

People versus p-Values

Category: Uncertainty

written by Olapeju Simoyan | August 21, 2020

The only thing that seems certain these days is uncertainty itself. I am in the process of preparing educational materials for the general public to address some of the misinformation related to the COVID-19 pandemic. How does one address all the misinformation out there, especially when people's lives are concerned?

I planned to explain that science is evolving, knowledge is progressive and that is why recommendations sometimes change. When we are dealing with a new disease, there is so much we don't know, and as more knowledge becomes available, we adapt accordingly.

How do we provide clear information to the lay public when the science itself is so "muddy"?

My plan was to explain the different types of research and levels of evidence, and how "not all research projects are created equal."

Then I read about how some statisticians (of all people!) are calling for us to abandon the sacred p -value. Really? Abandon the magical statement " $p < 0.05$, therefore the results are statistically significant," that we have grown so used to reading in the scientific literature? I had enough prior experience with research to know that statistical significance does not equate to clinical significance. I already knew that medical research doesn't produce answers that are as clear cut as we would want. Even randomized double-blinded placebo-controlled clinical trials – the gold standard – will at times leave us with more questions than answers. But how do I explain all this to the lay public?

Even as a proponent of evidence-based medicine, I have always believed patients should be treated as individuals, and that a more nuanced approach is necessary when it comes to patient care. Let's say I believed in putting people over p -values.

People want answers that are clear-cut, but unfortunately, when it comes to a new disease, we don't have them. We need to accept that we don't know what we don't know, but we cannot ignore what we do know. We need to act on whatever knowledge we have, because that is the best we can do for the time being. We can continue to practice preventive strategies like hand hygiene, wearing of face masks and physical distancing that we know work. Our challenge is to gain the trust of the public and convince them to do what is right, even if we don't have all the answers.

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