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ARTICLE

Tricks of the trade in drug promotion

Non-propositional content in pharmaceutical advertising to health professionals

SUMMARY

Advertisements for prescription drugs aim to increase use of the products. These advertisements make claims about the drugs, but also include non-propositional content.

The purpose of non-propositional content is to encourage good feelings about the products. This can be achieved with imagery that features happy people, fun activities or pleasing scenery.

Non-propositional content may lead health professionals to believe a drug is more beneficial or safer than the evidence suggests, even though they deny being influenced by advertising.

To avoid being misled by advertising, health professionals could analyse the claims being made and compare them with independent sources of drug information. Ignoring promotional material is another option.

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Introduction

Direct-to-consumer advertising of prescription drugs is prohibited in Australia, however drugs are advertised to healthcare professionals. While perhaps not as contentious as direct-to-consumer advertising, promoting drugs to doctors is still controversial.

A common concern is that advertisers, who are paid to persuade, distort information to present a drug favourably. There is evidence that advertisements:

- unduly emphasise benefits over harm[1]
- fail to quantify serious risks[2]
- make claims with inadequate or no substantiation[3]
- rely heavily on research funded by the drug's manufacturer.[4]

Content of advertisements

The *Competition and Consumer Act 2010* places broad constraints on the use of false or misleading representations in advertising.[5] The Medicines Australia Code of Conduct also states that:

> all information, claims and graphical representations provided to healthcare professionals … must be current, accurate, balanced and must not mislead either directly, by implication, or by omission.[6]

These restrictions mainly apply to the propositional content, which is explicit claims about the drug that can be assessed as true or false (see Box). This propositional content can be checked against independent resources and the product information, which refers to the drug's dose, indications, contraindications, precautions and adverse reactions.[7] For example, an Australian advertisement for Circadin (prolonged-release melatonin) stated that it 'delivers quality restorative sleep with no evidence of rebound insomnia, tolerance, dependence or withdrawal symptoms. Patients awake refreshed and ready to face the day'.[8] Each claim can, in principle, be verified or refuted by looking for supporting evidence.

Drug advertisements also contain non-propositional content, which persuades without conveying a proposition that can be proved true or false (see Box).[9] Imagery is a commonly used form of non-propositional content. About half the Circadin advertisement was imagery. There were two pictures of a woman waking up. In the first, her head is barely raised and her eyes are half closed. The light is dim blue and the caption reads '7.00 am'. In the second, the woman is sitting up smiling and holding a cup of coffee. There is bright light and the caption reads '7.00 am: Circadin'. The background to both images is a dark sky that lightens as sun breaks through cloud.[8] The implication may be that Circadin takes people out of the 'clouds' of insomnia into the 'light' of quality sleep. However, the picture is not just a didactic message. It aims to build positive emotional associations with the drug. To this end, many drug advertisements feature happy people, fun activities

Propositional content – explicit claims of a product which can be assessed as true or false

Non-propositional content – images, music or other things in advertising that persuade, but cannot be judged true or false in the same way that statements or 'propositions' can

Evaluative conditioning – creation of a favourable attitude to an object by repeatedly pairing it with something that elicits positive feelings. For example, consumer products are often paired with images of attractive smiling people

and majestic scenery. This non-propositional content is influential yet often escapes regulation because it is not obviously false or misleading.

Emotion and persuasion

Aristotle recognised the persuasive power of emotion in 'The art of rhetoric'. For Aristotle, to induce feeling or 'pathos' in the audience was as potent a rhetorical tool as the good character of the speaker ('ethos') and the clarity of their argument ('logos'). However, in 'Phaedrus', Plato cast emotion as an unruly horse threatening to upset the chariot of reason. The view of emotion as the enemy of reason was dominant during the Enlightenment period of history and persists widely today. Research, however, suggests that feeling or 'affect' is not only essential for decision making, but actually helps it.

In the USA in 2005 drug companies spent just under half a billion US dollars on journal advertising – this returned approximately five dollars for every dollar invested

Theorists now propose an 'affect heuristic' or shortcut by which feelings aid decisions.[10] We unconsciously consider a range of options, tag each with feeling, and are biased to choose the one with the most positive affective reward. In short, we use feelings as information about what is good for us.[11]

Emotions may be especially useful when dealing with complex problems. People who rely on feelings to weigh many attributes of a new car may make better purchase decisions than others who engage in lengthy deliberation.[12] In a gambling task, people have physiological changes when they are considering a choice that is risky, before they know it is a risky choice. Non-conscious biases guide their behaviour before their conscious knowledge does.[13]

Evaluative conditioning

Advertisers co-opt our feelings in ways that suit their persuasive goals. Evaluative conditioning is a prominent means by which branding creates positive feelings (see Box).[14] Products for which we hold no special feeling are repeatedly paired with images or music that make us feel good. In a variant of classical conditioning, our good feelings eventually become linked to the product. Evaluative conditioning fosters more positive beliefs about a drug's safety and efficacy, and increases the intention to use it.[15] This process occurs with little or no conscious awareness and the changes in belief are likely to persist.[16]

Consistent with drug advertising in the USA, print advertisements in Australian medical publications make copious use of imagery known to cause evaluative conditioning.[9] Between 60%[17] and 75%[18] of US print direct-to-consumer advertising of prescription medicines includes an emotional appeal in the headline or visuals. Negative emotions such as fear, sadness or shame are associated with the illness or failure to use the drug. Positive emotions such as joy, happiness and humour often signal a return to normality through use of the product.

Emotional appeals are also created by the way promotional claims are worded. An advertisement for the antiplatelet drug ticagrelor urged readers to 'Save even more lives'.[19] Positive words have been shown to produce evaluative conditioning,[20] so this phrase is likely to persuade more than simply saying 'Reduce mortality', without being overtly misleading.

Are health professionals vulnerable to evaluative conditioning?

Many health professionals believe their specialised knowledge makes them less vulnerable to emotional persuasion. The 'elaboration likelihood' model gives some support to this view. It proposes that advertisements persuade by a central route that is conscious and deliberative, and by a peripheral route that is unconscious and automatic.[21] (Note: this model does not refer to the central and peripheral nervous system.) Viewers are more likely to process information via the central route – the path taken by propositional content – if they have the motivation and ability to do so. Health professionals may be more motivated to focus on an advertisement's explicit claims and they clearly have more ability than a layperson to critique the claims.

The peripheral route of persuasion is the path taken by non-propositional content and is increased with distraction and time pressure. Busy doctors may be more vulnerable to this pathway than they think. A study found many doctors' prescriptions reflected commercial rather than academic sources of information, despite their denying the influence of advertising.[22] Indeed, health professionals may mirror the wider community in being subject to the 'third person effect'. This is a psychological bias where others are deemed to be more easily persuaded by mass communication than oneself.[23]

Advertising in medical journals is effective. In the USA in 2005 drug companies spent just under half a billion US dollars on journal advertising.[24] This returned approximately five dollars for every dollar invested.[25] There is little doubt that the persuasive intent of drug advertising results in altered prescribing patterns.[26]

How can health professionals resist?

Two techniques for resisting evaluative conditioning have been analysed.[27] 'Persuasion knowledge priming' arms the viewer with an understanding that positive

images bear little relation to a product's attributes and should be ignored. Alternatively, viewers are asked to relabel positive imagery with negative terms. Someone looking at the Circadin advertisement could, for example, try to ignore the smiling woman, or recite unpleasant adverse effects as they view her image. However, these techniques only marginally reduced conditioning in the cited study, and this studied beer rather than pharmaceuticals directly.[27]

Some researchers consider the peripheral route of persuasion to be 'mental contamination'.[28] After reviewing a range of possible techniques, they conclude that reduced exposure to the persuasive stimulus is the only sure way to limit its influence. This means not looking at advertisements for drugs. If you do look at advertisements use an analytical approach. Be aware of the techniques that are being used to encourage prescribing of the product.

Using independent sources of information about drugs and therapeutics, such as *Australian Prescriber*, Australian Medicines Handbook and Therapeutic Guidelines may be beneficial. However, there is no evidence to show that independent sources can overcome the effects of evaluative conditioning.

How should regulators respond?

Regulating only propositional content may not reduce the influence of advertising. The US Food and Drug Administration (FDA) recognises the threat to accurate communication posed by non-propositional content in direct-to-consumer advertising of prescription medicines. In TV commercials it limits the use of distracting imagery when adverse effects are read. In print advertisements it bans 'signalling effects' where benefit information put in a headline has more impact than risks buried in the small print.[29] The FDA is even conducting research on how direct-to-consumer advertising of prescription medicines impacts on unconscious or implicit attitudes.[30]

Calls to mandate statements of absolute risk in drug advertisements also recognise the power of non-propositional content. In particular, they aim to reduce so called 'framing effects' where the same information takes on different meaning when its format is varied. Stating a relative mortality reduction of, for example, 50% instead of an absolute reduction from 2% to 1%, does not promulgate a falsehood, but it does frame the information to present the treatment most favourably.[31]

Conclusion

Non-propositional content is effective and so it is unsurprising that positive imagery dominates many drug advertisements. If such content instils falsely favourable beliefs, it is doubtful that increased prescribing will benefit public health. Also, if the advertising of medicines to health professionals is to be properly regulated, research that quantifies the persuasive impact of non-propositional content is needed. Until then prescribers should be aware of the techniques of advertising and adopt an analytical approach when looking at advertisements for drugs.

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Book review

Stockley's Drug Interactions, Pocket Companion

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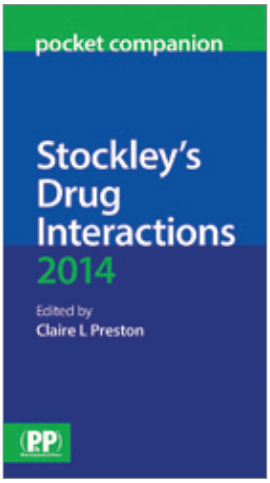

Preston CL, Baxter K.
London: Pharmaceutical Press; 2014.
720 pages

This pocket companion is published annually. It is based on the monographs in Stockley's Drug Interactions, which are fully referenced and derived from clinical studies, case reports and systematic reviews.

The book provides a compact text that is quick and easy to access and briefly summarises the evidence for each interaction. There are 2200 monographs listed alphabetically according to the generic name of the individual drugs or drug groups (e.g. ACE inhibitors, NSAIDs). Each monograph has one of four rating symbols assigned to each interaction determined by the action required, the severity or likely effect of an unmanaged interaction, and the extent of the evidence. The symbols identify interactions that:

- need to be avoided
- are potentially hazardous and caution is required
- are possible and may require monitoring
- are not significant and the drugs may be used concomitantly.

The interaction is defined under the two listed drugs. This is followed by a short practical discussion on how the interaction should be managed, the manufacturer's recommendations and guidelines from professional societies. For example, the manufacturer of leflunomide recommends avoiding alcohol while the British Society of Rheumatology limits alcohol intake to four to eight units a week.

One limitation of the book is the indexing. It could be improved as some interactions may be missed especially if the book is relied on as a quick, comprehensive resource. For example, a search for an interaction between voriconazole and simvastatin under voriconazole (which also states to 'see Azoles') will only find fluvastatin listed and not atorvastatin, simvastatin or statins. However, a search under azoles will find atorvastatin and simvastatin but not statins or fluvastatin.

Overall, this pocket companion provides a handy, clear and concise reference for identifying drug interactions and a practical guide to their management.