

Bad science is dangerous for your health

Bad Science. By Ben Goldacre. HarperCollins, London; 2008, 338 pp. ISBN 978-0-00-724019-7. R214.00.

To what extent are placebo effects real, common, and quantifiable? Placebos are simple chemicals not known to have any significant physiological or therapeutic effects—but packaged as though they do. In the design of clinical trials, they are often used as a base-line control for the testing of new drugs or therapies (although it is true, as pointed out in this book, that more appropriate controls would be those medications or therapies that are the best available to date).

Ben Goldacre believes, in the light of admittedly impressive evidence presented in a key chapter, that placebo effects are powerful and important. He examines ethical concerns associated with the deliberate use of placebos in mainstream treatment approaches, as well as the risks to the public of having charlatans (who are good at maximising placebo effects) mixing their real messages with self-serving false ones. But these are not the central issues and this leaves him with several unresolved interpretations and unsatisfactory explanations. As a result, his main 'bad science' thesis is effectively diluted—readers may end up wondering if the shenanigans of the faith-based health industry are really so injurious, if induced faith alone is half the battle in countering the unpleasant symptoms of many illnesses.

Goldacre is a 34-year-old British doctor and broadcaster who writes the regular 'Bad Science' column in *The Guardian*. His book is very wittily, forcefully and convincingly written. He is a missionary for straight thinking—the book is, amongst other things, a beautifully articulated and clear primer on the basic statistics used in well-executed clinical trials.

And he does not scruple to look for, find and follow up on cupboard-sequestered skeletons, including a number that have been exposed in the law courts. In particular, he goes for the jugular of super-rich, pill-purveying 'experts' with shady qualifications, who he thinks have succeeded in enslaving the media and the gullible public on matters of health and safety.

Bad Science is both an excellent read, and an important public contribution that should be required reading for newspaper editors, science journalists, health educators, and pharmaceutical executives.

Goldacre examines a number of illustrative, high-profile health stories of the recent period. These include officially

promoted 'brain gym' sessions in U.K. schools based on highly improbable mechanisms of induced brain oxygenation; wonder-working cosmetics; and fish-oil pills to make schoolchildren cleverer *en masse*. Most damaging of all have been unverified, yet successfully contested, claims of a causal connection between mass vaccination and autism. These have already lowered vaccination uptake rates sufficiently to have increased the prevalence of some serious childhood infectious diseases, such as mumps and measles.

Goldacre has a very poor opinion of the kinds of 'science journalism' practised by the mass media in which he detects conspiracies involving journalists whom he believes to be ignorant of science, on the one hand, and industry, particularly Big Pharma, on the other. He believes this has resulted from the prohibition in the U.K. and elsewhere of direct advertising by drug companies, which has led to sometimes corrupt, indirect approaches to journalists. These result in apparently well-researched but often 'gushing' and uncritical narrative reports on the dramatic efficacy of the drugs in question. This is a very serious charge, and not one that newspaper editors will relish. South African newspaper editors will surely want to reassure the local public that no such practices are permitted here.

Another local stakeholder which will want to reassure us is the pharmaceutical industry, the subject of another chapter entitled 'Is Mainstream Medicine Evil?' Goldacre pulls no punches in analysing the ways in which hard-pressed drug

executives create the conditions under which many of their new super-pills will sell as blockbusters. This is not pleasant stuff, especially combined with the preceding notions of media collusion and general public brain-washing. Even the scholarly professional literature is sullied, according to Goldacre, by the apparently frequent omission (non-publication) of studies reporting negative results.

Goldacre reminds me of Richard Dawkins, in being a very bright, sharp-tongued writer with a well thought-out axe to grind. In *The God Delusion*, Dawkins ended with a rather fuzzy hypothesis in which he posits that (near-universal) religious tendencies have emerged as a by-product of mental capacities which have evolved under natural selection. Here Goldacre marvellously builds a convincing case for evidence-based health care, shows us that ordinary people can readily understand its basic principles, and then allows his treatment of the placebo effect to complexify an otherwise clear-cut situation. Perhaps they are both right in their interpretations, but this particular reader has been distracted from the main messages in both cases. One message that certainly mustn't be lost is that lame and unclear expositions of evidence-based conclusions concerning disease prevention and personal health promotion are dangerous.

They open up the extensive space filled by the modern equivalents of snake-oil salespersons, whose domain and profitability has been greatly enhanced by the vast reach and questionable ethics of modern media.

Wieland Gevers

Emeritus Professor in medical biochemistry, University of Cape Town, and associate editor for medical science for the SAJS.
e-mail: wieland@telkomsa.net