

Short essay on pain, critical thinking, and more by Lars Avemarie and esteemed colleague

Some of these short essays have been posted on social media, some on my websites, and some as guest blogs.

Road and the destination - Making the patient choose the treatment

The main problem I have with (making the clients choose the treatment) is, what we do with our clients or patient should have plausible scientific reasoning, and hopefully also some evidence. I personally stand clear of modality with no plausible scientific reasoning and with evidence that speaks against the modality.

I think that you always should listen to our patients' preferences, feeling, wishes and their goals, but as I see it, this is only some of the factors. What we as health professionals think will most likely be the road to long term outcomes should be our main focus.

There are problems with focusing too much on patient satisfaction, and this can have a negative consequence, as listed below. As I see it our patients should choose the destination or the desired result, but we as professionals should choose the road that will lead to the destination, in the quickest, most efficient and effective way.

If we begin to let our patient choose our road to the desired result, our means of treatments or what interventions we should choose, and let them interfere too much with our clinical reasoning and rationale, this is a slippery slope in my opinion and not a sign of professionalism.

In my opinion, doing placebo treatments is also a slippery slope. In my opinion, our treatments should not be based upon a very inconsistent and variable effect. The placebo effect is not set in stone. It was Prof. Wall that stated something like that, "the placebo effect is not something administered to a patient, it is something to be elicited from a patient".

Sometimes patients choice of treatments aligned with our choice, this is a win-win situation, but often they do not know what they need as Adam Meakins said in a recent post. That is part of the reason they come to us, in the first place.

"Patients with the highest degree of satisfaction also had significantly greater mortality risk. These associations warrant cautious interpretation and further evaluation, but they suggest that we may not fully understand the factors associated with patient satisfaction. Without additional measures to ensure that care is evidence based and patient centered, an overemphasis on patient satisfaction could have unintended adverse effects" Fenton et al. 2012

"We recommend making a greater effort to focus our attention on biologically plausible methods that are congruent with our accurate patient-focused education processes. This would include any relevant clinical trial research while also considering the patient's expectations and the basic clinical science of their condition. To achieve this, we need to work harder to understand and communicate the basic science of our profession.

This focus should naturally cause us to consider prior plausibility more strongly when deciding which interventions and concepts to include in our therapeutic process. For instance, manual therapy appears to be effective, potentially due to neurophysiological mechanisms,⁴ and it appears that the speed of movement (thrust versus nonthrust) is not as important.¹⁴ Therefore, the choice of which manual therapy technique to use may be tailored to patient preferences. We feel strongly that our patients deserve scientifically defensible care that is more than just artfully delivered placebo." Ingram et al. 2013

On claims, subjective experiences and objective evidence

I see no problems with people sharing their subjective experiences. What I have a huge issue with, is when people make objective causal "truth" claims based only upon their own subjective experiences. If you are making an objective claim, you should be able to provide objective evidence to support your claim.

Exercise as a single solution to pain

Exercise should not be given as the single solution to pain, many physiotherapists are openly very critical of doctors that only give out pain medication to people with pain, as a unifactorial solution.

However, we have very much done the same with exercise, selling it to patients as a simple "pill", and solution to their complex musculoskeletal problems. We have as physiotherapist made exercise our own favorite unifactorial "medication" and "painkiller".

Let's stop making exercise our unifactorial solution to pain, and accept "pain as a multidimensional experience produced by multiple influences" as stated by Melzack et al. 2013

As stated by Dr. Gregory Lehman, in his excellent InTouch article about exercise with pain:

“Exercise can be a helpful component of a multidimensional and comprehensive rehabilitation strategy for people in pain. The long-term benefits of exercise for various conditions have been demonstrated in systematic reviews, but their effects should not be considered large. Many patients will not respond to exercise and some improvements may be small. Thus, like many interventions, exercise should be part of a multidimensional approach to pain.” Dr. Greg Lehman, MSc, DC

Ref.:

Melzack R, Katz J. *Pain. Wiley Interdiscip Rev Cogn Sci.* 2013 Jan;4(1):1-15. doi: 10.1002/wcs.1201. Epub 2012 Oct 4.

Anecdotes are not evidence

In my opinion anecdotes are not quality evidence. The primary weakness of anecdotes as evidence is that they are uncontrolled, technically they are non-systematic observations. There is a huge risk of subconscious data mining and they are subject to confirmation biases, memory effects, confounding variables and multiple of other cognitive biases.

Therefore we cannot make any reliable assumptions, or show causation from anecdotes. Layman often have a tendency to rely upon anecdotes/testimony. Marketers will often rely heavily on this type of evidence because, essentially, they can make it say what they want it to say.

Our brain has a lot of flaws, these including flaws in our memory, our perception, our thinking. So I'm starting to think that I'm/we are not so reliable.

Some of these flaws are confirmation bias, heuristic thinking, gambling fallacy, availability heuristic, escalation of commitment heuristic, effort heuristic, fundamental attribution error, the anchoring effect, the "toupée" fallacy, post hoc ergo propter hoc fallacy, attentional bias, congruence bias, bandwagon effect, wishful thinking bias, forer effect (Barnum effect), choice-supportive biases, negativity bias, observation selection bias, observer-expectancy effect, compartmentalization, inattention blindness, change blindness, memory confabulation, psychological constancy, source amnesia, memory pareidolia, subconscious data mining, base rate fallacy, cognitive dissonance/consistency and a high risk of confounding variables.

We can not show cause-effect relationship or causation from anecdotes, the reliability and validity is too low for this. So this is why anecdotes are not valid as quality evidence. Now, science is far from perfect, but it's a whole lot better than anecdotes.

Lack of strength ≠ pain

There is to my knowledge a lack of solid evidence that strengthening the back has a protective role in preventing or even treating the back, (however movement seems to help), or the notion that weak people have more pain, or being "weak" increases the risk of getting back pain.

To my knowledge there is not one single prospective study, that show that lack of strength causes pain, or solid evidence that it increases the risk of getting pain.

The notion of that the lack of strength causes pain or a "dysfunction", or tight muscles, or mobility restrictions causes pain, has no bearing in the pain research and goes against the multifactorial nature and complexity of the pain experience.

I agree with what my friend Ben Cormack says here: "Is the remedy to pain simply 'strengthen' if weakness and pain do not correlate?" Ben Cormack

And if pain was really caused or influenced by muscle weakness, should we not see that weak people have more pain and strong people less pain?

I never discourage people from getting strong, get more active or building muscle mass (especially old people), and I have been promoting these things the last 10+ years. It's the erroneous belief that strength is the "magical" solution to pain, that I find very problematic, and I have seen this belief in a lot of chronic pain patients. Making people believe in incorrect information, can have a huge impact on their life. So please do not do that.

On temporal priority and post hoc rationalizations

We must remember that temporal priority (or a chronological time relationship) is only one of the indicators of a possible causal relationship. Other indicators might be a spatial connection or a history of regularity. But temporal priority alone is insufficient to establish a causal relationship, because if it was enough then any event that preceded another event could be assumed to be causal relationship with it.

"Post hoc reasoning is probably the most common reasoning error in medicine." Dr. Jason Silvernail, DPT

Pain is not a "thing" in the body

The idea that pain can be anything other than a biopsychosocial experience is erroneous, even the idea that the 3 circles can be separated, other than conceptually, is also flawed.

This is something both Bronnie Lennox Thompson and Tasha Stanton have talked about. In a way this is the BPS model own fault, and the fact that people are not thinking critically about the untold assumptions and narratives that the BPS model makes, does not make it better. Another reason for this flawed thinking is people's innate tendencies to think and construct false dichotomy and dualistic thinking.

This continuous debate about that pain can be either biological or mechanical or psychological, just shows me that health professionals that truly understand pain science is very scarce. This, if further enforced by the fact that people have a often forceful disacknowledge towards, the notion that pain is never in a muscle or joint, or any body part, but it's a experience.

The conceptualization of pain as a "thing" in the body like a kidney or patella is both from a logical, scientific viewpoint erroneous, not to mention it goes against IASPs own definition of pain.

"Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage" IASP

Are we asking to much of health professionals?

We humans are psychological, biological, and social beings, the arrogance in thinking we can effectively treat people only using one part, while we ignore the two other parts astound me. No, I do not think we are asking to much of health professionals.

If we only look at getting treatment adherence, a strong case could be made to know a lot more about the psychology. We are not asking physiotherapists to be able to treat a severely distressed, or severely depressed patient, then they need to refere out. But we as physiotherapists need to learn and be able to treat a chronic pain patient, and both the psychological, biological, and social, not only the part that we like.

"People do not exist in isolation but rather are embedded within a socioenvironmental context." Turk et al. 2016

We need to be able to treat both the biological factors to pain but also the many psychological adaptations to pain, this is well within our scope of practice.

A lot of physiotherapists will take some CE course learning incredible complex theories and promote it to their patients in a heart beat. But if you ask them to look a little at the P in the BPS pain model, you get this response: "But we are not educated to look at psychology" is the often used answer.

Treating the whole person in pain is well within our scope of practice and to look at psychological adaptations to pain, like pain catastrophizing, fear avoidance and kinesiophobia. The notion that "this is not what I signed up for" seems childish at best, the idea that we can only offer subpar pain treatments because, this is something I did not expect I would be doing, seems to me to be a hugely egocentric philosophy.

There is also the paradox that a lot of physiotherapists promote the #GetPT1st but they don't want to look at the many psychological adaptations to pain, that is well within our scope of practice. Sorry you can't have it both ways.

Another huge paradox is that most physiotherapists do think that you should understand pain, but you can't "understand chronic pain" without looking at the many psychological factors and psychological adaptations to pain.

"People do not exist in isolation but rather are embedded within a socioenvironmental context. Features of this context will influence the exacerbation, effect, and maintenance of pain and associated disability.¹⁰⁵ Perhaps the largest body of research evaluating the role of contextual effects has focused on social support and responses to communication (overt expressions) of pain, distress, and suffering ("pain behaviors")" Turk et al. 2016

Claims and intellectually honesty

"A good skeptic thinks less about who is making a claim and more about what is being claimed." Guy P. Harrison

Most health professionals will recognize when there are being made extraordinary claims without any evidence to support it, and when the claims are only supported by personal experience (testimonials), these pseudoscientific claims are often laughed at.

But very often when the claim comes from an esteemed health professional, personal experience is taken as the truth, this is in my opinion not being intellectually honest and not acting as a true professional should.

This also seems to be the case when claims are being made about different types of training, diets or modalities like Kinesio tape, acupuncture, spinal manipulation, detoxe, low carb diets, blood type diets, paleo, special sole shoes, dry needling, reiki, prolotherapy, reflexology, craniosacral therapy, the ph-diet (alkaline diet), applied kinesiology, cupping therapy, aromatherapy, ultrasound just to name a few.

We should think critical about all unsupported claims, also from esteemed health professionals. A unsupported claim is still a unsupported claim, analyze the logic and evidence separately from the person making them.

Critical thinking and common sense

First, the argument used about "common sense" is a logical fallacy, if Argumentum ad populum and argumentum ad antiquitatem had a child the fallacy of Common Sense would be it.

Second, the idea of "common sense" is in my opinion also very flawed because what is common sense for one person, is not necessarily common sense for another person. A persons "common sense" is largely dependent of the persons knowledge, critical thinking skills and the persons environment and/or peers.

What laypeople view as "common sense" is in my opinion and experience, often very different from a skilled professional with extensive scientific knowledge (especially if the person is don't stay current with the scientific literature) seen as common sense.

"What appears to be common sense is often common nonsense." Dr. Scott Lilienfeld, PhD

In some ways, the scientific method is a great tool to avoid the errors that can result from trying to use our "common sense".

Ideas that appeal to peoples "common sense", can also be very seductive and tempting, because they seduce us into believing we have learned something new, or made a realization, or just confirmed a deep held belief, when in reality we stopped thinking when we reached our personal level or destination of "common sense".

When the argument or appeal to "common sense" is used in a debate, I always try to ask myself "why is the common?", and "how do I know this?". The argument of "common sense" is often used as crutches for our think, as a way to escape cognitive dissonance, and/or to escape engaging the persons arguments, it is in my opinion a way to put the focus on the person your are debating with, without engaging the arguments.

A lot of stuff we have learned in science, pain science, nutritional sciences the last 30-40 years was not at all "common sense" at that time. This is conceptualized by the quote by Dr. Peter Lemon.

"Just because it is logical does not mean it is physio-logical" Dr. Peter Lemon

You can't handle the truth! (said by Jack Nicholson in A Few Good Men)

You want solutions?... You can't handle solutions! Son, we live in a world with complex problems... and those complex problems have equally complex solutions, and therein is the first problem... You weep for a simple solution, but this can somewhat be seen as a symptom of your lack of realization, about the complexity of this topic.

Often people get tired of talking about problems, and are quick to want to hear about solutions, some even only want to talk about solutions, and yet others think you should only talk about the problems, if you can offer a solution to that problem.

These problems include problems with the status quo, and the "solutions" that are currently being used. Like how pain or obesity is being treated.

There are multiple problems with this line of thinking, the first problem is often we do not know what the "solution" is, and/or sometimes there are major uncertainties about the possible "solution".

The second problem, even if we do not know what the solution is. There is great value in knowing what is not the solution. Errors, are like bear traps in the forest, even if you do not know your way through the forest (your goal being getting out of the forest) there is great value in knowledge about the traps, the "errors" in the forest.

The third problem, is that knowing what not-to-do is part of finding a solution, as a metaphor, the American inventor Thomas Edison is said to have made 10,000 experiments, that showed exactly what is not the solution, how not to develop the first lamp, before he developed the first functioning carbon filament lamp.

Most people are also looking for a simple solution to a complex problem, they are looking for the magic "technique", as a quick solution to a complex problem. As Prof. O'Sullivan has written "This reductionist approach to dealing with complex disorders in a simplistic manner clearly hasn't delivered for our patients"

One major reason that it's much more easy to critical critique the "solutions" that are currently being used, and status quo. Is just the same reason that they are erroneous, because most of them are simplistic by nature. They are "magical" and overly simplistic solutions to multifactorial and complex problems.

The last problem is a problem of communication, in a world with complex problems, those complex problems often have equally complex solutions. Those complex problems are very hard to communicate through social media. Often people's own idea about a specific solution, serves as a road block, for them to accept a less wrong and more complex solution. Lastly I want to say that when there are a simple solution to a problem, then off-course information about that solution should be provided.

Further reading regarding multifactorial nature of both pain and obesity:

"The physiotherapy, manual therapy and medical professions have long focused on trying to find the magic 'technique', 'muscle', 'injection' or 'surgical technique' required to solve the problem of NSCLBP and PGP disorders. This reductionist approach to dealing with complex disorders in a simplistic manner clearly hasn't delivered for our patients⁵⁰ and contradicts current knowledge that NSCLBP should be considered within a multidimensional bio-psycho-social framework.

Ref.:

O'Sullivan P. *It's time for change with the management of non-specific chronic low back pain.* Br J Sports Med. 2012 Mar;46(4):224-7. Epub 2011 Aug 4.

The biggest error in pain management (you might be doing)

A major problem in pain management right now is that there is an epidemic of erroneous reasoning. This is a pandemic of "broscience", non-scientific thinking and dysrationalia. In debates, when people are faced with an argument and/or evidence that goes against their preconceived beliefs, the common answer is "but I know it works," or "I have seen it work".

"The first principle is that you must not fool yourself and you are the easiest person to fool." Richard P. Feynman

There are multiple fundamental problems with this line of thinking, and it presents one of the most substantial barriers to the progress and development in pain rehabilitation. Much of our future path lies in our ability to update our theories, narratives, philosophies, and world-view that we are governed by. To some extent, we are blindfolded by our outdated world-view that we currently use in pain management and also in physiotherapy.

Paradoxically we are often a substantial roadblock and barrier towards having a more modern (science-based) model of care and view of pain. We often resist updating our models of care which we use with people living with pain, so our care would be based upon current, more valid models. There are both multiple logical and scientific errors present when committing the "I have seen it works" argument. I will try to touch upon some of the largest ones briefly below:

When saying it "works" we are missing the fact that outcomes and effects of interventions are two separate things. As stated by Herbert et al. 2005 "Outcome measures measure outcomes, not effects of intervention". Clinical outcomes are influenced by many factors other than the given intervention, like regression to the mean, placebo effects, the natural course of the condition, and many more (Herbert et al. 2005).

Multiple factors like sleep or the mere passing of time could play a huge factor in the improved outcome. Ignoring the potential effect various factors have on the patient outcome is a large error. By missing out these factors that are influencing the patient, we are also missing the potential therapeutic benefit that knowledge of these factors could have on our treatment outcomes.

We must also not forget what Herbert et al. 2005 states: “a good outcome does not necessarily indicate that intervention was effective; the good outcome may have occurred even without intervention. And a poor outcome does not necessarily indicate that intervention was ineffective; the outcome may have been worse still without intervention.”

When the “I have seen it works” argument is made, it is also erroneous from a logical standpoint – it’s committing in the post hoc fallacy. The full name of this common thinking error is post hoc ergo propter hoc (from latin: “after this, therefore because of this”). An often used example of this error is this: Since the rooster crows immediately before sunrise; therefore the rooster causes the sun to rise. This is of course wrong. However, we are ourselves committing the post hoc fallacy if we conclude that our intervention “worked” because the patient got better after some time.

As stated by Dr. Jonathan Fass, DPT: “I wish that we could all learn to separate clinical outcomes from post hoc rationalizations of physiological mechanisms of action.”

We must remember that temporal priority (or chronological order) is only one of the indicators of a possible causal relationship. Other indicators might be a spatial connection or a history of regularity. But temporal priority alone is insufficient to establish a causal relationship, because if it was enough, then any event that preceded another event could be believed to be in a causal relationship with it; clearly, this is not the case (Damer 2009).

So the problem of the argument comes down to two distinct issues:

1. How do we know there was an effect? What measure was used, and is it a valid measure??
2. How can we assess clinically that it was the effect of the intervention? And not some other factor, like sleep, time, the natural course of the musculoskeletal diseases, or another unknown confounding factor that caused the effect?

When we are making objective causal “truth” claims, like: “I have seen it work”, we are trespassing in the realm of science and epistemology. When doing so, we should as a bare minimum have a basic understanding of the forest (of science and epistemology) we are so very abruptly trespassing in. When making causal claims, the following questions below could serve as a blueprint for reflecting upon the validity of the claims. It should also give an estimation of the truthfulness and plausibility of the claim, and make sure that you are in fact just not fooling yourself, as Prof. Feynman would say.

How do you know it “works” may I ask? How did you calculate the strength of this causal inference? How did you deal with the problem of regression to the mean? And survivorship bias? Or the difficulty of separating correlation from causation? Or other endogeneity problems? Or the problem of having no control group? Or the potential problem of sample selection bias? And various other potential biases? How did you control for multiple confounding variables? What measure did you use? And was, is it a valid measure? Did you only use PROMSs? (Patient Reported Outcome Measures).

I want to make it clear that I see no problems with people sharing their subjective experiences. What I have a huge issue with, is when people make objective causal “truth” claims based only upon their own subjective experiences. If you are making an objective claim, you should be able to provide objective evidence to support your claim.

So the underlying question remains: Can we subjectively assess what we experience and remember with some degree of objectivity?

Let’s take a straightforward task, with nowhere near a high level of complexity, which we see clinically in musculoskeletal pain rehabilitation. The task of writing down and tracking how much you eat, can we do such a simple task with some degree of objectivity?

Hill et al. looked at the validity of self-reported energy intake as determined using the doubly labeled water technique. Doubly labeled water is used as a method of measuring energy consumption. Hill et al. mentioned that people who were categorized as “large-eaters” overestimated their intake by 19%, and people categorized as “small-eaters” under-reported their intake by 46%. Schoeller et al. even advised against the use of self-report estimates of energy intake (in research), this due to their potential inaccuracies and biased reporting.

Can we then in clinical practice use our experience to detecting small and large effects of treatments?

Prof. Howick PhD answers this question in his book *The Philosophy of Evidence-based Medicine*: “To sum up, experience alone is usually an insufficient tool for detecting small and large effects.”. This is a lot like a statement made by Dr. Neil O’Connell PhD: “You can’t tell if a treatment works just from clinical observation and experience”

Some of the reasons why we can’t trust our own experience are summarized by Higgs & Jones in their book; *Clinical Reasoning in the Health Professions*:

“No matter how much we may think we have an accurate sense of our practice, we are stymied by the fact that we are using our own interpretive filters to become aware of our own interpretive filters! This is the pedagogic equivalent of a dog trying to catch its own tail, or of trying to see the back of your head while looking in the bathroom mirror. To some extent we are all prisoners trapped within the perceptual frameworks that determine how we view our experiences. A self-confirming cycle often develops whereby

our uncritically accepted assumptions shape clinical actions which then serve only to confirm the truth of those assumptions.”

One of the fundamental problems here, as stated by Lacy et al., is: “findings from basic psychological research and neuroscience studies indicate that memory is a reconstructive process that is susceptible to distortion.”

This means that to a large degree we can't trust what we remember. There are many flaws in our memory, intuitively we all know this, that is why we use calendars, to-do lists, and use a shopping list when we go shopping, and we don't want to forget anything. As noted by Prof. Lotus in a lecture, our memories are reconstructive, and our memory works a little bit like a Wikipedia page. So it can be edited after the event, memory is “reconstructive” in nature.

Can we even use our experience to assess and estimate patients' benefits and harms of interventions, or tests?

As is stated in the systematic review by Hoffman et al.: “Clinicians rarely had accurate expectations of benefits or harms, with inaccuracies in both directions. However, clinicians more often underestimated rather than overestimated harms and overestimated rather than underestimated benefits. Inaccurate perceptions about the benefits and harms of interventions are likely to result in suboptimal clinical management choices.”

So the answer is no, we can't.

To escape all these errors, and to make more informed choices, we need to look to experimental research and randomized controlled trial (RCT) to determine, with any degree of certainty, the effects of a given intervention (Herbert et al. 2005). Modern pain rehabilitation should be informed by both qualitative and quantitative research, and use the large goldmine of research that there currently is. Even if an RCT on a particular disease doesn't exist, with the specific population (like obese people, children, premenstrual women, etc.), there is still a goldmine of knowledge that can inform our clinical reasoning, and make our treatments better.

The primary purpose of using science in healthcare is to increase the quality of care, and to enable us to make more informed choices based upon current valid models. Furthermore, and more importantly, to make sure we are not repeating the errors of the past.

As Prof. Jules Rothstein, PT, PhD states “We need to make certain that, as we move to a better form of practice, we continue to put patients first. Nothing could be more humanistic than using evidence to find the best possible approaches to care. We can have science and accountability while retaining all the humanistic principles and behaviors that are our legacy.”

Recommended further reading:

Herbert et al. Outcome measures measure outcomes, not effects of intervention, *Clinical reasoning in the health professions* by Higgs and Jones, *The Philosophy of Evidence-Based Medicine* by Howick, In *Evidence We Trust* by Hale.

References:

- Damer, T. Edward. *Attacking faulty reasoning : a practical guide to fallacy-free arguments* (6th ed. ed.). Wadsworth, Cengage Learning. 2009
- Herbert R, Jamtvedt G, Mead J, Hagen KB. Outcome measures measure outcomes, not effects of intervention. *Aust J Physiother.* 2005;51(1):3-4.
- Higgs, J., & Jones, M. A. (2008). *Clinical reasoning in the health professions*, 3rd Edition. Oxford: Butterworth-Heinemann.
- Hill RJ, Davies PS. The validity of self-reported energy intake as determined using the doubly labelled water technique. *Br J Nutr.* 2001 Apr;85(4):415-30.
- Hoffmann T, Del Mar C. Clinicians' Expectations of the Benefits and Harms of Treatments, Screening, and Tests A Systematic Review. *JAMA Intern Med.* doi:10.1001/jamainternmed.2016.8254. Published online January 9, 2017.
- Howick J. *The Philosophy of Evidence-Based Medicine*. Wiley-Blackwell, BMJ Books (2011).
- Roger Kerry, *The Philosophy of Evidence-Based Medicine*. *Manual Therapy*, Volume 16, Issue 6, 2011, Page e7. Doi 10.1016/j.math.2011.07.007.
- Lacy JW, Stark CE. The neuroscience of memory: implications for the courtroom. *Nat Rev Neurosci.* 2013 Sep;14(9):649-58. doi: 10.1038/nrn3563. Epub 2013 Aug 14.
- Rothstein JM. Thirty-Second Mary McMillan Lecture: journeys beyond the horizon. *Phys Ther.* 2001 Nov;81(11):1817-29.
- Schoeller DA, Thomas D, Archer E, Heymsfield SB, Blair SN, Goran MI, Hill JO, Atkinson RL, Corkey BE, Foreyt J, Dhurandhar NV, Kral JG, Hall KD, Hansen BC, Heitmann BL, Ravussin E, Allison DB. Self-report-based estimates of energy intake offer an inadequate basis for scientific conclusions. *Am J Clin Nutr.* 2013 Jun;97(6):1413-5.

Why and when is “pain science” and pain research important?

If you are advising or providing care for a person who has pain or is living with chronic pain, you need to have a firm grasp of current pain research, an in-depth understanding of the complexity of pain and your patients' experience of it, and definitively know the many different factors which modulate pain. Combined, these can serve as a fundamental and robust starting point for a modern approach to the treatment of patients with pain.

If you are trying to help people who have pain, pain science and research should be an integral part of your clinical vocabulary. This is no different than if you are trying to help people with cardio-respiratory, psychological or neurological disorders; you should have a firm grasp of the current research about the optimal care of the particular disease that you are treating and the people you are taking responsibility for helping.

To rephrase it in a more direct way: if you are providing care for people with neurological diseases, you should have a firm grip of that discipline and relevant subfields. This same standard applies to providing care for people living with pain. So “pain science” is really about applying a scientific, research-based approach to understanding pain and

optimizing the rehabilitation and management of people with pain. If you are not scientifically informed about what pain is, how can you make updated and informed choices? How can you make sure you provide the optimal care for the people you have under your care?

If you are NOT providing care for people living with neurological diseases, scientific knowledge about neurological diseases is not a critical priority. Thus, if you are not trying to help and provide care for people living with pain, pain research becomes a lot less relevant.

As stated by Committee on Advancing Pain Research, Care, and Education (1) in 2011.

“Unfortunately, many health care providers lack a comprehensive perspective on pain and not infrequently interpret the suffering of others through their own personal lens. Misjudgment or failure to understand the nature and depths of pain can be associated with serious consequences — more pain and more suffering—for individuals and our society.” *Relieving Pain in America*, Institute of Medicine, 2011

Unfortunately, this lack of knowledge about pain and pain “science” and research is a global problem in health care (2):

“Problems with pain education identified by surveys of multiple health science courses in higher education institutions across the United States, Canada, and Europe include a lack of dedicated curriculum time, and that pedagogic approaches are not always thought to be effective in improving students’ pain knowledge and skills. Pedagogic approaches tend to be didactic and biomedically focussed, which may not be optimal for developing knowledge and skills relevant to a pain practitioner.”

If a member of my family gets seriously sick and goes to the doctor or the emergency room, I expect the care they provide to be evidence-based and informed by the most current scientific knowledge we have about the diseases and the human body. Why should our patients expect anything less of us as health professionals?

Another important point: you can’t effectively treat something if you do not know what it is. You also can’t treat pain optimally if you do not know what it is influenced and modulated by. Our clinical reasoning should be based upon the current scientific knowledge. We should not be making treatments choices that are based upon old and outdated knowledge; this is doing a disservice to the very people that are under our care.

As Prof. Jules Rothstein, PT, PhD states “Nothing could be more humanistic than using evidence to find the best possible approach to care” (3)

Thanks to Dr. Bronnie Lennox Thompson, university lecturer Lennart Bentsen, and Dr. Jarod Hall for inspiration to write this blog, and to Julie Tudor to correct my writing.

References:

1. Relieving Pain in America, Institute of Medicine, Committee on Advancing Pain Research, Care, and Education. National Academies Press, 2011
2. Thompson K, Johnson MI, Milligan J, Briggs M. Twenty-five years of pain education research-what have we learned? Findings from a comprehensive scoping review of research into pre-registration pain education for health professionals. *Pain*. 2018 Nov;159(11):2146-2158.
3. Rothstein JM. Thirty-Second Mary McMillan Lecture: journeys beyond the horizon. *Phys Ther*. 2001 Nov;81(11):1817-29.

Pain is a biopsychosocial experience

People do not exist in isolation, but rather we are biological, psychological and social creatures living within an environmental context (1). Multiple factors in this context will influence the worsening and maintenance of pain and disability.

Please take a moment to ponder about the following statements:

“All people experience pains as biopsychosocial experiences, no matter what the origin” Dr. Bronnie L. Thompson, PhD

“You cannot separate out the biology from the psychosocial, they’re all present all the time, they all matter, all the time. Not just for pain, for our very existence.” Joletta Belton

“It’s evident that all pain is a psychological experience and therefore will be influenced by our current goals, past experiences and predictions for the future. And these aspects of attention, motivation, memory and decision-making are present in all of us and for every sensory experience.” Dr. Bronnie L. Thompson, PhD

But this goes against the often used argument, that acute pain must be purely biological! This is the typical debates on social media. The discussions usually set up the biomedical model of pain vs. the biopsychosocial model of pain dichotomy or debates that acute pain is only biological.

This is only a testament of the outdated thinking that still lingers in the background, showing it’s ugly face, again and again, at this point, it is getting tiresome.

Firstly all this shows, that (almost) nobody has read the findings of the last 30 years of pain research, assuming they would acknowledge the data if they read it. Secondly, it shows a real lack of understanding of the two models (BPS/PSB) and the differences between them. Thirdly, when people often debate against scientific research and the current consensus, with nothing but personal anecdotes, it shows a considerable lack of knowledge in the scientific method and the hierarchy of validity.

To give anecdotes a higher validity than a scientific study only shows an ignorance to the fact that this type of “evidence” can potentially be hugely flawed. The enormous problem

with setting up these two models against another is that the biomedical/biomechanical model of pain" (PSB) focuses on only biological factors, and it excludes psychological, environmental and social factors. But the BPS model does not exclude biomedical/biomechanical factors, because the B in the BPS is "biological" factors, thereby including biomechanical factors, as a factor in pain modulation. The only thing we have to show as proof that the PSB model is hugely outdated, in explaining PSB factors as a single causal factor of pain, is that pain is also influenced by psychological, environmental and social factoring.

There is no longer any doubt; the current consensus shows that pain is modulated and influenced by multiple factors including psychological, environmental and social factors (2, 3, 4, 5, 6, 7, 8). This also gets further supported, by the fact that there is a lot of research, that shows that people can have a multitude of biomechanical "errors/flaws" in the body and their tissue, without any pain.

Furthermore, it is extremely difficult to prove that pure biological/biomechanical factors are a single factor that CAUSES pain, because we can not remove the modulation of pain, that occurs in the body/brain/subject. This makes excellent sense when we see the variation which is in, the experience of pain. Now, the BPS model of pain is not perfect, any model our minds can conceive of is potentially flawed and bias towards what we currently know. But it is the best explanatory model of pain, that we have thought of, with our current and potentially flawed knowledge base.

One thing that the BPS model of pain does that is erroneous, is that it creates three boxes (biological, psychological and social), but this is a delusion, there are no boxes, but the lived experience of being in pain. As a teaching tool, models are useful, but we must not forget that they are teaching tools, in reality, there is not boxes, only an experience.

References:

1. Turk DC, Fillingim RB, Ohrbach R, Patel KV. Assessment of Psychosocial and Functional Impact of Chronic Pain. *J Pain*. 2016 Sep; 17(9 Suppl):T21-49.
2. Melzack R., Katz J. (2013), Pain. *WIREs Cogn Sci*, 4: 1–15.
3. Williams AC, Craig KD. Updating the definition of pain. *Pain*. 2016 Nov;157(11):2420-2423.
4. Tracy L. Psychosocial factors and their influence on the experience of pain. *Pain Rep*. 2017 Jul; 2(4): e602. Published online 2017 Jul 11.
5. Gatchel RJ, Okifuji A. Evidence-based scientific data documenting the treatment and cost-effectiveness of comprehensive pain programs for chronic nonmalignant pain. *J Pain*. 2006 Nov;7(11):779-93.
6. Pergolizzi J, Ahlbeck K, Aldington D, Alon E, Coluzzi F, Dahan A, Huygen F, Kocot-Kępska M, Mangas AC, Mavrocordatos P, Morlion B, Müller-Schwefe G, Nicolaou A, Pérez Hernández C, Sichère P, Schäfer M, Varrassi G. The development of chronic pain: physiological CHANGE necessitates a multidisciplinary approach to treatment. *Curr Med Res Opin*. 2013 Sep;29(9):1127-35. Epub 2013 Jul 3.
7. Chester R, Jerosch-Herold C, Lewis J, Shepstone L. Psychological factors are associated with the outcome of physiotherapy for people with shoulder pain: a multicentre longitudinal cohort study. *Br J Sports Med*. 2016 Jul 21. [Epub ahead of print].
8. Eccleston C. Role of psychology in pain management. *Br J Anaesth*. 2001 Jul;87(1):144-52.

Pain treatments and a single cause of pain

When patients want to know the reason and why they have pain, they are often told simple biomechanical and/or structural causes (Darlow et al. 2013, Setchell et al. 2017), such as lumbar lordosis, pelvic tilt, foot arch, leg length difference and so-called degenerative changes, just to name a few. As the reason why they have pain.

This seems like an ill-informed practice, because we have research stating that these structural factors (as a single factor) with high probability do not cause pain (Nourbakhsh et al. 2002, Brinjikji et al. 2014, Jarvik et al. 2005, Lederman 2011). The current clinical guidelines from American Physical Therapy Association go a step further and advice against providing pathoanatomical explanations for the specific cause of the patient's low back pain (Delitto et al. 2012, Darlow et al. 2013)

A strong and informed argument could be made that we do not want to use patient counseling strategies that increase the perceived threat or fear of any patient, not only with patients who have low back pain.

By reducing the cause of pain to a single event or factor, we make our patients a disfavor, and we are providing them a disadvantage in their road to recovery. When we reduce the cause of pain to one single event, we are in my opinion doing a huge disservice to our patients, and we are ourselves committing the fallacy of the single cause, also known as causal oversimplification (Damer 2009). We are effectively putting our head in the sand to what we have learned from the last 30 years of pain research and science – That pain is a complex personal experience.

“We tend to endorse the complexity of the brain and its fundamental role in what we experience. Unless, of course, we are talking about pain.” Moseley 2012

Research has shown us that there are many factors that influence pain, and that pain is a multi-factorial experience (Melzack et al. 2013). Implying that there is only one single cause, we fail to acknowledge the complexity of the brain and its fundamental role in what we experience. Pain is never straightforward, even when it appears to be.

“Pain can no longer be regarded as merely a physical sensation of noxious stimulus and disease, but conscious experience of pain may be modulated by mental, emotional, and sensory mechanisms and includes both sensory and emotional components” Waddell 1987

“Pain is not simply the end product of a linear sensory transmission system; it is a dynamic process that involves continuous interactions among complex ascending and descending systems. The neuromatrix theory guides us away from the Cartesian concept of pain as a sensation produced by injury, inflammation, or other tissue pathology and toward the concept of pain as a multidimensional experience produced by multiple influences” Melzack et al. 2013

“Pain is a distressing experience associated with actual or potential tissue damage with sensory, emotional, cognitive, and social components.” Williams et al. 2016

“Pain is a mutually recognizable somatic experience that reflects a person’s apprehension of threat to their bodily or existential integrity.” Cohen et al. 2018

The real losers in this event are our clients. Because when we are choosing to only focus on (or search for) one single cause of our clients pain, we are simultaneously choosing to be blind, to all of the multiple other possible contributors of our client’s pain. Thereby drastically reducing, the possible solutions to our clients pain.

References:

Brinjikji W, Luetmer PH2, Comstock B, Bresnahan BW, Chen LE, Deyo RA, Halabi S, Turner JA, Avins AL, James K, Wald JT, Kallmes DF, Jarvik JG. Systematic Literature Review of Imaging Features of Spinal Degeneration in Asymptomatic Populations. *AJNR Am J Neuroradiol*. 2014 Nov 27.

Cohen M, Quintner J, van Rysewyk S. Reconsidering the International Association for the Study of Pain definition of pain. *Pain Rep*. 2018 Mar 5;3(2):e634. eCollection 2018 Mar.

Damer, T. Edward. *Attacking faulty reasoning : a practical guide to fallacy-free arguments*. Wadsworth, 6 edition (2009).

Darlow B, Dowell A, Baxter GD, Mathieson F, Perry M, Dean S. The enduring impact of what clinicians say to people with low back pain. *Ann Fam Med*. 2013 Nov-Dec;11(6):527-34.

Delitto A, George SZ, Van Dillen LR, Whitman JM, Sowa G, Shekelle P, Denninger TR, Godges JJ. Low back pain. *J Orthop Sports Phys Ther*. 2012 Apr;42(4):A1-57. Epub 2012 Mar 30.

G Lorimer Moseley. Teaching people about pain: why do we keep beating around the bush? *Pain Manage*. (2012) 2(1), 1–3.

Jarvik JG, Hollingworth W, Heagerty PJ, Haynor DR, Boyko EJ, Deyo RA. Three-year incidence of low back pain in an initially asymptomatic cohort: clinical and imaging risk factors. *Spine (Phila Pa 1976)*. 2005 Jul 1;30(13):1541-8; discussion 1549.

Lederman E. The fall of the postural-structural-biomechanical model in manual and physical therapies: exemplified by lower back pain. *J Bodyw Mov Ther*. 2011 Apr;15(2):131-8.

Melzack R., Katz J. (2013), Pain. *WIREs Cogn Sci*, 4: 1–15.

Nourbakhsh MR, Arab AM. Relationship between mechanical factors and incidence of low back pain. *J Orthop Sports Phys Ther*. 2002 Sep;32(9):447-60.

Waddell G. 1987 Volvo award in clinical sciences. A new clinical model for the treatment of low-back pain. *Spine (Phila Pa 1976)*. 1987 Sep;12(7):632-44.

Williams AC, Craig KD. Updating the definition of pain. *Pain*. 2016 Nov;157(11):2420-2423.

Setchell J, Costa N, Ferreira M, Makovey J, Nielsen M, Hodges PW. Individuals’ explanations for their persistent or recurrent low back pain: a cross-sectional survey. *BMC Musculoskelet Disord*. 2017 Nov 17;18(1):466.

There is nothing called a pain “nerve”, pain fibre, or pain signal

There are however noxious stimulus, nociceptors, nociception, and nociceptive neurons. Nociceptors are specialized peripheral sensory neurons that alert us to potentially damaging stimuli by detecting extremes in temperature, pressure or injury-related chemicals. Nociception, however, a potent modulator of pain, but not the only one.

It is vital that we as clinicians and professionals do not fall in the trap of doing this “unfortunate trivialization” as Dr. Wall called it. We must use “one set of words for a stimulus event and another for a perceived sensory event” (1). Nociception does not equal pain.

“The labeling of nociceptors as pain fibers was not an admirable simplification but an unfortunate trivialization. The writers of textbooks will continue to purvey trivialization under the guise of simplification. The experimental results show that the final analysis that produces the perception of pain is not monopolized by the peripheral receptor properties of nociceptors. The response of nociceptors is one of the factors incorporated into the central analytic mechanisms that can generate many perceptual syndromes including pain.” Wall et al. 1986

Or as Prof. Wall states more plainly in his book “Pain The Science of Suffering”:

“Tissue damage and pain are not so intimately linked that the two can be considered equivalent. We must therefore be very cautious and use one set of words for a stimulus event and another for a perceived sensory event.”

A quick test I use to assess if a colleague, doctor, fellow health care provider, researcher or teacher has an informed and updated view and opinion about pain, is if they use erroneous taxonomies and words, like pain “nerve”, pain fiber, or pain signal. If they do that, with a high likelihood, they have dogmatic and outdated views about pain.

We must as professionals be aware that our client’s expectations (2) can influence their pain. So there is a real risk if we use this erroneous language that it can negatively affect and increase the pain of our clients. The same pain that we are trying to liberate them from, and that they come to us as professionals to be liberated from.

The current guidelines (3) go even a step further and say that clinicians should not utilize pathoanatomical explanations for the specific cause of the patient’s pain (low back), or any strategies that (directly or indirectly) increase the perceived threat or fear associated with the patient’s pain.

References:

1. Wall P, McMahon S. The relationship of perceived pain to afferent nerve impulses. *Trends Neurosci.* 9(6), 254–255 (1986).
2. Cormier S, Lavigne GL, Choinière M, Rainville P. Expectations predict chronic pain treatment outcomes. *Pain.* 2016 Feb;157(2): 329-38.

Pain science is not a modality!

As I have pointed out numerous times, pain science is just science about pain; there is no secret “pain science group”, camp or crowd, it’s just people who take a scientific look at the pain experience. It’s health professionals that use the current scientific knowledge about pain to inform and better their treatment and management of people living with pain. It’s health professionals that wish to use a comprehensive scientific perspective on pain as the foundation in their clinical reasoning.

I am also beginning to dislike the term, not because its wrong (it’s not), but because of the misuse of the term, and what it implies for people, its become a bastardized term, and in some ways a label for people with old dogmatic views to have something to attack. I believe it has become a victim of its own success; health professionals tend to remain tied to dogmatic ways of viewing the world and have therefore erroneously made “pain science” into something you do to a patient, into a treatment modality, something it never was. So pain science has been modified to fit within the old treatment paradigm, that is more often than not non-scientific, and often outright pseudoscientific.

I have talked about this danger (1-2 years ago), that there is in pain science as it increases its popularity. There is a great danger that we use the same uncritical, unscientific thinking patterns and lazy thinking that have characterized physiotherapy and pain management over the past couple of decades, just with this “new” pain science on-top.

People are doing showmanship client presentation, and promoting “pain science”, all within a “fixer” mindset (also called Healer Syndrome), and are still using the outdated ‘operator’ treatment model. The implication of this operator mindset is that the patient is view as a passive recipient in the therapeutic encounter, and the therapists do not view themselves as an “interactor”, who is interacting with another human being.

This lazy thinking can have a catastrophic effect, because this uncritical and unscientific handling with this new pain paradigm, can directly damage the wealth of scientific knowledge, and the goldmine of knowledge that modern pain science is, all this because people who misuse this new knowledge, try to bring pain science down to their level. We must be better at selling the updated version of pain management, and replace the old pain management with a new more scientific-based way.

Pain science is just science about pain, nothing more nothing less.

What if?

What if we cast away our modality driven “toolbox” mindset, and take a more “tool-less” approach to healthcare?

What if we change our focus and efforts towards providing patient education, using shared decision making, therapeutic alliance, patient empowerment, reassurance, patient-centered communication, patient-centered practice, and upon increasing self efficacy, activity and use therapeutic (patient-centered) exercises within a biopsychosocial model of health and illness?

Sometimes I feel like I'm speaking Russian.... And the response is not what I hoped for when asking this question. We are often ourselves the most substantial barrier to the progress and development of modern high-quality care.

Mulling over posture and pain

Posture is a social and cultural construct, more than anything else. Posture is influenced by multiple factors like age, state of mind, cognitive load and there is a large degree of inter-individual variability.

The fixed belief that “poor” posture leads to pain is mostly based upon personal opinion, in that people theorize before they have any solid data, and they become subjectively and emotionally attached to the idea of “perfect” posture.

Missing out that there is no such thing as “perfect” or “poor” posture when speaking about human beings, posture are like human movement as it is more as fingerprints. Posture and movement are highly individual and to some degree random.

The belief about “poor” posture causes pain as a single factor, is not based on solid science. It's mostly our education tradition and culture that maintains this assumption about some "perfect" posture, an imaginary sort of "ideal" posture. This notion of one single "perfect" posture; is more based upon a cultural construct, and biomedical and biomechanical beliefs, not the repeated assessment of the validity of these assumptions and beliefs.

It's only a testament to how indoctrinated people are into the biomedical model that their idea of pain is based upon finding some imaginary and made up metric (norm) that has no validity. They then try to “fix” the patient, into fitting this imaginary metric.

So posture is specific to what you do, if you are running it's very upright but if you want to maximize cognitive abilities, it's often slumped, and if you are resting and saving energy

it's in a resting "Energy saving" mode.

Unpopular opinions in pain management and physiotherapy

I hold many science-based opinions, but most of them are unpopular because they go against the old dogmatic views that are within the pain management and physiotherapy profession.

As noted by [Barradell 2017](#) physiotherapy (like other industries) has a tendency to be tied to specific ways of seeing the world and these are passed down from old generations of physiotherapists to new physiotherapy graduates. This dogmatic way of training and teaching is one of the major reasons that is holding the physiotherapy profession back from taking a more modern and science-based view of pain management.

It is like we look at the horizon through binoculars, only focusing on a small part of it, making us blind to all the other things we could discover. We are putting our head in the sand to the last 30 years of research, for example, research that has shown us that there are many factors influencing pain and that pain is a multi-factorial experience.

The real losers in this sad situation are our clients. Because when we choose to only focus on one single point on the horizon we are choosing to be blind to all of the other possible solutions for our patient's problem.

Here are my 20 unpopular opinions:

No 1 – Pain is modulated by emotional, mental, and sensory mechanisms, and our treatments should reflect this.

No 2 – Most health professionals lack a comprehensive scientific perspective on pain, and are often scientific illiterate.

No 3 – Often it is our education tradition and historical continuity that maintains most assumptions about what we do and learn, it is not the repeated assessment of the validity of these assumptions (adapted from Edward DeBono)

No 4 – The 'toolbox' approach to pain management does not provide optimal treatment and typically its results rely on non-plausible and non-scientific therapeutic modalities.

No 5 – A barrier to a more scientific approach to pain management is the old dogmatic way of viewing the body that is still being taught to health professionals, these ways are passed down to new generations from the past generations.

No 6 – Pain is multidimensional experience produced by multiple influences, and our treatments should reflect this.

No 7 – Pain management is suboptimal when done with a purely biomedical ideology.

No 8 – Pain (both acute or chronic) is always a biopsychosocial experience and will, therefore, be influenced by patient's goals, beliefs, experiences and predictions, our treatments should reflect this (thanks, Dr Bronnie Lennox Thompson for that one).

No 9 – Pain felt in the body is not a "thing" but many therapeutic modalities have conceptualised pain as something in the body like a kidney or a patella. Pain is not a somatic entity. This erroneous belief leads therapist to try and attack this "thing" called pain forgetting that it is an experience. This is like going to Norway and viewing aurora borealis (an experience) to staying at home trying to find aurora in your own knee. (Thanks to Dr John Quintner for that one).

No 10 – Health professionals talk a lot about the quality of care and making healthcare better for the future. However, you don't increase quality by saying "yes" all the time and being overly positive towards every type of treatment, part of getting higher quality care is by saying NO to low-quality treatments.

No 11 – It is often assumed that an error in a movement will cause an injury, tissue damage and/or pain. But most health professionals forget the specificity principle, and that an adaptation could also be a result of this.

No 12 – A problem in pain management right now, is that there is an epidemic of bad reasoning. This is a pandemic of "broscience" and non-scientific thinking and dysrationalia. In debates, when people are faced with an argument and/or evidence that goes against their belief, the common answer is "but I know it works", or "I have seen it work".

No 13 – Structure and biomechanics are not destiny, most findings on imaging are also common in asymptomatic individuals.

No 14 – Finding "errors" in people like bad posture, tilted pelvises, weak cores, sacroiliac joints "out", "tight" muscles, imbalances, faulty movement patterns or any other bio-"mechanical" problems are not single causal factors for pain, and are also common in people without pain.

No 15 – Human movement and the human body exhibit unique individual characteristics much like fingerprints. Finding "errors" in gait, running, and movement is problematic due to the high variability. This puts a big hole in the theory about assessment, it is very difficult to know what is a "dysfunction" (hate that word) or a normal variation.

No 16 – Personal anecdotes and "clinical experience" are unreliable and therefore we cannot make any reliable and sound assumptions based upon them.

No 17 – I've seen it "work" is not an argument a health professional that provides care for another human being should make, we have to do better, "With great power comes great responsibility."

No 18 – The placebo effect does not justify "magical" pseudo-scientific non-plausible treatments with only dubious evidence.

No 19 – Most advice on ergonomic sitting (and to some degree lifting) is based on old data, and makes the faulty assumption that "stress" leads to injury or pain. This assumption goes against the S.A.I.D principle. People will adapt to increased load like a deadlift, but then to say this does not apply to sitting with their head a little bit forward is just not logical.

No 20 – Psychological factors like depression, fear-avoidance or pain-related fear are often more important to the influence and development of chronic pain than most biomechanical or biomedical factors.

Thanks to Brian Rutledge for the idea of this post.

The toolbox approach vs a consistent reasoning process (by Dr. Jason Silvernail)

"I have never liked the toolbox approach to any process - and this includes physical therapy. A toolbox is full of products without an underlying process - and that does not lead to a defensible and consistent approach that handles complexity well."

"To me, a toolbox or 'eclectic' concept is a disorganized approach centered around applying different tools or products without a consistent reasoning process or thinking model behind them."

"Having tools in your box doesn't tell you when and how to use them and toward what goal. Toolbox approaches are about the practitioner not the client or patient. For these toolbox clinicians, they tend to use their favorite tools first then fall back on a somewhat random series of other tools if they don't get the response they need. Tools themselves won't get you anywhere, what matters is the reasoning process that underpins it all. I'm not against using different modalities or approaches, I'm against using them without a consistent reasoning process."

"I encourage people to dump their toolbox out and focus on learning processes of care and training that allow you to work toward different goals, that you can use with a variety of patient/clients, which allows you to integrate new information, and be consistent with published evidence. I have seen very, very few people with multiple modalities of care who could provide them with a defensible reasoning process - especially since so many tools are inconsistent with each other. For example, if STSI (scraping the skin with instruments) was a sensible approach, why would needling make any sense?"

"When I hear someone say something like 'wow this is a great thing to add to my toolbox!' I just cringe. Maybe now you will too." Dr. Jason Silvernail, DPT

Who We Are Versus What We Do (by Prof. Rothstein)

"Whether through neglect, incompetence, or perhaps even a conspiracy worthy of an Oliver Stone movie, our profession has been done irreparable harm by those who don't understand who physical therapists are and what physical therapists do.

The problem arises out of our failure to differentiate our profession from our interventions, a problem that is compounded by those who, by accident or by intent, prefer to advance themselves or their own groups rather than the profession as a whole. We are physical therapists, but there are those among us who would prefer to be called, for example, manual therapists, certified NDT therapists, certified McKenzie therapists, chest therapists..."

"In describing their interventions, the authors were as clear and informative as a Mafia don testifying before the US Congress. They said that they used an eclectic approach based on the work of Cyriax, Kaltenborn, Maitland, and Mennel. As a physical therapist, I have no idea what was done in this study. "

"As an editor, I believe that sloppiness in the literature is growing. Only the most perceptive and diligent of readers, health care policymakers, and payers will note what might as well be considered the fine print of many articles—that is, the information that deals with the nature of a treatment, as opposed to the name of a profession."

"You may have been trained as a manual therapist—or as an NDT therapist or a McKenzie practitioner—but first and foremost, like other health care practitioners, you are a member of a profession. Just as there are surgeons who specialize in certain techniques, there are physical therapists who specialize in certain techniques; in either case, we are talking about the repertoire that people can offer their patients—not the creation of an entirely different professional."

Ref.:

Rothstein J. Who We Are Versus What We Do. Physical Therapy, Volume 82, Issue 7, 1 July 2002, Pages 646–647, Published: 01 July 2002