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DIAGNOSTIC METHODS: Editorial

Non-prescription medication providers fight the opioid crisis with use of diagnostic testing

In the context of the opioid crisis that has become a modern plague, it seems that bodywork providers – also known as non-prescription medication providers - may well prove to be the hope for tomorrow's society.

Every day, over 115 people in the United States die from the overdosing on opioids (Chen et al., 2014). There is tremendous misuse of and addiction to opioids such as prescription pain relievers, synthetic opioids (such as fentanyl), and illegal opioids (such as heroin), and this has become a national crisis that affects public health as well as social and economic welfare (Schepis et al., 2019).

1. How did this happen?

In the late 1990s, prescription opioid pain relievers were released onto the market, with reassurance from pharmaceutical manufacturers to the medical community that patients would not become addicted. As a result, healthcare providers began to prescribe them at greater rates (Lembke, 2016). Soon thereafter, study after study found that the claim that opioids were not addictive was mistaken.

Roughly 21–29% of patients who are prescribed opioids for chronic pain, ultimately misuse them (Vowles et al., 2015). Between 8 and 12% of patients develop an opioid usage disorder (Ballantyne, 2015). 4–6% of these transition to using heroin; and 80% of heroin users first misused prescription opioids (Volkow, 2014).

Within a twenty year period (1980 to 2000) in the United States, opioid use doubled for chronic pain patients. The use of more potent opioids (hydrocodone, oxycodone, morphine) for chronic musculoskeletal pain increased from 2% to 9% of visits. This corresponds to 5.9 million visits where potent opioids were prescribed in 2000—an increase of 4.6 million visits since 1980 (Caudill-Schlosberg et al., 2004).

Therefore, it is evident that the medical profession has been unable to identify solutions to this problem. To the contrary, having become largely bound to the pharmaceutical industry, the medical profession appears to have created a menace to society through the over-prescription of opioid medications as an easy solution to patients' musculoskeletal problems.

2. What is the solution?

Aside from both clinician and patient education which can preempt the problem in the first place, the physical solution to this problem lies in the use of treatments and therapies that can help patients suffering from chronic musculoskeletal pain without the use of such opioids. This is where physical therapy, chiropractic, massage, and other bodywork therapies can play a very important role by providing treatments that are effective for patients' problems– especially those living with chronic pain.

3. The challenge

To treat a problem, one must first ascertain its root. Healthcare providers rely on a variety of physical tests to identify a patient's dysfunction. These tests are usually performed during their initial evaluation/examination, and may include both orthopedic or neurologic tests to identify a specific pathology. These physical examination tests have a certain degree of sensitivity and specificity, and to the degree that they are reliable, they can identify the specific pathology of that patient. However, many of these tests have very low degrees of sensitivity, allowing a large number of problems to be misdiagnosed or go undiagnosed while patients continue suffering from pain. Examples of these low sensitivity and specificity tests include some of the most widely used physical examination tests for the most common pathologies (Table 1).

If the use of low sensitivity physical examination tests as screening tests for pathology leads to the misidentification of root causes of patients' musculoskeletal complaints, then patients remain untreated or treated for the wrong condition. This leads to mediocre outcomes causing disappointment and dissatisfaction on the patient's side, and is often the catalyst for patients to recourse to resources such as opioid medications.

However, just as manual therapists and bodyworkers use physical examination tools to evaluate patients, medical doctors diagnose diseases and disorders based not only on physical examinations, but also using laboratory reports and diagnostic tests that can provide a more accurate indication of the source of the patient's problem.

A recent article (Lindstrom and Ashworth, 2018) delves into this discussion and reaches some staggering conclusions. The purpose of the study was to "evaluate the usefulness of electrodiagnostic (EDX) studies in terms of the patient's diagnosis and subsequent management, and to identify patient groups where EDX was particularly useful. In this extensive review, electrodiagnostic studies led to a change in diagnosis in more than half the patients and led to a change in management plan in more than 60%. In nearly half of cases (46.5%), the studies confirmed the suspected diagnosis.

4. Would the same apply with non-physician providers?

In a recent study performed in multiple centers by members of

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Table 1
Demonstrates comparisons of sensitivity among physical examination tests compared to Electroneuromyography testing and Musculoskeletal Ultrasound.

Diagnosis	Special Test	Sensitivity	EMG Sensitivity	MSKUS Sensitivity
Carpal Tunnel Syndrome	Median Tinnel Sign	23% (Kuhlman and Hennessey, 1997)	86% (Werner and Andary, 2011)	77.6% (Fowler et al., 2011)
Carpal Tunnel Syndrome	Phalen Sign	51% (Kuhlman and Hennessey, 1997)	86% (Werner and Andary, 2011)	77.6% (Fowler et al., 2011)
Cubital Tunnel Syn.	Ulnar Tinnel Sign	70% (Novak et al., 1994)	88% (Volpe et at 2009)	80% (Beekman et al., 2004)
Cubital Tunnel Syn.	Elbow Flexion	32% (Novak et al., 1994)	88% (Volpe et at 2009)	80% (Beekman et al., 2004)
Cubital Tunnel Syn.	Ulnar Press Provocation	55% (Novak et al., 1994)	88% (Volpe et at 2009)	80% (Beekman et al., 2004)
Cervical Radiculopathy	Spurling's Test	30% (Tong et al., 2002)	71% (AANEM, 1999)	N/A
Rotator Cuff Tear	Neer Test	79% (Hegedus et al., 2008)	N/A	92% (De Jesus et al., 2009)
Rotator Cuff Tear	Hawkins – Kennedy Test	79% (Hegedus et al., 2008)	N/A	92% (De Jesus et al., 2009)

Hands-On Diagnostics, similar results to the Lindstrom study were identified. Physical therapy management changed in 62% of patients post-Electromyography (EMG) and post-Musculoskeletal Ultrasound (MSKUS) testing in each group (Rawat et al., 2019 In Review). Twenty-six percent of patients in the MSKUS group were referred to the physician and received a non-surgical or surgical intervention. Sixteen percent of patients in the MSKUS group had a significant change in physical therapy management post-MSKUS test. In the EMG group, 28% of the patients were referred to a physician and received a surgical or non-surgical intervention. A further 16% of patients in the EMG group had a significant change in their physical therapy management post-EMG test. It is striking to realize that almost a third of the patients would have been treated for a condition other than the true source of their musculoskeletal problem, had they not received a diagnostic test.

At the same time 90% of patients who received EMG or ultrasound testing agreed or strongly agreed that diagnostic procedures led them to feel better able to understand and manage their problem.

This study demonstrated a significant impact on clinical decision-making in more accurately identifying the patient's problem, and dictates more appropriate patient management with the use of diagnostic testing in addition to physical examination by musculoskeletal health care providers.

5. Consider the possibilities

From a clinician's standpoint, it becomes apparent that to be more effective with our patients' treatments and make an even bigger difference in their lives, more effective and accurate diagnostic procedures are necessary from the outset. The more accurate the evaluation and diagnosis, the more precise and effective the treatments, resulting in better patient outcomes. If a variety of neuro-musculoskeletal testing options were more readily accessible to allied health providers, more accurate identification of the root cause of a variety of conditions and more effective treatment would be forthcoming. In this context, patients with chronic pain may be offered access to diagnostic testing by their allied health care providers who can now identify the root of the musculoskeletal problem and apply more effective treatments leading to better outcomes. When chronic pain patients find relief through effective non-pharmaceutical solutions, they will be less likely to recourse to opioids. This could in turn reduce opioid usage in society.

6. Diagnostic section of JBMT

This journal has dedicated an entire section to diagnostics and the evolving role they play in the field of Bodywork and Movement Therapies. Cutting-edge papers published in this section shed light on how proper use of diagnostics can affect treatment outcomes and help improve healthcare delivery. The work we have seen thus far in this area is just the beginning of what is yet to come.

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