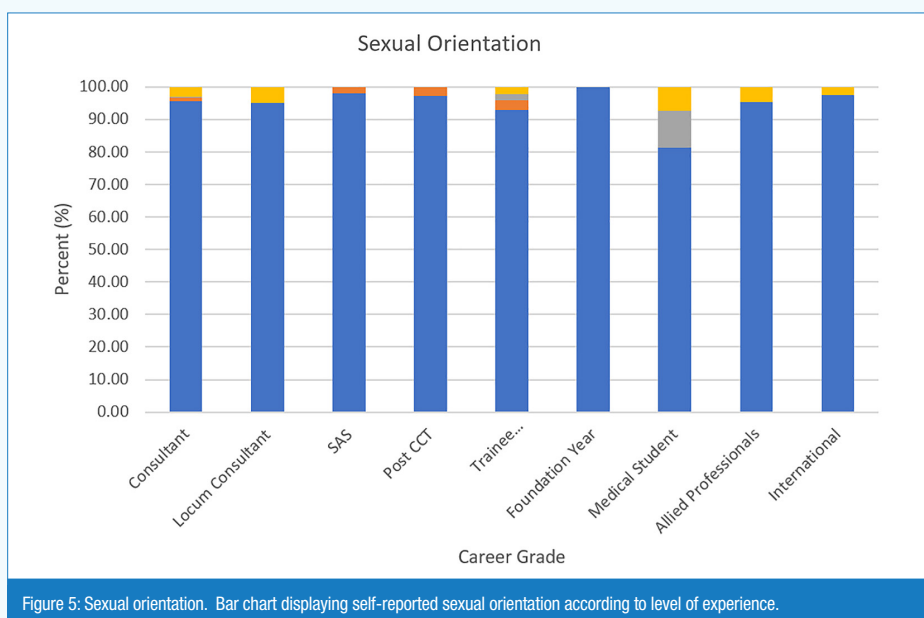


Figure 5: Sexual orientation. Bar chart displaying self-reported sexual orientation according to level of experience.

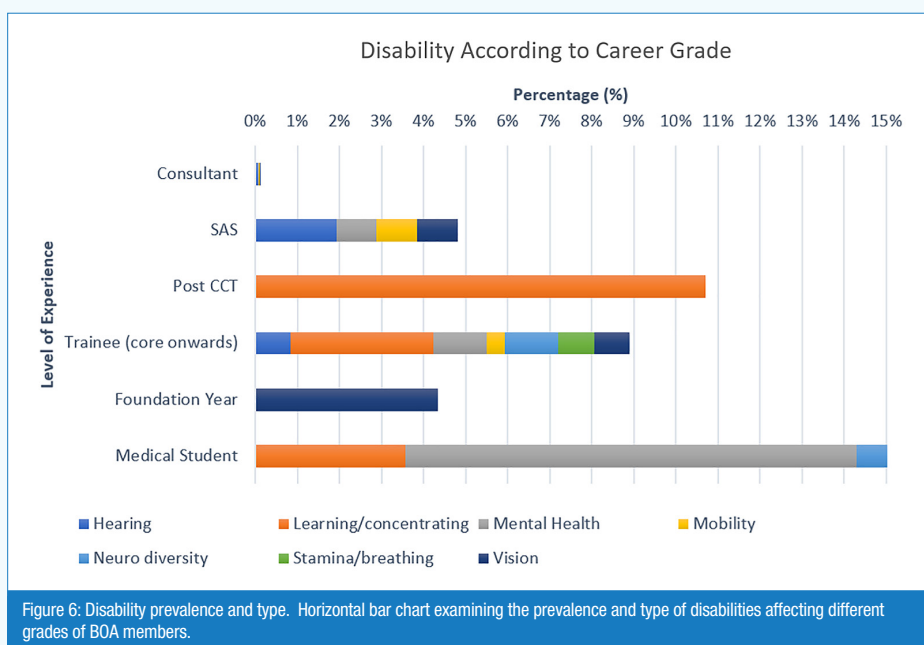


Figure 6: Disability prevalence and type. Horizontal bar chart examining the prevalence and type of disabilities affecting different grades of BOA members.