

Of fashions, fads and evidenced-based medicine

Fashions, fads and memes come and go. Some, like PacMan or lava-lamps, nostalgically bring a smile to the lips; while others, like neon leg warmers and pet rocks, have slunk off into obscurity without even so much as a backward glance. We, in the medical community, are not immune to the phenomenon of the fad. From “Tar Water” and “Metallic Tractors” to control pain (Hutchison BMJ 1925) to early goal directed therapy (Rivers et al. NEJM 2001) and intensive insulin therapy in critically ill patients (van den Berghe et al. NEJM 2001), the latest and greatest sweep through our communities at regular intervals.

The latest meme to burrow into our collective consciousness is the phrase: “I don’t believe in evidence-based medicine”. Particularly prevalent in anaesthesia circles, this pearl of wisdom is oft dropped delivered mid-presentation, or in the early stages of the discussion, with a slight supercilious curl of the lip - coupled with a dismissive shake of the head.

But what do people mean when they say: “I don’t believe in evidence-based medicine”. To believe in something, is at its most basic, the decision to trust in or rely on something. This statement is an affirmation that the speaker does not trust in, or rely on, evidence-based medicine. So far so clear.

But what specifically does he protest against? Both the terms “evidence” and “medicine” seem to be in the firing line. But surely our protagonist cannot be expressing a lack of belief in “medicine” as a rational and worthy pursuit – how else then will he make a living?

What then of the “evidence” component of medicine? Has this concept raised the ire of our colleague? Does she hold a deep existential distrust of evidence in general? Does she believe that we make our own reality and that nothing can truly be known? Evidence is information presented in support of a claim or a hypothesis, and our colleague is making a claim – offering a hypothesis. And if she is to be taken seriously we need to charitably believe that there is evidence supporting her statement. And so the self-defeating nature of this assertion becomes painfully clear as our speaker presents evidence in support of her statement that evidence-based medicine is not worthy of trust. And so we conclude that: “I don’t believe in evidence-based medicine” is not a call to radical postmodernist medicine and that “evidence” is not the root of the problem.

What then does this leave us with? We have examined all the parts of the statement and do not find them to be objectionable. What in the world do the purveyors of this ideology propose to affirm when they say they don’t believe in evidence-based medicine? Should we assume that they are deeply concerned with the application of evidence in the field of medicine? If this is their concern then we could rephrase the statement as follows:

“I believe in conjecture-based medicine”. Now this hardly seems right. I don’t think the majority of our colleagues advocate a return to the days of Galen and bloodletting? But this does leave us in a difficult situation as we have exhausted our examination of the statement and have not yet found the objectionable element.

At this point it is always wise to attempt to acquire more data – and when pressed on the matter our colleagues offer the following evidence in support of their belief:

1. Things that are common sense don’t require evidence
2. Research fraud invalidates evidence-based medicine
3. Meta-analysis creates heterogeneous piles of nonsense
4. Clinical guidelines are tyrannical and impede independent thinking

We will briefly examine each one of these:

Things that are common sense don’t require evidence. This is often coupled with a reference to the classic work of satire (BMJ 2003; 327:1459) in which the authors found no randomized controlled trials showing that parachutes prevent death or major trauma after gravitational challenge. However, this common sense defence seems to be completely blind to the work and research that preceded this information becoming “common-sense”. In one fell swoop of chronological snobbery the parachute meta-analysis consigns the labours of Leonardo da Vinci (1452-1519), Louis-Sebastien Lenormand (1757 – 1837), and the death of Andre-Jacque Garneir (1769-1823) - all early parachute pioneers - to the amorphous knowledge pool that is now claimed as “common-sense”. How quickly revolutionary new discovery morphs into: “Oh, but we have always known that and never in a million years would I have been as ignorant as to do it any other way”. And how quickly the common sense of today becomes the laughable fallacy of tomorrow.

Research fraud invalidates evidence-based medicine. Here our colleague attempts to discredit the use of evidence in medicine because certain trials and studies have been found to be fraudulent or deeply flawed. But this is like attempting to discredit mathematics because someone, at some place, at some time, forgot to bracket before subtraction and so came up with the wrong answer. Or like banning motor cars because some second-hand car salesman sell unreliable, unsafe vehicles. The problem is not research and the evidence it produces, but rather the abuse of the way the evidence is produced. The question must also be asked – if the research process is so incredibly flawed as to call into question all medical research - how can we know which research is fraudulent? There must be a standard against which bad / flawed research is compared, and this immediately

implies that our anti-evidence-based medicine colleague is able to recognize both good and bad research.

Meta-analysis creates heterogeneous piles of nonsense. Meta-analysis is a tool, designed to synthesis data from multiple studies, conducted at different times, that all attempt to answer a specific question. As with all tools meta-analysis is open to abuse and misuse. Using a hammer to open a wine bottle is a messy thing, but the mess neither invalids the utility of the hammer for hammering in nails, or the wine in the bottle for hammering students. Similarly, as with all information systems, if you put rubbish in - you get rubbish out. Unreliable small individual studies result in unreliable meta-analytic results. This says nothing about the validity of evidence-based medicine, or the veracity of meta-analysis, and much about the importance of conducting good research.

Clinical guidelines are tyrannical and impede independent thinking – says our protagonist portraying herself as the plucky independently rebel alliance struggling against the monolithic tyranny of the “Clinical Guideline” empire. But opinions, as vehemently as they may be held, remain only opinions and can safely be ignored if not supported by that pesky evidence stuff.

So - in the final analysis - what can we conclude from: “I don’t believe in evidence-based medicine”? Charitably, we may see this as an inarticulate, poorly constructed protest against the dangers of injudicious meta-analysis, slavish adherence to guidelines, and fraudulent or poor quality research. More harshly, we could construe this to be a fad - a mindless utterance in an attempt to boost medical street credibility.

So the next time you feel tempted to fire off “I don’t believe in evidence-based medicine” – take a moment and think about exactly what you mean by that. And while you are thinking it through - look down - you might be wearing neon leg warmers.

“Be not the last by whom the new is tried, nor yet the last to lay the old aside”

Alexander Pope 1688 – 1744

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