



# WJMER

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## Impressions of Musculoskeletal Medicine Education in Current Doctors

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### Abstract

**Background:** Musculoskeletal (MSK) and/or sports and exercise medicine (SEM) is frequently encountered in the practice of many medical specialties. Basic competency and confidence in clinical assessment and knowledge would be expected. However, a review of the literature shows low confidence and low knowledge of this specialty within the medical profession.

**Methods:** As much of the literature is 10 years old, we aimed to demonstrate whether this situation has changed in recent years by surveying current doctors, the vast majority of whom qualified within the last 10 years.

**Discussion:** We showed that, across many different specialties, the MSK medicine burden is around 30%, consistent with previous studies. Our results, however, demonstrate very little, if any, MSK medicine teaching at medical schools and beyond. Further, confidence levels in managing these presentations is low and many believe this should have been taught at some stage within their formative years.

**Conclusion:** It is time that medical schools appreciated SEM/MSK medicine as an important, widely relevant discipline in its own right (as has been done by the medical profession for over 10 years) and consider adding this to their core curriculum.

### Key Words

Confidence; Education; Musculoskeletal; Medicine

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### Introduction

Basic competency in musculoskeletal (MSK) medicine is vital in many specialties including GP, Rheumatology, Emergency Medicine, and Trauma and Orthopaedics<sup>1</sup>, and is a key educational recommendation of the GMC<sup>2</sup>. MSK medicine has been reported to comprise between 15-30% of encounters in general practice<sup>3</sup>, with similar amounts presenting to the Emergency Department<sup>4</sup> and considerably higher to Rheumatology and Orthopaedics. Despite this, musculoskeletal medicine does not form a core part of the medical school curriculum and may be further deteriorated by decreasing exposure to cadaveric work<sup>5</sup> where visual 3D understanding of anatomy and its relations is learned.

The UK government has been very positive in introducing many initiatives to encourage an increasingly sedentary population to become more active. This includes such innovations as 'Couch to 5K' and 'Change4life', as well as increasing fitness-focused programmes on public television. However, there is a disproportionately low amount of time dedicated to MSK medicine considering this and the high proportion of clinical MSK encounters seen in

medical practice. Medical schools rarely teach sports and exercise medicine and have limited exposure to sports orthopaedics. A study from Canada reported that less than 3% of the curriculum was dedicated to MSK medicine<sup>4</sup>. The secondary knock-on effect of this lack of exposure is then the lack of doctors wishing to pursue a career in SEM, leaving a gap in overall NHS care for the public, especially the amateur athlete<sup>6</sup>. Further, 8.9 million work days were lost to MSK issues in the UK in 2016-2017<sup>7</sup>. This underlines the real significance of a financial impact to the economy of the lack of availability of MSK medicine specialist knowledge.

Knowledge and confidence in MSK medicine post-qualification has been tested across the world, all with disappointing results. In a survey of 297 GPs, Abuo-Raya<sup>8</sup> showed low confidence, with 80% stating they lacked confidence in dealing with MSK presentations. This is elaborated upon by Roberts *et al*<sup>9</sup> who showed very low levels of confidence in GPs dealing with specific MSK issues including lower back pain (LBP), with 69% saying they were not comfortable dealing with LBP, 62% uncomfortable when dealing with osteoarthritis, and 58% lacking

confidence when dealing with sports injuries.

Knowledge of MSK topics has widely been shown as lacking through tests administered to a variety of groups across the world and chosen specialties within medicine. Abou-Raya<sup>8</sup> showed that 75% of practicing GPs failed a basic MSK rheumatology test. Similarly, 70% of GPs failed a MSK exam set by Queally<sup>1</sup>. A variety of doctors (n=334) were tested by Matzkin<sup>10</sup> where only 21% passed their MSK test. Similar levels of scoring have been shown in many

similar tests run in the US looking at medical students and doctors.

### Methods

A questionnaire was designed which focused on current doctors and their impressions of their preparation for their current experiences within medicine. The main body of the questionnaire is included in Figure 1. This survey was disseminated over closed social networks and across trainees at Hillingdon Hospital. It was left open for a total of

1. During Medical school, how many weeks were spent in
  - a. Orthopaedics
  - b. Sports Medicine / MSK
2. In your current practice, what percentage of time is spent dealing with MSK/SEM consultations?
3. Do you feel you were adequately prepared for the demands of your current workload regarding
  - a. MSK medicine
  - b. Orthopaedics
4. How satisfied are you that medical school prepared you adequately for your current workload in
  - a. MSK medicine
  - b. Orthopaedics
5. How satisfied are you that Foundation training prepared you adequately for your current workload in MSK medicine/Orthopaedics
6. What aspect of MSK medicine do you find most challenging?
7. Which anatomical system do you find most challenging?
8. Do you think additional time at Medical School in MSK medicine would have been useful?
9. Do you think additional time at Medical School in orthopaedics would have been useful?

**Figure 1:** Body of the Questionnaire circulated

**Figures 2a, b and c. Demographics of respondents (n=50) in their current position within medicine (a), their year of qualification (b) and country of qualification (c).**

Position	Number	Percentage
GP	5	10
GP Trainee	5	10
Emergency Medicine Trainee	14	28
Medical Trainee	13	26
Orthopaedic Trainee	7	14
Surgical Trainee	1	2
Foundation Trainee	5	10

**Figure 2a**

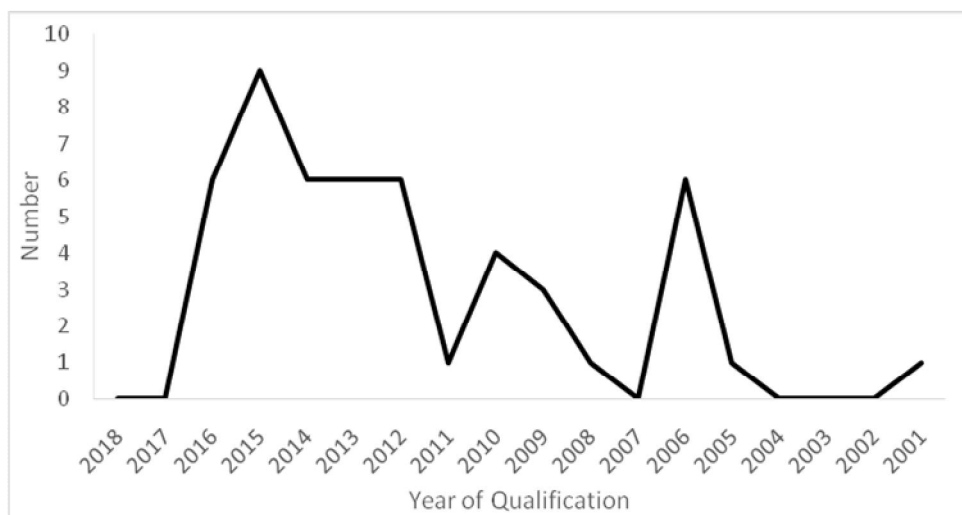


Figure 2b

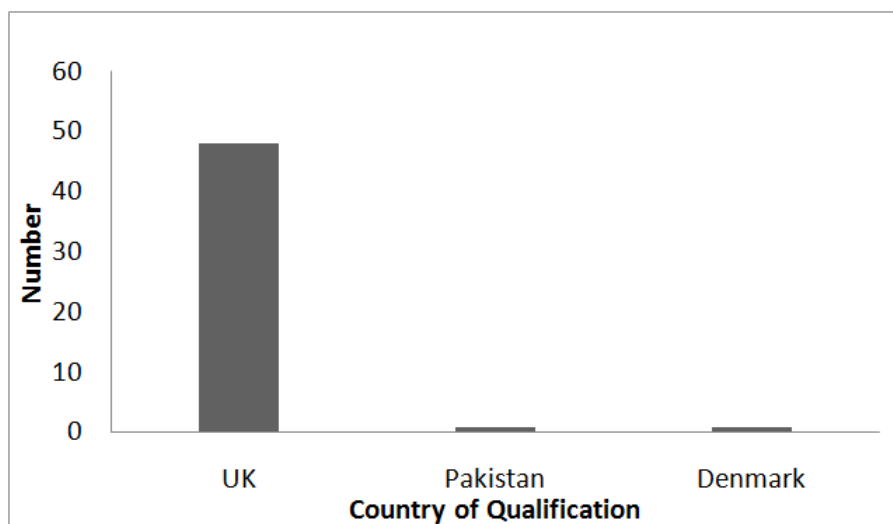


Figure 2c

one month. Fifty responses were received. The demographics of the respondents are shown in Figures 2a-c.

### Results

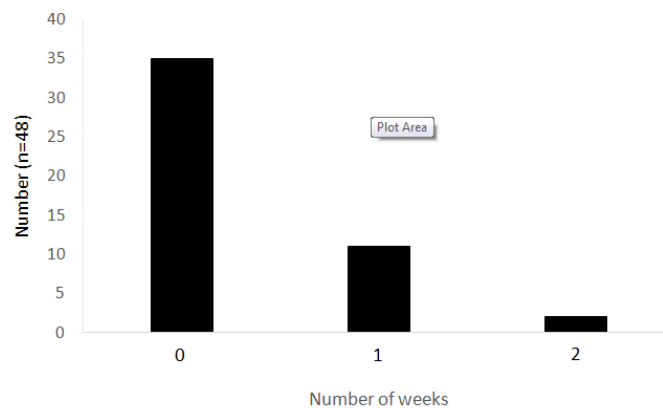
The total number of weeks spent in Orthopaedics and SEM/MSK medicine in medical school is presented in Figure 3. Figure 4 shows the different rotations experienced by recent trainees in the Foundation and Core Training. On average, the participants report that MSK/SEM consultations represent 30% of their total workload and 26% is orthopaedic. When asked whether they felt adequately prepared by medical school for their current workload regarding SEM/MSK medicine 54% said 'No'. When asked to rate their satisfaction with SEM/MSK preparation from medical school, only 28% were 'Satisfied' or 'Very Satisfied'. This only changed very slightly when asked the same question of Foundation Training, with 32% saying they were 'Satisfied' or 'Very Satisfied'. When asked if they

thought more time dedicated specifically to MSK/SEM medicine at medical school would have been helpful, 72% said 'Yes'.

In terms of what our current doctors find most challenging, Figure 5 shows the majority of doctors lack confidence when dealing with paediatric MSK issues. Four respondents answering 'Other' felt they found no aspects challenging and one felt he/she found all aspects of MSK/SEM medicine most challenging. Further defining this into anatomical systems, Figure 6 shows that most find Foot and Ankle and Spine to be the most challenging regions to see and assess. Within the two respondents answering 'Other', one stated he/she did not find any aspect most challenging and 1 stated he/she found all of it most challenging.

### Discussion

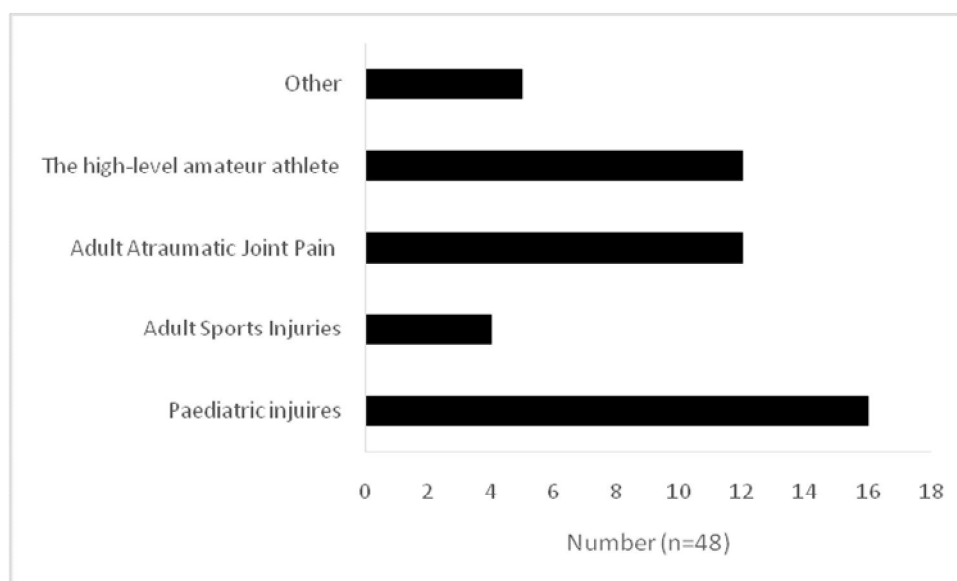
Despite many and international representative organisations in sports and exercise medicine being



**Figure 3:** Number of weeks reported to have been spent studying MSK/SEM during medical school. n=48 as 2 respondents failed to answer the question

Foundation Training		Core Training	
	Number		Number
SEM/MSK Medicine	0	SEM/MSK Medicine	0
Emergency Medicine	39	Emergency Medicine	22
General Practice	21	General Practice	10
Orthopaedics	25	Orthopaedics	8

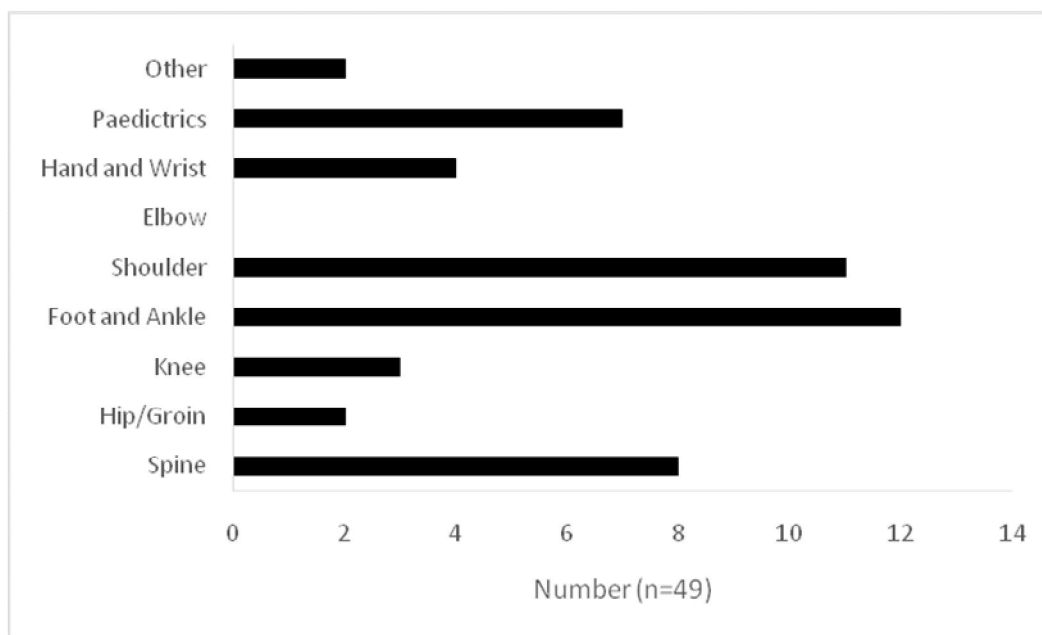
**Figure 4:** Table showing the different specialty rotations the participants rotated to within Foundation and Core Training



**Figure 5:** Graph showing the results from the question 'what aspects of MSK medicine do you find most challenging?' n=48 as 2 respondents failed to answer the question

formed in the 1905s (e.g. BASEM), it was not until 2007 that MSK/SEM became a separately recognised medical specialty. Nevertheless, since then there appears to have been no change in the fundamental teaching within the medical school environment. Not only can MSK/SEM medicine be considered a separate, stand-alone specialty, but our survey shows a huge overlap of this topic within many other specialties. In line with previous studies, it is clear that doctors in a range of specialties encounter MSK issues in around 30% of their practice. Basic competency and confidence in MSK

medicine, therefore, really should be expected. Many studies have shown this not to be the case<sup>1,3,4,8,10</sup> and made suggestions of how to readdress this issue. The most logical starting point would be at medical school since MSK medicine is represented across many different specialties within medicine and surgery including, but not limited to, Primary Care, Emergency Medicine, Orthopaedics, and Rheumatology. Further, with the shift in health, fitness and exercise within the UK, possibly as part of the legacy following the London 2012 Olympic Games, as well as the recognition of the need to



**Figure 6:** Graph showing the results from the question 'which anatomical system in MSK medicine do you find most challenging?'. n=49 as one participant failed to answer the question

improve public health, increasing numbers of MSK-related issues are likely to present in the future.

Our study showed that no-one reported studying more than two weeks in MSK/SEM medicine within their medical school programme. This is consistent with the findings of Craton and Matheson<sup>4</sup> who showed that exposure to MSK medicine was less than 3% of the total programme in Canada. We additionally show that 72% of our cohort believe that more time dedicated to this discipline would have been useful for their current practice. We point out that our cohort was from a very mixed background of specialties within medicine. Further, only 28% of participants reported they were satisfied or very satisfied with the teaching they received at medical school in this topic. This would suggest that the potential argument postulated that MSK/SEM is taught within and as part of other specialties such as Orthopaedics is therefore rendered somewhat moot since only just over a quarter of respondents are satisfied with this current approach to MSK teaching. In addition, Matzkin demonstrated that this assumed integrated method of learning MSK medicine within the overall teaching in medical school is not effective since only 21% passed a basic MSK exam. Notably, only 58% of those passing being from an orthopaedic background suggesting that even postgraduate exposure to a higher percentage of MSK issues is insufficient. It is important to recognise that even small, focussed interventions can make a big difference to skills learning. Even something as small

as a one-day course on MSK medicine can lead to a significant improvement in confidence in examination skills in the medical student<sup>3</sup>.

This basic questionnaire raises several very important points regarding medical school exposure and the importance of MSK/SEM teaching. Despite its high prevalence throughout many medical and surgical disciplines, and being recognised as a speciality in its own right, SEM/MSK medicine is still not being adequately addressed in medical education, leaving doctors dissatisfied with their preparation in this topic from medical school and leaving them with low confidence in dealing with this type of consultation.

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