

Musculoskeletal Examination: Education and Training for Current and Future Needs of Healthcare Provision

Olwyn M R Westwood*

Professor of Medical Education & Associate Dean, Barts and the London School of Medicine & Dentistry, Queen Mary University of London, London, UK

Introduction

Musculoskeletal (MSK) pain remains one of the commonest reasons for a general practitioner appointment, affecting around 29% of adults in the UK with joint pain or arthritis [1] and represents around 10 million consultations per year. However, newly qualified professionals may feel less prepared, so lack the confidence to treat as undergraduate medical and healthcare curricula have relatively little formal education and training in MSK examination and management. It is also quite possible that conditions might go unrecognised and patients managed inappropriately as a consequence. Classic examples like the misdiagnosis of musculoskeletal chest pain associated with joint or muscle damage in the thorax and neck [2], or referred pain presented as acute shoulder pain (Kehr's sign) that may be symptomatic of spleen injury, renal calculi or ruptured ectopic pregnancy. The apparent discrepancy between the magnitude of the MSK conditions and the attention given in curricula is well documented [3,4,5] and is an enduring problem, given the progressive increase in the aging population.

The Impact of MSK Conditions on Health Services

MSK disorders represent a significant burden to healthcare services, and would appear to represent a similar percentage of primary care consultations world-wide [6,7,8]. Indeed, the indirect economic costs to society through loss of earnings, sick leave, disability benefits and pension funds are huge. Naturally, the incidence is noticeably higher in certain groups, such as the elderly and elite athletes [9]. The majority of which receive MSK examinations as routine, and are knowledgeable (acquired actively or passively) about their condition and potential frailties. However, individuals in other occupations where complex or repetitive tasks are the norm may also be at risk, but their susceptibility may not as instantly recognized, e.g. orchestral musicians [10], health professions [11]. Information about workplace practises are not a typical theme in a clinical consultation [12]. Although audits of working conditions, with recommendations for reducing exposure to potential injury, may be standard form, more focused education and skills training [13] for effective management of MSK conditions are also essential.

Education of Medical and Health Professions

The emphasis in higher education is to equip graduates with the skills for life-long learning [14]. Although the disparities in undergraduate curricula are recognised, knowledge and skills gap could be resolved by appropriate postgraduate training. This is amply demonstrated in GPs who have had targeted education in MSK assessment and disease management, and with the specialist support available for patients with more complex disorders, e.g. consultants, physiotherapy services, feel confident to treat [15].

One dilemma is that clinical practice is not always a favourable environment for learning owing to the conflict between service demands and teaching. Therefore it is worth considering patients as lay-tutors to contribute to the workplace based learning. To identify individuals strategically from the rheumatology / orthopaedic clinic who: (i) are at different phases or disease states, and (ii) have the aptitude to be trained as 'Expert Patients' (EPs), provides an invaluable

resource for students and qualified practitioners. EPs are able to guide trainees in physical examination and taking a focused history. With their in-depth personal and specialist knowledge of the disorder, can support skills development and contextualise clinical theory into practice, and facilitate a deeper awareness of the quality of life and treatment compliance issues [16].

A recent study by de Boer et al. [17] showed the efficacy of EPs for undergraduate training in MSK disorders for increasing skills training in a more authentic setting than a simulation suite. Time spent with an EP is probably one of the first independent patient consultations that a student might have, with the additional benefit of: (i) a secure learning opportunity which is patient-centred, (ii) immediate and focused critique of performance. Where the feedback is relevant, recognised as from an informed source, be it a patient educator, a peer or a health professional, it can facilitate skills development and learner confidence [18,19].

The use of EPs in parallel with Computer-Assisted Learning (CAL) programs is an advantageous 'double act'. To be effective, its content needs to be deemed relevant, in a concise format, with specific and measureable outcomes in a recommended time frame. The characteristic utility of CAL has to be its flexibility and ease of access, and when interactive, it enhances personalised learning. By persuading colleagues with the in-depth knowledge and skills (and understanding of the pressures of service delivery) to participate in the design, adds to the credibility of the final product. For instance: video capture of procedural skills with dialogue, evidence-based knowledge as applied to practice. Before- and after- assessments of knowledge and skills area as demonstration of progress, and accreditation of continued professional / personal development are also features that encourage learning.

Who should be Trained to Treat MSK Disorders?

The remit of all medical and healthcare education is to train professionals with the appropriate knowledge and skills sets to meet the needs of the local healthcare system. But the expectations of traditional roles are changing, and new professional groups have emerged in response to recent and impending skills shortages.

As any reviewer of curricula content will attest, there are considerable overlaps between health professional programmes, albeit

*Corresponding author: Olwyn M R Westwood, Professor of Medical Education & Associate Dean (Education Quality), Institute of Health Sciences Education, Barts and the London School of Medicine & Dentistry, Queen Mary University of London, Garrod Building, Turner Street, London E1 2AD, United Kingdom, Tel: 020 7882 2219; Fax: 020 7882 7144; E-mail: o.westwood@qmul.ac.uk

Received March 29, 2012; Accepted March 30, 2012; Published April 03, 2012

Citation: Westwood OMR (2012) Musculoskeletal Examination: Education and Training for Current and Future Needs of Healthcare Provision. Rheumatology S2:e001. doi:10.4172/2161-1149.S2-e001

Copyright: © 2012 Westwood OMR. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

the academic levels may differ, thus boundaries have become less well-defined. The professional regulators specify curricula content, however some defensive behaviours have presented when skills and competences expected of one professional are undertaken by another. Hence, inter-professional modules have been developed to encourage awareness and enhance further the cooperation within the multi-disciplinary teams. The paper in this issue by Griffin et al. [20] has highlighted the benefits of such a learning package.

The National Health Service (NHS) of the UK, following the publication of the NHS plan (Department of Health 2000) [21] has made significant attempts to re-examine the way in which the healthcare workforce is trained. Although, as a new practitioner roles have emerging there has been some confusion over their precise place in the NHS hierarchy [22]. Indeed the nomenclature has added to the ambiguities when role titles assigned have not been defined clearly and 'protected'. Changes to service delivery and models of learning are therefore needed for specialist skills development and the management of MSK patients that has an evidence-based. Accordingly, an increased efficiency should follow the better integration and co-ordination of care, so reduce the frequency in which patients are seen by a different professional at each appointment.

In respect of MSK disorders, as an example, the role of physiotherapists has changed, affording them greater autonomy for diagnosis and treatment across the health and social care continuum. The physiotherapist-led clinics, with effective screening strategies and patient referral for specialist consultant management has resulted in more efficient care pathways [23]. Moreover, the value of physiotherapy [24] involvement in occupational health services has been noted for reducing the risk of injury, and these early interventions should decrease the days lost owing to sick leave.

While new skills for the conventional professional roles have been described, [25] Mohtadi, Chan et al. in this issue have explained the education and function of a new practitioner, the Non-Physician Expert (NPE) for an acute knee injury clinic. The trained NPE, with delegated and negotiated autonomy to practise under a supervising physician, apply strict protocols for treatment, and referral to the attending physician. This successful innovation has happened by recruiting individuals with the aptitude for routine skills competence within a narrow scope of practise. Significantly, it has benefited patients and released other professionals, e.g. physicians, to treat patients with multiple or complex problems, resulting in a more efficient use of resources while still maintaining high-quality patient centred care.

Conclusion

Improving access to healthcare services for MSK conditions in the face of the limited availability of resources and workforce is a global issue. Therefore judicious and relevant training in MSK examination and management content in the health professional curricula needs to be prioritised. There are some imaginative examples of practice reforms that use creative approaches for maximizing the use of resources. Innovative education programmes, whether they are intended for the existing or new professional roles, and the focused training of selected individuals for specialist clinics may be a way forward.

References

1. Arthritis Research Council (ARC) Epidemiology Unit and ARC / MORI poll (2002) Arthritis: The Big Picture.
2. Brunse MH, Stochkendahl MJ, Vach W, Kongsted A, Poulsen E, et al. (2010) Examination of musculoskeletal chest pain - an inter-observer reliability study. *Man Ther* 15: 167-172.
3. Day CS, Yeh AC (2008) Evidence of educational inadequacies in region-specific musculoskeletal medicine. *Clin Orthop Relat Res* 466: 2542-2547.
4. Abou-Raya A, Abou-Raya S (2010) The inadequacies of musculoskeletal education. *Clin Rheumatol* 29: 1121-1126.
5. Sirisena D, Begum H, Selvarajah M, Chakravarty K (2011) Musculoskeletal examination--an ignored aspect. Why are we still failing the patients? *Clin Rheumatol* 30: 403-407.
6. Badley EM, Crotty M (1995) An international comparison of the estimated effect of the aging of the population on the major cause of disablement, musculoskeletal disorders. *J Rheumatol* 22: 1934-1940.
7. Brooks PM (2006) The burden of musculoskeletal disease--a global perspective. *Clin Rheumatol* 25: 778-781.
8. Pambos M, Ng J, Loukes J, Matheson J, Aryal B, et al. (2012) Demographics and diagnoses at rural health camps in Nepal: cross-sectional study. *Fam Pract* (Epub ahead of print).
9. Wójcik M, Siatkowski I (2011) Occurrence of weak links of biokinematics chain and pain feeling in the lumbar spine of kayakers and female rower - preliminary observation. *Rheumatology S2*: 001.
10. Driscoll T, Ackermann B (2012) Applied musculoskeletal assessment: results from a standardised physical assessment in a national population of professional orchestral musicians. *Rheumatology S2*: 005.
11. Menzel NN, Hughes NL, Waters T, Shores LS, Nelson A (2007) Preventing musculoskeletal disorders in nurses: a safe patient handling curriculum module for nursing schools. *Nurse Educ* 32: 130-135.
12. Weevers HJ, van der Beek AJ, van den Brink-Muinen A, Bensing J, Boot CR, et al. (2009) Communication about work between general practitioners and patients consulting for musculoskeletal disorders. *Qual Prim Care* 17: 197-203.
13. Williams SC, Gulihar A, Dias JJ, Harper WM (2010) A new musculoskeletal curriculum: has it made a difference? *J Bone Joint Surg Br* 92: 7-11.
14. Oswald AE, Bell MJ, Wiseman J, Snell L (2011) The impact of trained patient educators on musculoskeletal clinical skills attainment in pre-clerkship medical students. *BMC Med Educ* 11: 65.
15. Roberts C, Adebajo AO, Long S (2002) Improving the quality of care of musculoskeletal conditions in primary care. *Rheumatology (Oxford)* 41: 503-508.
16. Phillpotts C, Creamer P, Andrews T (2010) Teaching medical students about chronic disease: patient-led teaching in rheumatoid arthritis. *Musculoskeletal Care* 8: 55-60.
17. de Boer A, Melchers D, Vink S, Dekker F, Beart L, et al. (2011) Real patient learning integrated in a preclinical block musculoskeletal disorders. Does it make a difference? *Clin Rheumatol* 30: 1029-1037.
18. Perry ME, Burke JM, Friel L, Field M (2010) Can training in musculoskeletal examination skills be effectively delivered by undergraduate students as part of the standard curriculum? *Rheumatology (Oxford)* 49: 1756-1761.
19. Cushing A, Abbott S, Lothian D, Hall A, Westwood OM (2011) Peer feedback as an aid to learning--what do we want? Feedback. When do we want it? *Now! Med Teach* 33: e105-e112.
20. Griffin CJ, Chung C, Tzortziou-Brown V, Westwood O, Morrissey D (2012) Capturing the Combined Clinic: Inter-professional Multimedia Musculoskeletal Examination as a Teaching Resource.
21. Department of Health (2000) The NHS Plan for England.
22. Westwood OM, Leinster SJ, Weinberg JR (2008) A healthcare curriculum for the 21st century: time for flexibility? *J R Soc Med* 101: 59-62.
23. Boissonnault WG, Ross MD (2012) Physical Therapists Referring Patients to Physicians: A Review of Case Reports and Series. *J Orthop Sports Phys Ther* (Epub ahead of print).
24. Phillips CJ, Phillips R, Main CJ, Watson PJ, Davies S, et al. (2012) The cost effectiveness of NHS physiotherapy support for Occupational Health (OH) services. *BMC Musculoskelet Disord* 13: 29.
25. Mohtadi N, Chan DS, Lau BH, Lafave MR (2012) An innovative Canadian solution for improved access to care for knee injuries using "Non-Physician Experts": The Calgary Acute Knee Injury Clinic. *Rheumatology S2*: 002.