The elephant in the room: Too much medicine in musculoskeletal practice.

Jeremy S Lewis¹,²,³, Chad Cook⁴, Tammy C Hoffmann⁵, Peter O’Sullivan⁶,⁷

¹School of Health and Social Work, University of Hertfordshire, Hatfield AL10 9AB, Hertfordshire, United Kingdom.
²Therapy Department, Central London Community Healthcare National Health Service Trust, London, United Kingdom.
³Department of Physical Therapy and Rehabilitation Science, Qatar University, Doha, Qatar.
⁴Physical Therapy Division and Duke Clinical Research Institute, Duke University, Durham, North Carolina, United States of America.
⁵Professor of Clinical Epidemiology, Institute for Evidence-Based Healthcare, Bond University, Queensland, Australia.
⁶School of Physiotherapy and Exercise Science, Health Sciences Division, Curtin University, Western Australia.
⁷Bodylogic Physiotherapy, Perth, Western Australia, Australia.

Statement of Financial Disclosure and Conflict of Interest:

The authors (JL, CC, TH, PO) affirm that we have no financial affiliation (including research funding) or involvement with any commercial organisation that has a direct financial interest in any matter included in this manuscript.

Corresponding author:
Jeremy Lewis
School of Health and Social Work
Wright Building
College Lane Campus
University of Hertfordshire
Hatfield AL10 9AB
Hertfordshire
United Kingdom

T: +44 (0)1707 284219
E: jeremy.lewis@LondonShoulderClinic.com

Word count: 2950
Introduction

Advances in assessment and management of musculoskeletal conditions (e.g. fracture management) have improved care for many people. We contend that there have been other less beneficial developments in the provision of care for people with musculoskeletal pain conditions – one is the worrying tendency to provide too much medicine.

As there are overlaps and confusion regarding terminology, usage and definitions, for the purposes of this Viewpoint we will use the term too much medicine as an umbrella term that includes over-diagnosis, mis-diagnosis, false-positive, diagnostic over-medicalisation and over-detection. Too much medicine has led to over-treatment, over-utilisation, interventional over-medicalisation and low-value care.

Many musculoskeletal conditions require a level of investigation and intervention, but too much medicine occurs when the provision of either or both, are unjustifiably excessive. For example, referring an individual with non-specific low back pain with no red flags for a magnetic resonance imaging (MRI). Another concern in musculoskeletal healthcare is medicalising normality: when a normal human function or condition is labelled as abnormal.

In this Viewpoint we will argue that too much medicine and medicalising normality in contemporary musculoskeletal practice, has become the ‘elephant in the room’. Medicalising normality creates health concerns when none exist. Too much medicine involves provision of care where benefits do not outweigh harms and wasting precious healthcare resources. We (1) list two common examples of too much medicine, and two examples of medicalising normality, relevant to physical therapy practice, (2) outline the drivers and causes of too much medicine and medicalising normality and (3) make suggestions for change.

Two Examples of Too Much Medicine relevant to Physical Therapy Practice

Non-surgical interventions for pain
Musculoskeletal pain management costs continue to rise. Individuals may have been mis-informed that a myriad non-surgical healthcare options; acupuncture, manual therapy, myofascial trigger point therapy, injections, pharmacology and many others will in isolation ‘fix’ the problem. The (ab)use of opioids has been at the forefront of the drive to eradicate pain. Worldwide, the use of prescription opioid analgesics more than doubled between 2001 and 2013, leading to an opioid epidemic in many countries. In the USA in 2017, healthcare providers (principally general practitioners) prescribed opioid pain medication 191 million times or 59 prescriptions per 100 people.

https://www.cdc.gov/drugoverdose/maps/rxrate-maps.html. In the USA, 29 million people take non-steroidal anti-inflammatory medications (NSAIDs) with a concomitant 100,000 hospitalisations and 17,000 related deaths.
There is substantial evidence that many surgical procedures perform no better than skin incisions and arthroscopy without the ‘fix’ (sham surgery), especially when the patient’s main complaint is pain.\(^5\) Examples include: repairs for non-traumatic medical meniscal tears, arthroscopic debridement for knee osteoarthritis\(^11\), Type II SLAP lesions\(^16\), biceps tenodesis for long head of biceps pathology\(^16\), and acromioplasty for subacromial impingement.\(^13\) Another concern relates to the prioritising of expensive surgical procedures when less expensive and equally effective alternatives exist. Non-surgical management, principally in the form of graduated activity and exercise has been repeatedly shown to be as effective as surgery for shoulder pain, knee pain and the majority of grade I to III ankle sprains. Surgery can be a considered option, but it is associated with increased clinical risk and increased costs for health systems and patients, often without providing increased clinical benefits. For many musculoskeletal conditions, too much medicine could be avoided for patients and healthcare systems if appropriate condition-specific education, lifestyle advice and evidence-based non-surgical management was prioritised.

Two Examples of Medicalising Normality relevant for Physical Therapy Practice

Musculoskeletal aches and pains are common, with up to 70% of people experiencing shoulder pain and 90% low back pain at some stage in their lives. One might argue that these two common musculoskeletal conditions could be considered unpleasant yet ‘normal’ occurrences. In this section we summarise two examples of the mis-labelling of normal and age-related variations in posture and structure as ‘pathological’ and / or the basis for presenting symptoms.

1. **Postural ‘abnormalities’**

   We acknowledge that ankylosing spondylitis and severe kyphosis and scoliosis may be associated with symptoms. However, for the majority of musculoskeletal presentations, most posture ‘abnormalities’ are likely to be variations of normal and do not differentiate between people with and without pain.\(^9\) Observing an individual’s static posture based on the plumb-line assessment of cervical, thoracic and shoulder posture and then advising that their symptoms are due to subtle variations in postural alignment is medicalising normality.

2. **‘Abnormalities’ detected by imaging**

   There has been an increase in identification and attribution of MRI and ultrasound detected ‘abnormalities’ as the explanation for presenting symptoms. However, this practice has medicalised normality on an unprecedented scale.\(^1,2\) Examples include; lumbar disc protrusions, disc bulges, facet joint degeneration and spondylolisthesis in people without low back pain, labral abnormalities and rotator cuff tendon pathology in baseball pitchers without shoulder pain, osteophytes, cartilage damage, bone marrow lesions and synovitis in people without knee pain and hip labral tears in young people without symptoms. These findings suggest that many changes that are labelled as ‘abnormalities’ are normal changes and may not be associated with pain or symptoms. Many interventions may be performed on people who have normal age-related changes, and most probably on tissues that are not the cause of the symptoms.
Drivers and causes

There are many drivers of too much medicine: Those related to clinicians’ and patients’ beliefs include that more healthcare (in the form of imaging and investigations, prescribing medicine, injections, multiple passive interventions and electrotherapy modalities, and surgery) is better than prioritising condition-specific and lifestyle advice, and that ‘doing something’ is better than ‘waiting and watching’, that the origin of pain can always be identified with clinical tests and imaging, and that once identified, pain can be ‘fixed’, and that symptoms are caused by ‘abnormalities’ in in static posture and structure, and that not addressing ‘abnormalities’ risks further tissue damage or exacerbation of the condition.

When more expensive interventions are recommended that offer equivalent or worse outcomes than lower cost alternatives, profit and renumeration is a driver for sectors of the healthcare industry, insurers and pharmaceutical companies and some clinicians. For sections of the media industry, drivers include sensationalism and revenue. Politicians may not wish to disenfranchise voters by appearing to reduce or withdraw healthcare alternatives considered fundamental by the electorate.

Suggestions for change

We contend that reducing the sequalae of too much medicine will require continuous effort from all stakeholders. All stakeholders need consider sustainability and acknowledge that healthcare resources are finite. In this section we outline suggestions for how patients, policy-makers, clinicians, educators, clinicians, the healthcare industry and media can drive change.

What can patients do?

- Be empowered to ask questions relating to the different management options for their condition, focussing on the anticipated benefits, timescales and harms
- Be empowered to ask what they can do to help manage their condition
- Be empowered to ask if wait and watch is an appropriate option
- When fully informed of the benefits, harms and costs of the management options contribute equally with other stakeholders to co-design the provision of healthcare at local and national levels
- Become a valuable resource to share their experiences and journeys through the healthcare system to promote improvements in delivery of care

What can policy makers do?

- Withdraw the financial incentive to offer unnecessary assessment and intervention procedures
- De-fund low value care (e.g. subacromial decompressions)
• Prioritise funding high value care (e.g. exercise programs for rotator cuff related shoulder pain\(^4\))

What can clinicians do?
• Ensure that patients are aware and understand all diagnosis and management options available to them, and the harms, benefits and expected outcomes of each
• Avoid emotive language and outdated explanations to explain symptoms and make recommendations for management
• Establish what matters most to the patient and discuss this as part of the decision-making
• Understand the natural course of the condition
• Know the investigations that should and should not be considered, and age-related norms for investigation findings
• Discuss the impact an intervention may have on the individual (e.g. the number of sessions a patient may need to attend for an exercise class and how much self-directed exercise they would need to complete, any limitations to activity following an injection or surgery, and for how long)

What can educators do?
• Ensure that curricula are contemporary, and reflect current evidence
• Teach critical appraisal skills so clinicians can incorporate new quality evidence into practice
• Teach shared decision-making skills

What can the healthcare industry do?
• Use common language and explanations to patients, based on an unbiased assessment of the research
• Promote interprofessional practice

What can the media do?
• Recognise the harm and the distress they may cause when healthcare issues are sensationalised or misreported

Box 1: Resources to better understand and help reduce too much medicine and medicalising normality

• Providing a card or leaflet with possible questions or discussion points for patients (https://www.nhs.uk/using-the-nhs/nhs-services/gps/what-to-ask-your-doctor/)
• Discussion on the value and importance of shared decision making in musculoskeletal practice\(^4\)
• Too much medicine (https://www.bmj.com/too-much-medicine)
• Better medicine (https://www.bmj.com/bettermedicinerccgp)
• Too much medicine (https://www.youtube.com/watch?v=FDffcID_BsA)
Summary
Too much medicine burdens health care systems and deprives societies of resources that could be used elsewhere. To overcome too much medicine, stakeholders (patients, clinicians, educators, healthcare funders, media, policy makers, industry, insurers, politicians, etc) must appropriately prioritise low-risk, cost-effective care over higher risk and more expensive care of equal clinical effectiveness. Professional bodies, government agencies, clinicians and patients must collaborate to discuss and synthesise the available evidence, share decisions and translate knowledge. We don’t underestimate the challenge of the task. Reducing the harm of medicalising normality and avoiding the temptation to provide too much medicine in current musculoskeletal practice depends on all of us.

Funding
No funding was received to support this editorial.

Acknowledgement
The authors wish to sincerely thank Dr Clare Ardern for her expert help and guidance in the preparation of this manuscript.
References

1. Barreto RPG, Braman JP, Ludewig PM, Ribeiro LP, Camargo PR. Bilateral magnetic resonance imaging findings in individuals with unilateral shoulder pain. *Journal of shoulder and elbow surgery / American Shoulder and Elbow Surgeons ... [et al.]*. 2019;10.1016/j.jse.2019.04.001


