Healthy Skepticism about pharmaceutical promotion

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Topics:

Who is Peter Mansfield?
Why is drug promotion a difficult topic?
What is promotion?
Do we think we are influenced?
Are we influenced?
Are we vulnerable to being misled?
What percentage of promotion is potentially misleading?

Who is Peter Mansfield?

I have 4 jobs:

- General Practitioner in Willunga, a village 50 km south of Adelaide, South Australia paid one day per week. Lecturer in the Discipline of General Practice, University of Adelaide paid one day per week. My duties include developing a Treatment Decision Education Collaboration (TDEC)
- National Institute of Clinical Studies (NICS) Fellow 2.5 days per week. My project is to develop a website to assist GPs to evaluate the usefulness of drug promotion compared to Therapeutic Guidelines.
- Director, Healthy Skepticism Inc unpaid. Healthy Skepticism is an international non-profit organization with the main aim of improving health by reducing harm from misleading drug promotion.

I am currently on a 23 city tour of Europe and the USA from April 20 – June 25, 2008 with stops in these cities:

Helsinki, Manchester, Leeds, London, Oxford, Berlin, Verona, Glasgow, Belfast, Geneva, Lausanne, Madrid, Köln, Mainz, Washington, Boston / Pawtucket, Chicago, New York, Seattle, San Francisco / Davis, Hobart

I am much obliged [old fashioned English for “thank you”] to my major sponsors:

- IQWiG [German Institute for Quality and Efficiency in Health Care]
- SSMI [Swiss Society of Internal Medicine]

Why is drug promotion a difficult topic?

Understanding drug promotion is not rocket science. It is a much more complicated and difficult topic. Understanding drug promotion requires understanding insights from many different fields of study. The more I learn from these any fields the more I realize that I have much more to learn. The useful fields of study include:

- Medicine and Pharmacy
  - Pharmacology, Epidemiology, Public Health, Evidence Based Medicine, Drug Evaluation, Pharmacovigilance
- Social sciences
  - Psychology, Economics, Sociology, Anthropology, Management, History, Politics, Communication Studies
- Humanities
  - Logic, Ethics, Rhetoric, Epistemology, Linguistics, Semiotics, Literature, Art, Religion
- Professions
  - Marketing, Public Relations, Education, Advocacy, Regulation Policing, Law, Accounting
- Statistics

Because drug promotion is so complex this paper can only be a quick introduction covering only the tip of the iceberg. I will have to simplify many complex issues. I apologize for any misunderstandings or distortion that may result.

The understanding of drug promotion is also complex and difficult for the following reasons:

- The greatest obstacle to discovering the truth is being convinced that you already know it. Many doctors believe that they all ready know everything they need to know about drug promotion so they are not open to reconsidering their beliefs.

- Because we swim in a see of promotion we don't notice it, just like fish may not notice the water that they swim in.
- The issues are not black and white.
- The conclusions from psychological research about persuasion do not fit well with the current belief systems of many health professionals. Many reject these conclusions because they feel wrong or difficult to believe without assessing the strength of the evidence. This tendency of people to reject facts if they feel that they are implausible was known by the ancients. Plato who attributed the following quote to Socrates discussing sophistry: "In courts of justice no attention is paid whatever to the truth… all that matters is plausibility... both prosecution and defence positively suppress the facts in favour of probability, if the facts are improbable. Never mind the truth -- pursue probability through thick and thin in every kind of speech; the whole secret of the art of speaking lies in consistent adherence to this principle." (Plato, Phaedrus 272). Thucydides wrote that "When someone finds a conclusion agreeable, they accept it without argument, but when they finds it disagreeable, they will bring against it all the forces of logic and reason." Modern psychologists call these tendencies "confirmation bias".
- Many health professionals perceive any discussion of drug promotion to be a threat to their freedom to choose for themselves what to do, including whether or not to accept gifts from drug companies. Psychological research has found that threats to freedom often elicit reactance. Reactance is an emotional reaction against threats to freedom or pressure to change. Reactance can cause people to adopt or strengthen views contrary to what was intended.

What is promotion?

Promotion can be defined as persuasion with the aim or effect of increasing or decreasing the use, sales or acceptance of a product, service or idea. Promotion is a subset of marketing. The 3 other main components of marketing are: developing the product, pricing and distribution or placement. Thus the 4 Ps of marketing are: product, price, promotion and place. Promotion includes many methods: advertising, sales representatives, gifts, samples, sponsorship, public relations etc.

Do we think we are influenced?

Many studies around the world have found similar results to a study by Steinman et al (2001). When they asked young US physicians: "How much influence do sales representatives have on your prescribing?" the answers were: 61% none; 38% a little and 1% a lot. It seems that the majority of us are confident that we are completely or nearly completely invulnerable to promotion. However we are not so confident about our colleagues. When asked "How much influence do sales representatives have on other physicians' prescribing?" the answers were: 16% none; 33% a little and 51% a lot.[1] have It is very common for humans to believe that they are at lower risk of harm than other people. Psychologists call this the illusion of unique invulnerability. Consequently if you think you not vulnerable to being misled by drug promotion you are in the majority. However, there is also evidence that this illusion increases vulnerability. Overconfidence increases vulnerability because it reduces the motivation to think carefully about persuasive messages so they are less likely to be rejected.[2]

One of the main reasons why doctors are overconfident is that they believe that their high intelligence is an adequate protection. Recently, an Australian national GP leader for denied that doctors were be adversely influenced by drug promotion. His main justification for this denial was that: "Doctors have the intelligence to evaluate information from a clearly biased source."[3] However intelligence is a risk factor for overconfidence and overconfidence is the main risk factor for being vulnerable to misleading promotion. For example, a study of internet fraud has found that "clever people are easier to con… To do the bigger scams you need the victims to trust their own capabilities and experience… A significant number of high-loss cases involved specialists such as psychiatrists, psychologists and neuro-surgeons."[4]

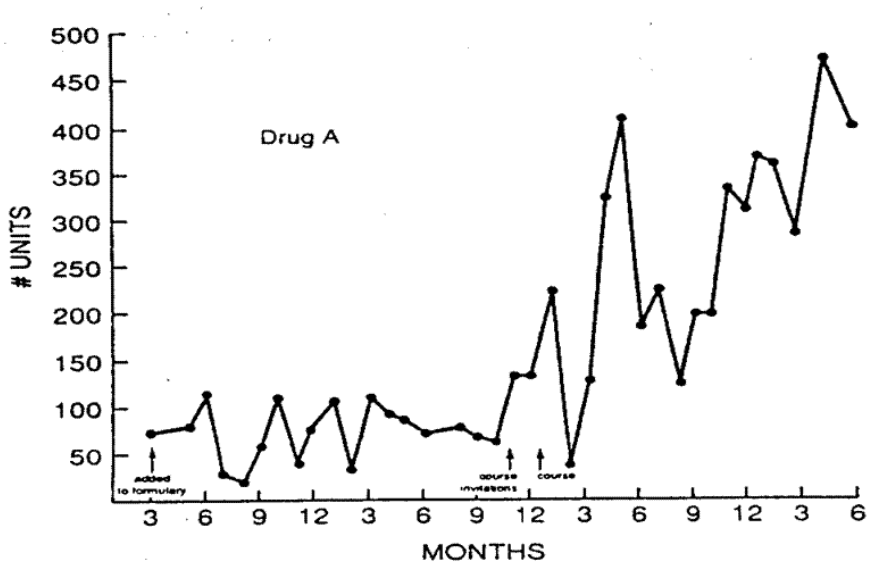
Are we influenced?

Pharmaceutical industry staff believe that drug promotion is effective because they see sales change soon after promotional activities occur. In 1964 advertising company executive Pierre Garai disclosed that: "As an advertising man, I can assure you that advertising which does not work does not continue to run. If experience did not show beyond

doubt that the great majority of doctors are splendidly responsive to current [prescription drug] advertising, new techniques would be devised in short order."[5]

Pharmaceutical companies have a legal obligation to invest money only where it is most likely to provide the highest return on investment. In many countries they have been the most profitable of all industries for most of the past 100 years. They only invest in promotional activities where they have good reason to believe are likely to increase prices and/or sales volumes. They would not invest in promotion if it did not work on average to provide high returns on investment. Drug companies spend huge amounts on promotion in most countries. They may spend more in the USA but that is the only country where reliable expenditure data is available. "Pharmaceutical promotion in the United States in 2004 is as high as $57.5 billion… Excluding direct-to-consumers advertising and promotion towards pharmacists, the industry spent around $61,000 in promotion per practicing physician… As a percent of U.S. domestic sales of $ 235.4 billion, promotion consumes 24.4% of the sales dollar versus 13.4% for R&D."[6]

The following graph shows the volume of prescribing of drug A in a hospital in northern USA. The doctors in that hospital were asked if they were influenced by drug promotion. They denied it. Initially the level of prescribing was low. It increased when the doctors received an invitation to an all expenses paid seminar about the drug in a resort in Florida. The level of prescribing dropped while the doctors were away at the seminar then increased even more after they got back.[7]



Perhaps the initial level of prescribing was too low and the post promotion level was more appropriate. The main point here is that doctors who believed that they were not influenced were in fact influenced. Observational evidence such as this study is not as conclusive as randomised controlled trials. However the industry has millions of sales graphs similar to this one.

Are we vulnerable to being misled?

I am a member of a team doing a systematic review of studies that have measured doctors' exposure to promotion and measured the quality of prescribing and analysed the relationship between those two measures. So far we have found 7 studies -

1. Andersen M, Kragstrup J, Sondergaard J. How conducting a clinical trial affects physicians' guideline adherence and drug preferences. JAMA. 2006 Jun 1;295(23):2759-64.
2. Auvrey L., Hensgen F., Sermet C. La diffusion de l'innovation pharmaceutique en medicine liverale: revue de la literature et premiers resultants francais. Bulletin d'information en exonomie de la sante. 2003; 73
3. Becker MH, Stolley PD, Lasagna L, McEvilla JD, Sloane LM. Differential education concerning therapeutics and resultant physician prescribing patterns. J Med Educ. 1972 Feb;47(2):118-27.

4. Berings D, Blondeel L, Habraken H. The effect of industry-independent drug information on the prescribing of benzodiazepines in general practice. Eur J Clin Pharmacol. 1994;46(6):501-5.
5. Haayer F. Rational prescribing and sources of information. Soc Sci Med. 1982;16(23):2017-23.
6. Muijrers PE, Grol RP, Sijbrandij J, Janknegt R, Knottnerus JA. Differences in prescribing between GPs: impact of the cooperation with pharmacists and impact of visits from pharmaceutical industry representatives. Fam Pract. 2005 Dec;22(6):624-30.
7. Spingarn RW, Berlin JA, Strom BL. When pharmaceutical manufacturers' employees present grand rounds, what do residents remember? Acad Med. 1996 Jan;71(1):86-8.

Of the 7 studies 4 found that exposure to promotion correlated with lower quality prescribing. Two studies found no correlation. This could mean that promotion is not effective all the time or perhaps there were effects that those 2 studies did not detect. One study found mixed effects. Exposure to promotion was associated with higher levels of prescribing for less common severe cases where the drug was appropriate (improving quality) but also higher levels of prescribing for more common less severe cases where the drug was inappropriate (decreasing quality). On the available evidence exposure to promotion can be associated with increased or decreased quality of prescribing. It may sometimes have no effect, in which case it is just a waste of money. It appears that overall exposure to drug promotion may do more good than harm. There is not enough evidence of benefit to justify doctors investing their limited time in allowing themselves to be exposed to drug promotion.

There is corruption in most professions including the medical profession. However that is not the main problem arising from drug promotion. The main problem is unintended bias. “Social science research shows that even when individuals try to be objective their judgments are subject to an unconscious and unintentional self-serving bias.”[8]

What percentage of promotion is potentially misleading?

The answer to this question depends on definition used. My definition is: Promotion is potentially misleading when it omits relevant information that is needed for good decisions or includes persuasion techniques that that have been identified as potentially misleading in studies of logic, critical appraisal, psychology or rhetoric. These techniques ay be used deliberately with intent to mislead or ay be used innocently by people who have been misled themselves. For 25 years I have been looking for an example of promotion that is not potentially misleading. The reason I want such an example is that I want to influence drug companies and praise is a more effective way to influence people than criticism. However I have not been able to find any examples in Australia or any of the many other countries I have visited. Sometimes I have found advertisements that I initially think are ok but on loser examination I find that they had fooled me. I frequently ask audiences at the talks I give to send an example of promotion that is not potentially misleading but none have been sent to me. If you see a good example please send it to me at peter@healthyskepticism.org. It is still possible that some promotion is ok but I think the parentage must be very small. I conclude that the percentage of promotion is potentially misleading is likely to be near 100%.

1 Steinman MA, Shlipak MG, McPhee SJ. Of principles and pens: attitudes and practices of medicine housestaff toward pharmaceutical industry promotions. Am J Med. 2001 May;110(7):551-7.

2 Sagarin BJ, Cialdini RB, Rice WE, Serna SB. Dispelling the illusion of invulnerability: the motivations and mechanisms of resistance to persuasion. J Pers Soc Psychol 2002 Sep;83(3):526-41

3 Richards D. Guess who’s coming to dinner. Aust Dr. 2004;23 Jan:19-21

4 Malvern J. Clever people ‘are easier to con’ The Times March 17, 2008 www.timesonline.co.uk/tol/news/uk/crime/article3564520.ece

5 Garai PR. Advertising and Promotion of Drugs. in: Talalay P. Editor. Drugs in Our Society. Baltimore: John Hopkins Press; 1964.

6 Gagnon MA, Lexchin J. The Cost of Pushing Pills: A New Estimate of Pharmaceutical Promotion Expenditures in the United States. PLoS Med. 2008 Jan 3;5(1)

7 Orlowski JP, Wateska L. The effects of pharmaceutical firm enticements on physician prescribing patterns: there’s no such thing as a free lunch. Chest 1992;102:270-3.

8 Dana J, Loewenstein G. A social science perspective on gifts to physicians from industry. JAMA 2003 Jul 9;290(2):252-5