FACTORS THAT INFLUENCE THE PUBLIC’S ABILITY TO SELF-MEDICATE

Part 3 – Package Information and Product Attributes

TAYLOR J

College of Pharmacy and Nutrition, University of Saskatchewan

ABSTRACT

The first two parts of this series dealt with the influences that operate when consumers evaluate episodes of ill health and the factors that govern their actions in response. The decision to self manage minor disease rather than consult a healthcare professional is the result of a complex interplay of influences including experience, confidence and access to information.

Once a person has decided to self manage such illness, a popular option is to use one of the growing number of Over the Counter (OTC) medicines available for self-medication. The safe use of non-prescription medicines, often without access to a health care professional, is reliant on the quality of the information provided with the treatment as well as the beliefs and abilities of the individual to utilize this information.

In part three of this series, two aspects relating to OTC medicine use are discussed. One, label-comprehension, is an area that has been addressed fairly frequently in the literature while the other, public perceptions of OTC medicines, has received less attention. Then, this final part of the series attempts to draw together the evidence from all three reviews in answering the question ‘Can the general population be expected to self-medicate effectively?’

Key words: OTC, self-medication, OTC drug label information, label comprehension, public perception of OTC medicines.

OTC PRODUCT PACKAGE INFORMATION

The sources of information available to assist in OTC product selection and use include friends/family, professional help, advertisements, the media, and the Internet. Package information is critical to this process. In most countries, a medicine that cannot be taken safely and effectively by following directions provided on (and in) the package is likely to remain on prescription. Accordingly, there has been much interest in the readability (and comprehension) of the information provided and the propensity of the public to read it.

Medicine users in the Netherlands identified dosage, interactions with other agents, relevance to their symptoms, and side effects as the most important information before taking a medicine. Elsewhere, Johnson and Drungle examined the influence of age and OTC medicine
type on decision-making in relation to selecting an antacid, a cold medicine, a laxative, and an analgesic\textsuperscript{18}. Younger and older adults responded similarly regarding the extent to which they read product labels. Older adults listed active ingredients and side effects as the most important information for cold remedies, laxatives, and pain relievers, but active ingredients and warnings as most important when purchasing antacids. Older adults took almost twice as much time as younger adults to view information, but were more organized in their searches for information. Both groups took less time to review information about pain relievers (as almost all subjects had previously used or purchased them) than the other medicine categories.

Data from the consumer pharmaceutical industry indicates that 91\% of Canadians claim to read the label carefully before using a product for the first time\textsuperscript{19} and appear to be satisfied with this information\textsuperscript{20}. A large majority of Americans also claim to read at least parts of the package on OTCs\textsuperscript{21}. Of those reporting they would re-read labels, 77\% noted this would most likely be when giving the agent to a child or if they hadn’t read the label for some time (70\%).

There are less encouraging results\textsuperscript{22}. Only 40\% of Canadians read about active ingredients, and smaller proportions read about the dosage level (34\%), the symptom treated (26\%), possible side effects (23\%), directions for usage (18\%), and warnings (10\%) when they buy a product for the first time\textsuperscript{23}. American data showed that the proportion of readers of each section were lower\textsuperscript{21}. An important distinction in the latter data, however, is that more respondents would read directions for usage and dosage level when they take a medicine for the first time rather than when buying it for the first time.

Of course, there remains concern that a significant number of people have problems reading\textsuperscript{24,25}. By extension, this raises the issue of numeracy and the ability of the public to work with numbers\textsuperscript{26-32}. In one report, 48 subjects were presented with a cough medicine label and 31 were given a label for antipyretic drops\textsuperscript{12}. Participants were asked to read and interpret manufacturer-supplied written instructions for the target medicine, then calculate the amount to be given to the youngest child in their family. The cough syrup was to be dosed by body weight, while the antipyretic was by age (with a dropper calibrated in mL). Faced with this task, 56.3\% were unable to calculate the appropriate dose of cough medicine; worryingly, eight individuals calculated amounts representing an extreme overdose. Participants had no difficulty in calculating an accurate single dose of the antipyretic, although a tendency to under-medicate was evident.

**PUBLIC IMPRESSIONS OF OTCs**

When a person becomes ill with a minor illness, the propensity to use an OTC will be predicated, in part, on its perceived value. Successful past use will surely lead to future use, whereas a person with little faith in non-prescription medicines (for whatever reason) will probably take a different path. How such agents are viewed by the public is therefore of interest.

It may be expected that public perceptions of these medicines might be linked to experience with prescription agents. For example, Brass suggests that patients who seek medical attention
for an illness may be disappointed with a recommendation to use an OTC, if they expected more sophisticated therapy from an office visit. Reports indicate that consumers perceive prescription and OTC medicines as differing in safety, strength, and effectiveness. It would clearly be of concern if beliefs that OTC medicines were somehow less effective, led to cavalier attitudes and subsequent behavior amongst users. For instance, 5% of Italian subjects noted that some products (like laxatives) were hardly considered to be drugs due to their heavy promotion. For a subset of Americans there was a feeling that some overuse was relatively common; 41% believed a reason for this was that OTCs were too weak to cause any problems. Some years ago, Maiman et al found that mothers might feel they could afford to be less careful when giving OTCs to their child than when giving prescribed medicines.

A nation-wide Canadian survey (2003) found that a majority (84%) believed prescription medicines were very/generally safe, compared to lower numbers seen for OTCs (75%) and natural health products (72%). Others have found a tendency to consider prescription medicines as more powerful (or riskier) than their OTC counterparts. OTC products have also been seen by Canadians as not particularly effective, although there is brand loyalty to those they do see as helpful. These agents were frequently described as weaker, ‘watered-down’ versions of prescription drugs, but generally safe.

In a report of 553 Americans on the acceptability of risk, 75 respondents believed that most OTCs do not have side effects. In other research on risk, Reisenwitz and Wimbish focused on the purchase process, quantifying the perceived risk of OTC purchases for 165 elderly citizens. On a five-point scale of very risky (1) to not at all risky (5), a mean score of 3.7 was established, with 35.8% stating there was no risk at all to them. Conversely, 9.5% of subjects described the process as very risky. Participants were also comfortable during the post-purchase period, for the most part being devoid of regret or anxiety.

Qualitative data from the UK suggests that consumers generally do not consider the risks of OTC use, preferring instead to focus on the benefits. Attention was very much on getting better rather than making evaluations of the different properties of medicines; use was described as very much a mundane activity. The general impression seemed to be that regulatory authorities would have put safeguards in place.

Others have found more respect paid to the use of these medicines. Most hypertensive patients interviewed in Brisbane (Australia) understood that OTCs could interact with their blood pressure medicines (although this was not the case in another report). Industry data in 2001 found that 87% of Americans surveyed agreed that OTC agents were safe when used as directed, while acknowledging the need to be careful in their use. About two-thirds of a British sample felt such medicines were just as effective as those available from a doctor.

Williamson et al found that a sample of people in the UK would welcome more information on prescription medicines and OTCs, with the top three types of information required being similar for both. In this comparison, however, the demand for information on side effects, dosage, and drug interactions appeared to be lower for OTCs than prescribed agents. Bradley
et al asked British patients (attending medical offices) to respond to a battery of questions concerning OTCs\(^2\). Results suggest relatively strong agreement that such agents should be used with care and that a person should take medicines only when necessary.

During any purchase process, marketers have determined that consumers who demonstrate a high level of involvement in a purchase seek more information about the product, take a longer time to make that decision, evaluate product alternatives, and perceive brand differences. Low involvement purchases, on the other hand, hold much less significance for the consumer and fewer of the above listed behaviours are seen. Exploring this, Gore et al found those making OTC medicine purchases exhibited moderately high involvement\(^57\). They suggested that this might lead to safe and effective use of such medicines. Conversely, other researchers found little support for the notion that OTC purchases were high involvement (in this case, for the elderly)\(^49\). Many respondents could not think of an OTC category that was important to them, and those that did not indicate a high level of involvement in the number of sources consulted, perceived risk, or post-purchase anxiety.

**DISCUSSION**

Over a series of three articles, factors that may be influential in effective self-medication have been examined.

The question ‘Can the public can self-medicate effectively?’ is asked at a time when the complexity of daily life may be at an all-time high, while the patience for dealing with complexity might be correspondingly low. We live in a marketplace where many consumers readily balk at tasks that deviate from simple. Those who buy computers and other electronic devices now demand the simplest of start-up instructions. Web-page developers know that if ‘surfers’ cannot find what they want on a site within several clicks of a mouse, frustration grows. For others, numeracy skills are suspect. An Associated Press article even noted that bicycle riders feel that ‘anything with gears is complicated.’\(^58\).

At the population extremes there will be individuals who are completely capable or completely incapable of self medication, but for the remaining majority, a continuum of ability is likely. Abilities may also change with each circumstance, with a person perhaps adept at headache management (as an example), but less capable in managing athlete’s foot. There are also limits imposed by the availability of non-prescription medicines on what the individual is expected to be able to manage unsupervised. Additionally, there will always be those that choose not to read labeling or deliberately misuse and abuse agents\(^59,60\).

However several reports (in different therapeutic areas) suggest that many users can and do self-medicate appropriately\(^61-76\). In this context a suitable assessment of when to seek professional help is also important, and again there is some evidence to suggest that appropriate decisions are made\(^77-82\).

Nonetheless, it would be unwise to expect the average patient to have the same clinical judgment as health care professionals, even for so-called minor ailments. Even physicians may
have difficulty in differentiating viral eye infections from bacterial causes83 or the etiology of vaginitis84, conditions that have OTC treatment options in several countries. Badcott noted that while a patient can be considered an expert on a personal illness (and certainly how that illness affects their life), there is a risk in confusing experience with expertise85. Experience limited to one’s own ailments generally does not lead to knowledge needed for reliable clinical treatment. Others have also made a similar distinction between familiarity and expertise18,86.

It is also clear that pharmacists (and other health care professionals) should not lessen vigilance in monitoring OTC product use. Public education campaigns will have to continue. Unfortunately, at the level of an individual patient, it is difficult to identify those in need of extra attention within the typical pharmacy. Pharmacists must therefore walk a fine line: between being aware of consumer need as it arises, but not being overly paternalistic. This reality reflects the position taken some years ago by European public health experts in discussing the abuse of medicines in relation to self-medication87:

The right of an individual to self-medicate may be approached from the point of view that the average individual is a reasonable being, acting as a rule with common sense. A historical perspective has relevance, where during the period of time to the mid-nineteenth century, when opium was still on sale and promoted in every pharmacy free of prescription, the extent of abuse was in fact very small, despite the fact that the population was less well-educated than that of the present day.

Even in a society which lays much emphasis on individual freedom, a somewhat paternalistic approach to the use of medicines is unavoidable if the public is to be adequately protected against the dangers which it cannot foresee or estimate, but a reasonable degree of freedom must be left to select and use those simple medicines, the manner of use and risks of which can be adequately defined and explained.

Many reports have discussed the implications of OTC availability of medicines and the public’s ability to self-medicate33,88-91. The OTC industry notes that consumers have moved from passive acceptance of the advice of health care professionals to recognizing their responsibility to actively participate in maintaining health and treating disease92,93. On the other hand, Wilkie felt that many people may choose medicine “by luck and by the appeal of advertising”94 and this tends to typify the stance of many pharmacy authors.

While there are indeed concerns about the public’s ability to self-medicate, many patients are actually engaged in high-order monitoring of more complex medical conditions. This dates back at least to advances in self-testing measures for diabetes. Those with this condition also count carbohydrates to help control blood sugar. Research into patients’ ability to self-manage chronic illness is now a very rich area of activity, with self management now prevalent in asthma for both adults95 and children96, and in arthritis97, cardiovascular health98, urinary symptoms99, anti-coagulation100, and certainly others. Women have been shown adept at obtaining and assessing vaginal pH readings used in the self-diagnosis of vaginitis101,102.

However patients need to be trained in order to accomplish this level of involvement in disease management. Not all patients will be willing103 nor perhaps capable of this level of undertaking104,105. More needs to be done in understanding these limits106,108 and more
understanding is needed of health literacy and its implications for greater self management\textsuperscript{109,110}. Whether people of today know more about medicines or not, the potential to self-medicate safely has surely never been better. Hundreds of self-help brochures are available to aid the consumer. Pharmacists and physicians continue to provide support. The Internet now has many portals for minor illness information and phone-in lines (either stand-alone or associated with a product) have become commonplace. Although provision of information on OTC medicines has expanded enormously, newly switched agents are often more potent and aimed at more complex diseases. Accordingly, the public must resist considering these products as low-involvement purchases, \textit{de-medicinized} to the point of buying something akin to breakfast cereal. A healthy perception of the true nature of these medicines is crucial. Currently, many pharmacists have questioned whether this is indeed the case\textsuperscript{21,111-116}.

Recognition of medicine risks may not be universal: while some Americans claim they would accept considerable risk in order to gain greater access to new agents\textsuperscript{48}, other respondents (in this case, Canadians) were quite risk adverse when using medicines for something like a cold\textsuperscript{22}. Sixty percent of the latter chose \textit{one in a million} or \textit{no risk at all} as the level of risk they would consider acceptable. This is unrealistic for any medicine, but provides important insight into the expectations of some consumers for medicine use.

Perspective is of course important. Consider a hypothetical situation where approximately half of consumers surveyed (over a one-year period) used three to five OTC agents, with around 10\% using six or more. Health care workers might be alarmed by that extent of use. However, six items in one year might simply mean a muscle relaxant and topical analgesic used in January (after a slip on ice), using acetaminophen several times for headaches, a decongestant for three days in November for a cold, an eyewash in June on particularly dusty days, and a quick shot of antacid after big family suppers during various holidays. Depending on the data collection approach, adding a dry skin lotion and a multivitamin gets the number up to eight agents, all conceivably being used appropriately. While information of this type must continue to get our attention, the raw numbers on their own do not relate well to judgments of safe use. Research to determine how often and in what circumstances safe use is actually exceeded will continue to be welcomed.

\textbf{Conflict of Interests:} None.

\textbf{Correspondence to:} Jeff Taylor: jeff.taylor@usask.ca.

\textbf{REFERENCES}


24. Sticht TG. How many low literate adults are there in Canada, the United States, and United Kingdom? Should the IALS estimates be revised? Applied Behavioral and Cognitive Sciences Inc: Research Note #1, March 5, 1999.


33. Brass EP. Changing the status of drugs from prescription to over-the-counter availability. NEJM 2001; 345: 810-16.


91. Bradley CP and Bond C. Increasing the number of drugs available over the counter: Arguments for and against. Br J Gen Pract. 1995; 45: 553-6.


