

Undergraduate and foundation training in trauma and orthopaedics: junior doctors have their say

Undergraduate education in musculoskeletal health is currently insufficient in most medical schools worldwide, in both basic sciences and clinical training. A national survey was carried out to obtain views of current doctors from various specialties about undergraduate and foundation training in trauma and orthopaedics.

Introduction

Trauma and orthopaedics is one of the most evolving surgical specialties with increasing interest in and competition for training posts. Approximately one third of the entire surgical workforce and up to 25% of all surgical procedures in secondary care are trauma and orthopaedics related (Briggs, 2012).

Musculoskeletal conditions are common and account for 2% of disease burden globally. These vary from chronic pathology in the form of joint diseases to more acute pathology in the form of fragility fractures and polytrauma, all of which are associated with significant physical disability, long-term pain and can have a significant negative impact on quality of life compared to other chronic diseases. As a consequence they are a major burden on both health and social care. The impact of musculoskeletal conditions is expected to increase dramatically with the ageing of

the population, comorbidities, increase in the number of road traffic accidents and changes in lifestyle resulting in obesity (Woolf and Akesson, 2001).

From 2005–10, the number of trauma and orthopaedics patients aged over 60 years increased by 26% while the number of patients under 60 years of age increased by 15% (Centre for Workforce Intelligence, 2011). This increased demand for trauma and orthopaedics services is a trend which is expected to continue. The net effect is an increased demand on clinicians to competently diagnose and manage a wide range of trauma and orthopaedics ailments.

The Bone and Joint Decade Global Alliance for Musculoskeletal Health was launched by the World Health Organization in 2000 to try and improve the quality of life of patients with musculoskeletal conditions by raising awareness, increasing research within the field and empowering patients with musculoskeletal disorders to be involved in their own care. For this to occur, it was essential that education of health professionals improved to reflect the burden of musculoskeletal conditions and meet the needs of patients (Woolf and Akesson, 2007). It is therefore appropriate that the diagnosis and management of common musculoskeletal problems should form an important part of the 'core' curriculum of any undergraduate medical training programme (Wright and Helliwell, 1992).

The authors of this study carried out a pilot questionnaire gathering opinions of foundation trainees, surgical and medical core and specialist trainees, along with GPs and GP trainees, on their experience of undergraduate trauma and orthopaedics training. The results of this pilot study demonstrated that during undergraduate medical training the duration of orthopaedic and musculoskeletal attachments can vary significantly. After analysing the results of the pilot survey the questions

were amended and made much more detailed. Junior doctors and GP trainees expressed concerns about the lack of confidence when it came to dealing with both trauma and elective orthopaedics. In most cases this was attributed to a lack of undergraduate and foundation year experience.

The pilot study raised concerns about the quality of undergraduate medical and foundation training in trauma and orthopaedics in the UK and whether the current system is sufficient to provide basic insight for newly qualified junior doctors, GPs and other surgical and medical doctors to be able to cope with the workload.

The subsequent survey reported here provides an opportunity to establish how junior and specialist trainees feel about their trauma and orthopaedics attachments during medical school and foundation training and how these placements could be improved to ensure trainees gain experience in the basic principles of this specialty. To the authors' knowledge this is the first survey of its kind asking current doctors about their opinions on their undergraduate and foundation trauma and orthopaedics training.

Methodology

The authors created a survey consisting of eighteen questions using the online survey software Survey Monkey (www.surveymonkey.com) (Table 1). The questions focused on the quantity and quality of undergraduate and foundation training in musculoskeletal and orthopaedic specialties and its usefulness. The survey link was distributed to 500 junior doctors, core trainees in a range of specialties, GP trainees, GPs and specialist registrars throughout the UK through deanery and foundation school circulatory emails. The survey was completed online by the trainees and the results were analysed using Survey Monkey software and Microsoft Excel.

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Table 1. Questions asked in the survey

Please give details of your medical school, foundation school and current deanery along with year of qualification
What is your gender?
What is your current grade?
What is your current training position?
How many months of trauma and orthopaedics rotation did you undertake during your foundation training? (FY1 and FY2 combined)
How many weeks of orthopaedic attachment did you undertake during medical school?
During medical school in which year was your orthopaedic attachment?
How well did the undergraduate orthopaedic attachment prepare you for trauma and orthopaedics rotation during foundation training?
How well did the undergraduate orthopaedic attachment prepare you for general foundation training?
In your opinion, how many weeks of orthopaedic attachment during medical school is necessary to prepare well for foundation training?
In your opinion during which year of medical school should students undertake an orthopaedic attachment?
How well did the trauma and orthopaedics rotation during foundation training prepare you for your chosen career?
Did you find it useful to have undertaken a trauma and orthopaedics rotation during foundation training?
Did you find it useful to have done a trauma and orthopaedics rotation during foundation training even if it is not your chosen career?
If you are a GP or GP trainee: do you think all GP trainees should undertake a trauma and orthopaedics rotation during training?
If you are a medical trainee (any medical speciality): do you think all medical trainees should undertake a trauma and orthopaedics rotation during training?
If you are a surgical trainee (excluding orthopaedics): do you think all surgical trainees should undertake a trauma and orthopaedics rotation during training?
Who should undertake a trauma and orthopaedics rotation during training?

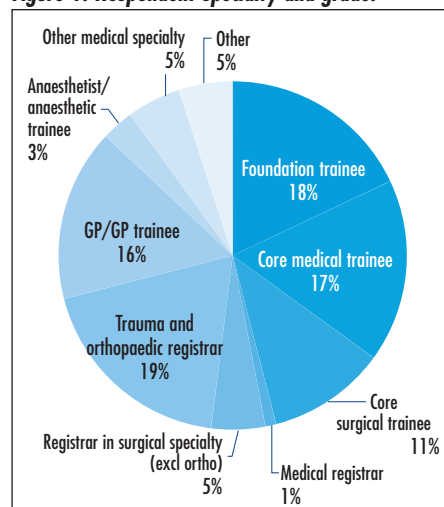
Results

The survey was sent to 500 trainees and completed by 200 – a response rate of 40%. Of these, 31 were GPs or GP trainees, 37 foundation trainees, 34 core medical and 23 core surgical trainees, 37 trauma and orthopaedics registrars, 10 surgical specialty registrars, five were anaesthetic trainees, three were medical registrars, and 20 were from other medical specialties or in the ‘other’ category (Figure 1).

As part of their undergraduate curriculum, 38% (37/200) had 4 weeks of orthopaedic rotation, 16% (31/200) had 2 weeks, 11% (21/200) had 3 and 6 weeks respectively and 1% (3/200) had no formal orthopaedic rotation during medical school (Figure 2). A few doctors commented that their orthopaedic rotation was combined with rheumatology, geriatric medicine, acute medicine or neurosurgery. These undergraduate attachments were mostly under-

taken during the 4th year (55%, 110/200) and 3rd year (32%, 63/200). The rest had the attachment during the 1st year or 5th year of their undergraduate programme.

Figure 1. Respondent speciality and grade.



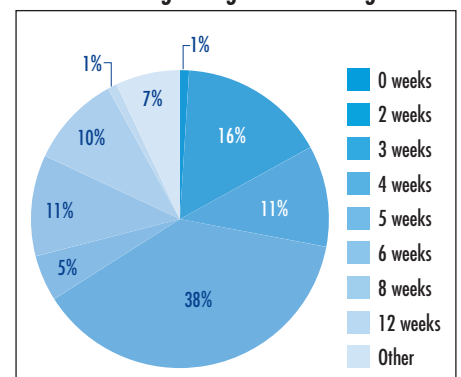
When asked how well the orthopaedic attachment during medical school prepared them for trauma and orthopaedics rotation during foundation training, 36.5% (58/159) replied ‘not at all’ and 34% (54/159) replied ‘slightly well’. One fifth (32/159) felt they were prepared ‘moderately well’ with only 7% (11/159) and 2.5% (4/159) feeling ‘very well’ and ‘extremely well’ prepared respectively (Figure 3a).

Overall, 38% (75/195) of doctors thought that the orthopaedic attachment during medical school prepared them ‘slightly well’ for general foundation year training, 37% (71/195) thought it did not prepare them at all, 16% (31/195) of respondents believed it prepared them moderately well and 8% (16/195) felt that it prepared them very well (Figure 3b).

Of the 200 respondents, 36.5% (73/200) chose 6 weeks as the optimal duration of an undergraduate trauma and orthopaedics attachment to prepare well for trauma and orthopaedics rotation while working as foundation doctors. This was followed by 26.5% (53/200), 16.5% (33/200) and 6% (12/200) who chose 4, 8 and 12 weeks respectively (Figure 3c).

Thirty six per cent (71/200) of doctors believed that a trauma and orthopaedics attachment during the 4th year would allow them to gain greater experience in orthopaedics and 34% (68/200) felt that repeated placements in both the 3rd and 5th year would be better than a single placement for providing a strong knowledge base. Ten per cent (20/200) thought only the 3rd year and 15% (30/200) felt both the 4th and 5th year were optimal for orthopaedic attachments (Figure 3d).

Figure 2. Duration of trauma and orthopaedic attachment during undergraduate training.



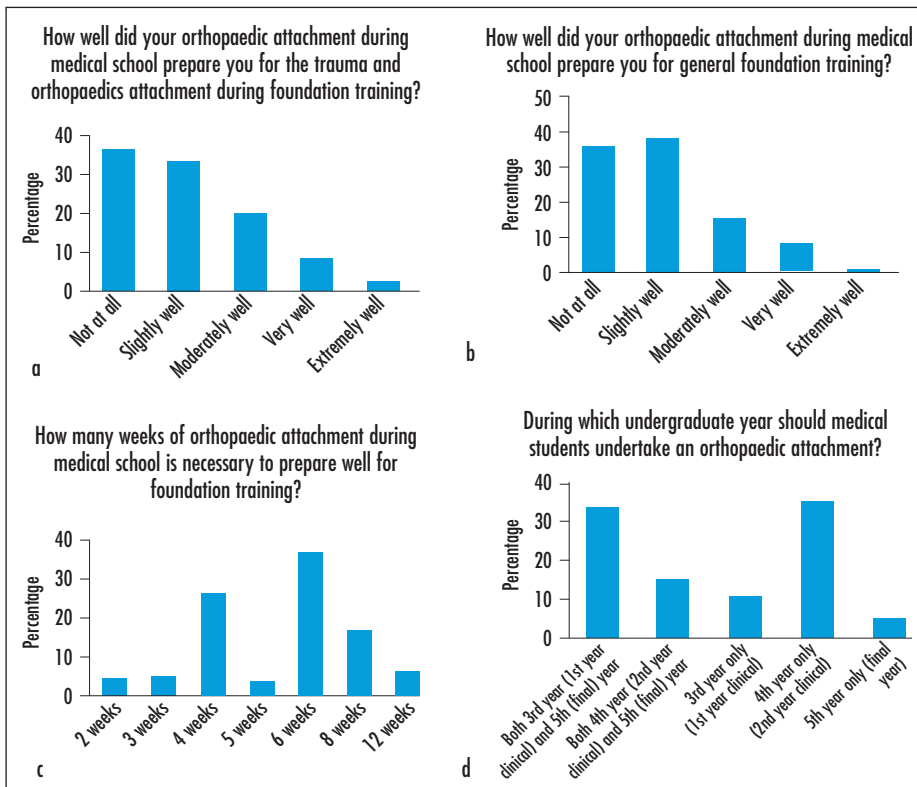
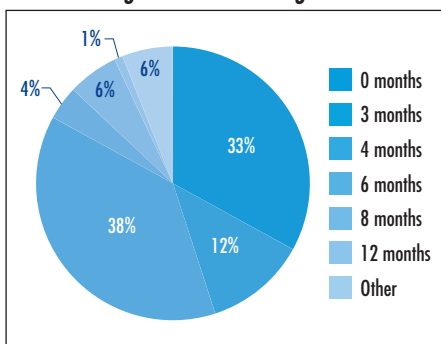


Figure 3. Trainees' opinions about their undergraduate trauma and orthopaedics rotations.

Most of the doctors (38%, 75/200) undertook 4 months of trauma and orthopaedics attachment during foundation year training, followed by 33% (66/200) who had not done a trauma and orthopaedics attachment. The rest of the respondents undertook between 2 and 12 months of trauma and orthopaedics during the foundation years (Figure 4).

The majority (35%, 53/152) of trainees felt that their trauma and orthopaedics attachment only prepared them slightly well and a quarter (38/152) felt it did not prepare them at all for their chosen careers. Twenty one per cent (32/152) of doctors felt it helped them prepare 'moderately

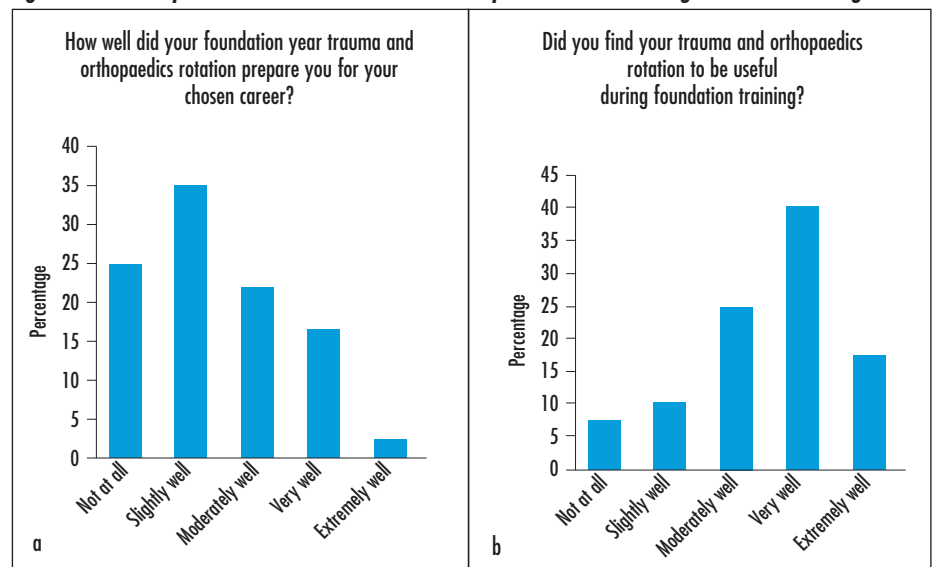
Figure 4. Duration of trauma and orthopaedics rotation during foundation training.



well' and 16.5% (25/152) felt very well prepared (Figure 5a).

Interestingly, 40% (50/127) found it very useful to have undertaken a trauma and orthopaedics attachment during their foundation year training and 17% (22/127) found the attachment extremely useful, with 8% (10/127) not finding it useful at all (Figure 5b). Of the doctors who undertook trauma and orthopaedics during

Figure 5. Trainee opinions about their trauma and orthopaedics rotation during foundation training.



foundation year training, 78% (81/104) found it to be either moderately or very useful despite not being their chosen career.

Eighty four per cent (26/31) of GP and GP trainees felt that all GP trainees should undertake a trauma and orthopaedics attachment during their training, and 90% (46/51) of surgical doctors felt they should undertake a trauma and orthopaedics rotation during their surgical training. In contrast, only 27% (18/67) of medical trainees felt they should undertake a trauma and orthopaedics rotation during their training (Figure 6).

When asked, 73% (145/200) of doctors felt all GP trainees should undertake a trauma and orthopaedics rotation during their training, 34% (67/200) felt all medical trainees should undertake a trauma and orthopaedics attachment, 78% (155/200) felt that all surgical trainees should undertake trauma and orthopaedics attachment and only 10% (20/200) felt that only those who want to pursue a career in trauma and orthopaedics should undertake the rotation during their training (Figure 7).

Discussion

Musculoskeletal disorders are one of the commonest reasons for primary care consultation, making up to 30% of all GP consultations. In 2006, the Musculoskeletal Service Framework review recognized the increasing demand for musculoskeletal services and that they have a major impact on health-care resources (Department of Health, 2006).

In spite of the high prevalence, musculoskeletal disorders continue to be poorly taught in both undergraduate and postgraduate settings and, in particular, in primary care. There are several reasons why musculoskeletal conditions are not a priority and why people do not get access to appropriate care. People with musculoskel-

Figure 6. Opinions of (a) GP, (b) medical and (c) surgical trainees about whether trainees in their specialty should undertake a trauma and orthopaedics rotation during their training.

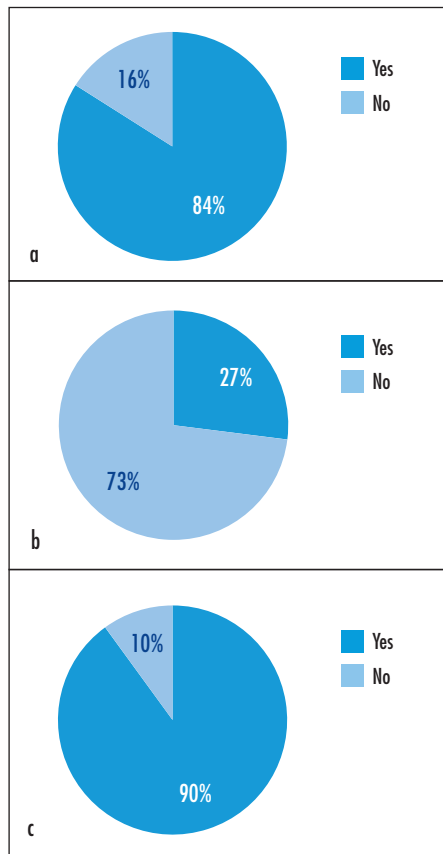
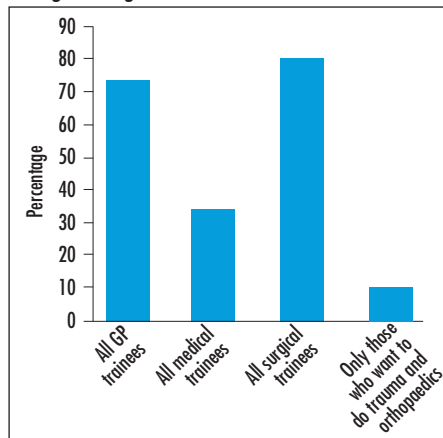


Figure 7. Respondents' opinions about who should undertake a trauma and orthopaedics rotation during training.



etal disorders often do not achieve the best possible outcomes and their problems are often underestimated by doctors (Woolf et al, 2004a). One reason is that many clinicians have not received sufficient education or training in musculoskeletal assessment, diagnosis and management. Undergraduate education in musculoskeletal health is currently insufficient in most medical schools worldwide in both basic science and clinical training (Williams, 2000; Pinney and Regan, 2001).

The lack of recognition of the importance of musculoskeletal health and of the needs of people with musculoskeletal disorders prompted the World Health Organization to formally launch the Bone and Joint Decade Global Alliance for Musculoskeletal Health to promote global musculoskeletal health and make musculoskeletal health a priority in health and social policies, strategies and actions at global, regional and national levels. It continued to reduce the burden and cost of musculoskeletal conditions to individuals, carers and society by promoting musculoskeletal health and science worldwide. This has been achieved in several ways, including setting standards and implementing training for all relevant health professionals. The aim was to influence the training programme in medical schools and increase exposure to musculoskeletal disorders with the aim of improving the diagnostic skills especially of GPs (Heinegard et al, 1998).

A previous survey in the UK showed that the undergraduate attachment represented the entire clinical teaching in musculoskeletal disease for most doctors entering general practice (Williams, 2000). There is an increasing discrepancy between the amount of time devoted to musculoskeletal and/or orthopaedic teaching in undergraduate training and the number of consultations on this subject in general practice, which is not made up during vocational training scheme placements.

The results of this survey demonstrate that the majority of trainees had 4 weeks of trauma and orthopaedics attachment during undergraduate training, mostly during the 1st or 2nd clinical year. However, a few had had no exposure to formal orthopaedic attachments during undergraduate training. It was interesting that most doctors perceived that the undergraduate trauma

and orthopaedics attachment did not prepare them well enough for their trauma and orthopaedics rotation during foundation training.

In this survey most doctors thought that at least 6 weeks undergraduate trauma and orthopaedics attachment would be optimal. Medical schools that have a comprehensive curriculum for musculoskeletal conditions have estimated that a minimum of 4–6 weeks is necessary to cover the clinical curriculum, with basic non-clinical background given at previous stages of the undergraduate course. However, the aim should be a 6–12-week clinical course to increase proficiency and to reflect the clinical importance of musculoskeletal conditions and its impact on individuals and our health-care system (Woolf et al, 2004b).

Out of those who undertook a trauma and orthopaedics rotation during their foundation years, a quarter felt it did not prepare them at all for their chosen career. However, interestingly, nearly half found it 'very useful' and 'extremely useful' to have undertaken a trauma and orthopaedics rotation during foundation training.

Most GP trainees felt that they should undertake a trauma and orthopaedics rotation during their training, but out of the GP/GP trainee respondents, nearly a quarter had not undertaken any trauma and orthopaedics rotation during their training. Most respondents felt that all GPs and surgical trainees should undertake trauma and orthopaedics rotations during their training, with 34% suggesting that medical trainees should also undertake trauma and orthopaedics rotations as junior doctors.

This survey highlights important views and opinions of current junior doctors and trainees. It shows an element of dissatisfaction with orthopaedic and musculoskeletal teaching at the undergraduate level and how underprepared the doctors feel with regards to coping with working as a junior doctor or during the trauma and orthopaedics rotation during foundation years. These raise serious concerns about the training of future doctors. More than half of non-surgical doctors in this survey had no orthopaedic rotation during foundation training, so their undergraduate attachment in orthopaedics and/or rheumatology was their only exposure to formal musculoskeletal training. With a rise in patients with musculoskeletal disorders and in the

elderly population, doctors in the emergency department and even in non-surgical specialties will be managing these patients. This has tremendous implications for quality of patient care and referrals. In this survey undergraduate training represented the entire clinical teaching on musculoskeletal disorders for nearly a quarter of GP respondents. This reflects a discrepancy between the duration of musculoskeletal and/or orthopaedic training and the level of primary care consultations. It was interesting, and perhaps not surprising, to see that the majority of GP trainees felt that they would benefit from having trauma and orthopaedics as part of their training.

As GPs are the first point of access to the health-care system for patients, it is imperative that they are adequately equipped to deal with the problems they encounter in order to function in their role as gatekeeper.

Furthermore, with increasing numbers of musculoskeletal consultations, a good foundation of musculoskeletal knowledge and principles would provide better patient care and appropriate secondary care referrals.

Conclusions

The authors expect that the results of this survey will open up an interesting debate among clinicians and academics. It is vital that the next generation of doctors receives high quality training as they will require the knowledge and skills of trauma and orthopaedics in their working lives more than ever. More time and resources need to be devoted to the teaching and training of orthopaedics and musculoskeletal disorders so that it reflects the importance of trauma and orthopaedics in clinical practice. **BJHM**

Conflict of interest: none.

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KEY POINTS

- Musculoskeletal disorders are one of the commonest reasons for primary care consultation, accounting for up to 30% of all GP consultations.
- In spite of the high prevalence, musculoskeletal disorders continue to be poorly taught in both undergraduate and postgraduate settings and, in particular, in primary care.
- This survey shows an element of dissatisfaction with orthopaedic and musculoskeletal teaching at the undergraduate level and how underprepared the doctors feel with regards to coping with working as a junior doctor or during the trauma and orthopaedics rotation during foundation years.
- It is vital that we provide a high quality of orthopaedic and musculoskeletal teaching and training to the next generation of doctors.
- We need to devote more time and resources so that teaching and training of orthopaedics musculoskeletal disorders reflects the importance of trauma and orthopaedics in clinical practice.

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