Testimony to the U.S. Congress, May 8, 2008.
House Committee on Energy and Commerce,
Subcommittee on Oversight and Investigations

Direct-to-Consumer Drug Ads: What Do People Understand and Remember?

Ruth S. Day[1]
Duke University

Introduction

I am a faculty member at Duke University and Director of the Medical Cognition Laboratory. My expertise is in cognitive science – studying how people understand, remember, and use information.

I am not here today:
--to be a nay-sayer – to say that DTC ads are bad and should be withdrawn from the market.
I am not here today:
--to be a yea-sayer – to say that DTC ads are good and should be kept on the market.
Instead, I am here:
--to report research on how people understand and remember information in DTC ads.

This research has not been funded by any pharmaceutical company, advertising agency, advocacy group, or government agency.

Basic Question

The basic question is – How do people understand drug information?
The answer is – with difficulty.

There are many possible reasons for this difficulty – for example, there can be a heavy information load, complex and technical information, and so forth.

However our focus today is on "cognitive accessibility."
"Cognitive accessibility" is the ease with which people can find, understand, remember, and use drug information, and do so in a safe and effective manner (Day, 2006). Cognitive in-accessibility occurs whenever people have trouble with any one or more of these processes.

Research Approach

Research in my lab examines a wide variety of drug information sources including television, the internet, and hardcopy. DTC occurs in all these environments, but today the focus is on television ads for prescription (Rx) drugs.

The basic research approach has three phases.

---

[1] Box 90086 / Duke University / Durham, NC 27708-0086 / ruthday@duke.edu

In the Cognitive Analysis Phase, we obtain quantitative measures about how information is provided, calculate cognitive accessibility scores, and compare the cognitive accessibility of information about benefits vs. risks.

In the Enhanced Display Phase, we keep the same information, but provide it in more cognitively accessible ways, based on well-established cognitive principles.

In the Test Phase, we perform cognitive experiments to test the effects of the Original and Enhanced versions on various cognitive processes such as attention, memory, comprehension, problem solving, decision making, behavior, and ultimately health outcomes.

Many cognitive principles underlie this work, including various language properties, chunking of information, location of information, speaking speed, and divided attention, as I'll describe shortly.

We have been collecting television ads for prescription drugs continuously since the year 2000. We record several hours from broadcast channels on a daily basis, then extract the prescription drug ads that occurred. Therefore we do not "target" any specific health conditions or drugs – we study all of them.

Major Finding

In a typical experiment, research participants view an ad (or multiple ads), then complete a series of cognitive tasks that examine their attention, comprehension, memory, and/or problem solving. A major finding concerns what happens when we ask them to report benefits (e.g., what the drug is used for) vs. what the possible side effects are (a type of risk). They are asked to answer based only on what was in the ad, not any prior knowledge they might have. People do much better in reporting the benefits than the side effects, as shown in Figure 1.

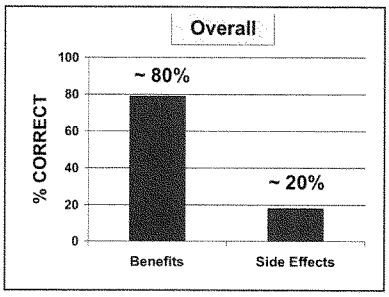

Figure 1 – Percent correct free report for benefits vs. side effects (averaged across multiple experiments).

Why should consumers know about risks? There are many views about this question. For example, the 1938 U.S. Federal Regulations says that, **"Drug [information] should be [provided] only in such medical terms as are not likely to be understood by the ordinary individual."** Today some stakeholders argue that providing too much risk information could be harmful – it could frighten or confuse patients, decreasing chances that they will comply with prescribed medical treatment. Others argue that consumers have a right to know what side effects might occur, so they can discuss treatment options with their physicians, take drugs in a safe manner, and know what action to take if any side effects occur.

Presentation of Benefits vs. Risks in Rx TV Ads

Benefits

The cognitive accessibility of benefits is generally high in Rx TV ads. For example, more time is devoted to them, the name of the drug and its benefits are usually repeated multiple times, and the language used to express them is usually easy to understand. Sometimes even complex concepts are provided in easy-to-understand ways, such as the role of food and genetics in affecting cholesterol levels, that a given drug affects both "good" and "bad" cholesterol in helpful ways, or that a given drug contains two drugs to treat two health conditions at the same time.

Risks

The cognitive accessibility of risks is generally low in most ads. For example, the information is often presented using more difficult-to-understand language, without "chunking" key information (separating it from surrounding information with pauses), providing it in unfavorable locations, using a faster speech rate, and/or providing visual or auditory distractions at the same time.

Sample Experiments

Examples of these cognitive accessibility factors and how they affect cognition are shown in the next slides.

Insert slides here

Conclusions

Overall, side effects and other risks are disadvantaged relative to benefits – the techniques used to present them often render them lower in cognitive accessibility. Although these cognitive accessibility problems are widespread, not all ads have them. This research shows that people have trouble understanding and remembering drug risks; however they improve when appropriate cognitive accessibility principles are used in the ads. For example, laboratory experiments show that viewing a given ad with speed-up of the spoken side effects makes it hard to remember what they were, while the same ad with no speed-up yields better performance.

Since these results were first reported, there have been some positive changes in some ads, for some cognitive accessibility factors. However many more are needed. Otherwise, risk information will continue to be **physically present but functionally absent** in many ads.

Recommendations

An evidence-based approach is needed (for both industry and regulators) to evaluate ads in terms of cognitive accessibility factors such as those described here. Separate analyses of benefits and risks are needed, to ensure that there are no major discrepancies in their cognitive accessibility. Ads with unfavorable cognitive accessibility scores – known to decrease comprehension and memory – could then be modified; in some cases additional cognitive testing may be useful. If done prior to airing, this approach could save considerable time and provide ads that are more useful to consumers.

Reference

Day, R.S. (2006) Comprehension of prescription drug information: Overview of a research program. *Proceedings of the American Association for Artificial Intelligence, Argumentation for Consumer Healthcare. aaai.org.*