

GUEST EDITORIAL

When researchers stumble, clinicians fall and patients suffer

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It is not knowledge that we lack. What is missing is the courage to understand what we know and draw conclusions. (Sven Lindqvist).

If you want to create a habit, repeat your actions. If you want to create a beneficial habit then revise and reflect on your actions and their implications before you repeat. Looking at the state of the art-practice of chronic pain medicine one observes a repetitive action, an unsatisfying patient outcome and an occasional reflective practice that does not translate into altered clinical practice. I am not insinuating that everything the practitioners do is flat out wrong, only that they are close to clueless regarding what they actually do, when they should do what and to whom they should do it.

So let us take a step back and evaluate what research - as of 2016 - has told us about both medical science in general and especially pain medicine (i.e., longstanding pain conditions). Chalmers, Glasziou and Ioannidis have all shown us that most published research is both unreliable and clinically irrelevant [1,2]. That is a serious enough problem in itself, but the truth is even worse. Hardly any published clinical findings are replicated [3] and thus confirmation of truly significant findings are usually non-existent. So far we know that most of our clinical knowledge is wrong and unconfirmed. In addition, we know that most clinicians fail to interpret research findings correctly [4]. Consequently, most clinicians will constantly face the possibility of violating the Hippocratic oath. Some salvation is provided by the immensely important work of researchers and clinicians that remind us of the importance of rigorous methods for synthesizing medical knowledge and providing them as (freely) available guidelines and recommendations [5]. Other scientific beneficiaries are researchers that use high end randomized controlled trials to test what format of presenting summarized guideline information is most helpful for clinicians, when transforming information to

knowledge for use in shared decision-making, a key component of person-centered healthcare [6].

Turning to longstanding pain conditions we know that chronic primary pain (e.g., low back pain, neck pain, fibromyalgia) is most likely the most expensive and disabling condition worldwide. To the medical community this fraught condition is without any documented effective treatment. In fact, to date there does not exist a single intervention in the field of chronic pain medicine, replicated by an independent research group, that has effect sizes that are both statistically significant and which demonstrate clinically relevant improvements relative to placebo interventions [7,8]. Even looking at insufficiently scientific conductions and presentations of various research results, one is lucky to identify results matching the powerful placebo effect [9]. To many clinicians, the bare fact that none of their procedures is convincingly better than placebo should make them question what they do and it should serve as a substantial driving force to improvement of clinical practice. But, unfortunately, we are all too often too lazy and comfortable in our own habits to make the effort to change. Include in all this the fact that we all have experienced ('several') patients' improvements from our treatment approaches and they are hopefully not all due to natural courses and regression to the mean, it is evident that our models are wrong. Otherwise, we would have had better treatment outcomes.

The great scientist Richard Feynman has eloquently described our clinical situation as of today:

In general we look for a new law by the following process. First we guess it. Then we compute the consequences of the guess to see what would be implied if this law that we guessed is right. Then we compare the result of the computation to nature, with experiment or experience, compare it directly with observation, to see if it works. If it disagrees with experiment it is wrong. In that simple statement is the key to science. It does not make any difference how beautiful your guess is. It does not make any difference how smart you are, who made the guess, or

what his name is - if it disagrees with experiment it is wrong. That is all there is to it.

So, in essence, we have for the last decades tested a few hypotheses and carefully and repeatedly shown that they fail. Let us move on, appreciate the complexity and non-linearity of most of nature and focus our joint efforts on proposing and testing new hypotheses; if not for the sake of our own curiosity, at least for the sake of the individual patient. Indeed, it is about time to abandon the wrecked ship and change the course of treatment and research. Let us compile our true knowledge in clinical pain medicine, psychology, neuroscience and formal logic and use that as a common platform and guiding light in our quest for knowledge and clinical efficacy. But we must remember that since pain is a complex condition and experience is not a reliable indicator of judgment accuracy [10], we are heavily influenced by our cognitive biases when making clinical calls and scientific inferences.

All this leaves us with a conundrum of unfathomable implications on both an individual and societal level. If what we do is nothing better than placebo and usually worse, then it is surely ethically questionable to proceed with what we do. If this is accepted, then certain fields in medicine and selected procedures and also the relevance of entire educations and professions are all called into immediate question. Do we have the courage to consider such matters?

Conflicts of Interest

I have no conflicts of interest to declare.

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