

Standing up for Science

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“**M**an is a rational animal. So at least we have been told. Throughout a long life I have searched diligently for evidence in favor of this statement. So far, I have not had the good fortune to come across it,” said Bertrand Russell, the great British philosopher and humanist. This disconcerting statement by one of the greatest minds of the last century should provide food for thought to us doctors, who are the embodiments of applied science in the field of medicine. After all, it is the extraordinary advances in science made over the course of the last two centuries that have made medicine a viable profession worth pursuing. Hence, having engaged myself in a scientific practice for the better part of three decades, it pains me to see an alarming trend of people turning to unproven remedies for treating serious ailments, instead of trusting the sanitized confines of a doctor’s clinic.

On reflecting on this issue, the first question that strikes me is this: Have we failed the community in so dramatic a manner? Having undergone rigorous training in the scientific administration of medicine, followed up with hands-on experience and years of real life exposure to case studies, what we have to offer is surely a cut above the rest. Yet it’s all too often that it’s the quack around the block who holds sway. This phenomenon is degenerative and it’s time that we as professionals asserted ourselves in the larger interests of society.

EVIDENCE IS THE KEY

Evidence is the revolutionary concept that changed the nature of medicine and elevated it to a science. This concept itself took a long time to evolve. Initially, even doctors who practiced scientific medicine relied on ‘clinical judgment’ and ‘the art of medicine’ to administer treatments. The advent of the idea of evidence-based medicine in the latter part of the twentieth century was a paradigm shift that brought us closer to the people. Until then doctors were still considered individual experts with genius level capabilities. The concept of evidence-based medicine made our methods rational and understandable to all.

And society at large accepted it and trusted our skills without question.

Evidence is at the core of modern medicine – its very heart and soul – and this is what distinguishes us from the mumbo jumbo lot. Reliable evidence is all the more crucial in the public health sector as it touches the lives of countless people. For any problem to be solved, we have to get our maths right. Collection of accurate data as well as its intelligent analysis and interpretation guide us in sound decisions and effective long-term solutions. Further development of our profession continues to depend on being governed by this rationale. Hence it is inexplicable that there is this sudden resurgence in irrational remedies. Large scale movements for perpetuating alternative medicine and opposing effective interventions such as vaccines, are the looming challenges that we are unable to grasp. These developments are long-term threats not only to our profession but also to the well-being of society that we hold dear.

UNDERSTANDING THE CHANGE

To understand the present situation, we should introspect and try to figure out where we went wrong in the first place. Complacency is the prime culprit in most cases of occupational degeneration. Failure to adapt to new developments is another. The advent to technology, while being a boon, has inflicted its share of damage. Unfortunately, in today’s world, hi-tech equipment and impressive technology have taken centerstage, and the glamour associated with these has usurped the authenticity of healthcare. Evidence is treated as a backend activity and a purely technical endeavor. In sidelining the very idea of evidence in this way we are doing a great disservice to healthcare as a whole. The adverse impact of this can be clearly seen in the fact that a large portion of the population is still vulnerable to quacks and magical remedies.

The situation is aggravated further by the regular flip-flop that we see in the conflicting claims and advisory standards supposedly coming from evidence-

based research that we read in newspaper reports. Today people are confused regarding whether cholesterol is good or bad for health; they are confused by what is the right measure of sugar or glucose to determine if you have diabetes; they are confused if a particular type of food is good or bad; and so on. Adding to this is the growing suspicion that the pharmaceutical industry is manipulating research data and public perception to feed its corporate greed.

With increasing confusion, the common people are feeling cheated by the very system that they had been made to trust. They are getting frustrated that all the years of trusting this system have gone waste. In short, people are becoming vulnerable to alternatives, which are neither scientific nor inclined to deliver the desired results. So to put it lightly, there is strong evidence that evidence itself badly needs our healing touch. It is important that the 'evidence' part of 'evidence-based medicine' gets its due. The more we highlight the importance of evidence, the better it is for the public. The use of the word evidence should increase our trustworthiness in the eyes of the people and make the patient feel that he or she is in safe hands. This is exactly where we have failed. We have failed to communicate to the public about the efficacy of our methods. We only seem to be doing the job mechanically. And the patient is expected to pay the bill, whether we succeed or not.

AWAKENING THE GIANT WITHIN

Now the time has come to set things right. Along with our daily practice, we need to put our act together in other spheres as well. We should take pains to reconnect with our scientific roots and make determined effort to communicate the rational basis of our methods. More than ever before, there is a crucial need to place the spotlight on this subject. This could mean investing time to explain the efficacy of a particular protocol to the unsure patient. It could mean, explaining issues in depth during a casual conversation with laypeople in a social situation; or making a speech at a local school; or for that matter, writing educational articles for the mass media. In short, it calls for us to play the added role of a brand ambassador for scientific thinking and evidence-based medicine. For the braver among us, it could mean standing up for what is right, while risking social displeasure. This would be in keeping with the spirit of the Constitution of India, which under Article 51A (Part IVA) identifies 'to develop scientific temper, humanism and the spirit of inquiry and reform' as one of the fundamental duties of every citizen. By way of warm up for this role, you may refer to 'Defending Science-Based Medicine: 44 Doctor-Bashing Arguments and Their

Rebuttals', a feature article authored by Harriet Hall and published in *Skeptical Inquirer* [1].

I can cite two examples of doctors taking the lead when challenged; both instances are from my hometown Mangalore. Some time back, a stir was created by the issue of a new phenomenon called 'mid brain activation.' This was obviously a scam whereby a commercial 'educational' firm began to promote a so-called innovative program, which would enable little kids to develop 'sixth' sense. As proof of the pudding, the promoters of this venture got the children 'trained' by them to accurately identify colors of objects while being blindfolded. The local rationalist organizations challenged this and alleged that this was a fraud, along with furnishing testimonies by stage magicians who routinely perform such feats. But the best part of this controversy came about with the intervention of The Karnataka Ophthalmic Society. Led by a very reputed and senior ophthalmologist, their team gave a strong testimony before the mass media that it is scientifically impossible to gain vision without light falling on the retina [2]. Qualified doctors went the extra mile to enlighten the community with their scientific knowledge and took the cause of scientific thinking forward.

Yet another unfortunate incidence – unfortunate for obvious reasons – was when Karnataka State unit of Indian Medical Association (IMA) organized a special program called 'IMA Initiative for Emotional Health and Emotional Wellbeing of Medical Students and Doctors in India' to address the problem of increased rate of mental illness and suicides among young medicos. A closer examination of the program curriculum revealed that it was largely an exercise in unproven remedies. On realizing the gravity of the issue, nine eminent doctors of our state – all registered members of IMA – promptly issued a press statement opposing and dissociating themselves from the program [3]. Once again the doctors stood up for their ethos and communicated their commitment to science before society.

As doctors, we need to demonstrate our courage of conviction in small as well as magnified ways. Shying away from this responsibility can only be to our own peril. On a larger scale, we need to trudge forward by developing inventory of reliable data, evolving new analytical and statistical tools, projecting new perspectives for interpretation of data – all important issues which if addressed by experts can give a major boost to the entire healthcare sector as a whole. We need to explore the infinite possibilities offered by the advances in information technology to continuously enhance the relevance of evidence at all levels of

healthcare. It is time for us to evolve into assertive professionals.

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