

BOOK REVIEW / CRITIQUE DE LIVRE

Gorman SE, Gorman JM. **Denying to the grave: why we ignore the facts that will save us.** New York: Oxford University Press; 2017. Hardcover: 312 p. ISBN 978-0-19-939-660-3. Price: USD \$29.95. Available from: <https://global.oup.com/academic>.

As librarians, we tend to view medical decision-making through the framework of health literacy, which the Canadian Public Health Association's Expert Panel on Health Literacy defines as "the ability to access, understand, evaluate and communicate information as a way to promote, maintain and improve health in a variety of settings across the life-course" [1]. For some time, I have felt that health literacy does not fully explain many individual healthcare decisions. Why are some of my highly educated friends so keen on cleanses and fad diets? How can a family member with an advanced science degree express skepticism about vaccines? Why, in my home province of Alberta, did a toddler die of meningitis after his parents refused to seek appropriate medical care [2]?

Research also suggests that factors other than health literacy may be at play; a recent Israeli study found that parents with higher levels of communicative and critical health literacy were actually *less* likely to vaccinate their children [3].

With the above examples in mind, I picked up Sara and Jack Gorman's *Denying to the Grave: Why We Ignore the Facts that Will Save Us*, which delves into some of the cognitive science behind false health beliefs. The authors are well positioned for the task: Sara is a public health expert and writer whose work focuses on health communication, global public health, mental health, and psychology; her father and co-author, Jack, is a former academic psychiatrist.

The authors begin with the premise that people who hold anti-scientific health beliefs are not stupid or uneducated. They also emphasize that the problem is not simply a lack of information or of the basic skills to critically appraise it. Instead, they argue that these beliefs are shaped by cognitive and psychological tendencies that are generally *adaptive* from the perspective of evolutionary psychology (the tendency

to find community among like-minded people and to follow charismatic leaders, for example), but in the case of certain health belief systems, are being applied in a *maladaptive* way. They also look at some common sources of cognitive error and bias.

Individual chapters are devoted to the psychology behind conspiracy theories and charismatic leaders, as well as common sources of cognitive error related to confirmation bias; difficulties with understanding causality, probability and risk; and our tendency to avoid complexity. Examples drawn from various health beliefs help to illustrate these concepts in action. The authors conclude with several suggestions for addressing these problems.

I found the book provided an accessible and compelling overview of the complex reasons why people embrace false health beliefs. Beyond healthcare, I found that the chapters on conspiracy theories and charismatic leaders were highly relevant to recent political developments around the world, such as Brexit and the U.S. election.

For anyone who has studied cognitive biases, some of the later chapters might be a bit redundant, but I appreciated how the authors emphasized the adaptive nature of these biases in our evolutionary history; discussed why these biases work well for simple decisions, but fail us in the face of complexity; and made the case that simply accusing people of wrong thinking will not eliminate these biases. For medical librarians, this book offers a useful complementary framework to health literacy for understanding how people assess health information and make decisions.

The authors employ several examples of false health beliefs, some of which work better than others. The anti-vaccine examples provided new insight into a familiar issue, while the authors' introduction to the AIDS denialism movement provided a parallel example on a topic where I was not previously knowledgeable. However, other examples, such as their contention that there is a movement opposed to the use of electroconvulsive therapy to treat depression, were not really fleshed out; they seemed to assume a level of knowledge that readers might not possess. Their use of the anti-GMO and anti-nuclear

movements as examples of anti-science beliefs seemed to me one-sided; while much of the opposition to GMOs and nuclear power may be driven by emotion rather than science, there are legitimate scientific concerns about the safety of nuclear power plants and the ethics of genetically modified organisms, which the authors did not really acknowledge.

The authors' concluding recommendations are a bit of a mixed bag. I agreed with their call for scientists to engage more with the public, and to communicate scientific findings and debunk false claims in a way that resonates better with the public. Their suggestion that the media provide better training in scientific reporting to their staff seems quaint in the era of self-curated "fake news," and while it's a worthy goal, it may be out of reach for many establishment news outlets that are facing deep cuts and laying off senior staff. However, journalism schools could certainly do better at educating their students in scientific reporting.

The authors also suggest a complete overhaul of how science is taught, beginning in elementary school, so that the focus is not on dry facts and formulas, but rather on engagement with science and a deep understanding of the scientific process. This appears to be already happening to some extent, with the rise of science, technology, engineering and mathematics (STEM) education initiatives across North America, but there are challenges to implementation in a fragmented system where so much of the curriculum is controlled by provincial and state governments.

Given Sara Gorman's expertise in public health, the book is surprisingly lacking in suggestions for patient education or other public health interventions. Perhaps this reflects a larger weakness in the evidence base in this area.

Given the strong overview of the problems around false health beliefs, the weakness or vagueness of the proposed solutions leads to a bit of a deflating conclusion to an otherwise compelling book. However, when society at large is grappling with anti-science ideologies, fake news, and declining trust in traditional sources of authority, it is perhaps expecting too much to ask that this book provide strong recommendations on a way forward. Despite this drawback, this is an excellent guide to the landscape of irrational health beliefs and decisions.

References

1. Rootman I, Gordon-El-Bihbety D. A vision for a health literate Canada: report of the Expert Panel on Health Literacy [Internet]. Ottawa: Canadian Public Health Association; 2008 [cited 2017 Mar 27]. Available from: http://www.cpha.ca/uploads/portals/h-l/report_e.pdf.
2. Graveland B. Father gets jail in son's meningitis death; mom gets house arrest. *Globe and Mail* [Internet]. 2016 Jun 24 [cited 2017 Mar 27]. Available from: <http://www.theglobeandmail.com/news/alberta/father-gets-jail-in-sons-meningitis-death-mom-gets-house-arrest/article30614885/>.
3. Amit Aharon A, Nehama H, Rishpon S, Baron-Epel O. Parents with high levels of communicative and critical health literacy are less likely to vaccinate their children. *Patient Educ Couns*. 2017 Apr;100(4):768-75. Epub 2016 Dec 5. PubMed PMID: 27914735. doi: 10.1016/j.pec.2016.11.016.

Statement of Competing Interests

No competing interests declared.

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