Promoting Safe and Effective Use of OTC Medications: CHPA-GSA National Summit

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Research on the ways older people use prescription medications (Rx) is a mainstay of the gerontological literature because use of Rx medications is common, and appropriate use is central to effective management of chronic disease. But older adults are also major consumers of over-the-counter (OTC) medications, which can be equally significant for self-care. Nearly half of older adults aged 75–85, for example, are regular users of an OTC product. Ensuring that consumers safely and effectively use OTC products is critical in order to minimize potential drug–drug interactions and unintentional misuse. Yet we know surprisingly little about the ways older adults select OTC medications and decide when to start or stop use, how older people actually take these medications, or how involved clinicians and family members are in older adult OTC behavior. Research in this area is critical for developing interventions to help ensure safe and appropriate OTC use. For this reason, The Gerontological Society of America (GSA), in partnership with the Consumer Healthcare Products Association (CHPA), convened a summit of experts to set an agenda for research in OTC behaviors among older adults. The panel suggested a need for research in 5 key areas: Health literacy and OTC behavior, decision making and OTC use, the role of clinicians in OTC medication behavior, older adult OTC behavior and family care, and technologies to promote optimal use of OTC medications.

Key words: Medications, Prescriptions, OTC drugs, Pharmacology, Psychology of aging, Psychiatry, Physician–patient communication, Relationships, Preventive medicine, Care, Services, Public policy

Introduction

Older adults aged 65 and older comprise 13% of the population but account for 34% of prescription (Rx) and 30% of nonprescription over-the-counter
(OTC) medication use in the United States (National Center for Patient Information and Education, n.d.). Regular use of OTC medications among older adults in the National Social life, Aging, and Health Project (NSHAP) was estimated to be as high as 47.2% in people aged 75–85 (Qato et al., 2008). Based on the nationally representative NSHAP, 4% of U.S. older adults’ medication regimens include a potentially major drug–drug interaction, and half of these involve a nonprescription medication.

Although Rx behavior is a mainstay of geriatric research, OTC behavior has not received the attention it deserves. We know surprisingly little about the ways older adults select OTC medications and decide when to start or stop use, how older people actually use the medications, or how involved clinicians and family members are in older adult OTC behavior. This effort is critical for developing interventions to help ensure safe and appropriate OTC use.

The Gerontological Society of America (GSA), in partnership with the Consumer Healthcare Products Association (CHPA), called together experts from academia, industry, government, and medical practice to synthesize existing research regarding OTC use by older adults in order to prioritize research needs. Areas of focus included OTC medication literacy, the perceptual and cognitive basis of OTC medication decision making, the interface between clinical and family care in OTC use, and technologies to support optimal OTC medication behavior.

The experts convened for a Summit in Washington, DC, on April 9 and 10, 2013. Speakers included academicians, clinicians, geriatricians, psychologists, and entrepreneurs. Participants included experts in the fields of cognitive science, health services research, nursing, packaging, preventive medicine, social science, pharmacy, and pharmacology, as well as professionals from pharmaceutical companies, NIH, and the U.S. Food and Drug Administration (FDA). Information about the speakers, the participants, and the working group that organized the Summit is included in the Supplementary Appendix.

Despite their prevalence, use of dietary supplements (with or without botanical products) and “nutraceuticals” and “medicinal foods” were excluded from Panel review. (In fact, the terms “nutraceutical” and “medicinal food” have no regulatory definition in the United States.) While recognizing the importance of such products for self-care among older adults, the Panel opted for a narrower focus on OTC medicines due to the great potential for innovations to improve safe and effective OTC use. Also, the FDA places supplements under a different set of regulations, again suggesting that separation of the two domains is reasonable. For these reasons, the Panel excluded supplements from its review.

**OTC Medications**

The FDA Center for Drug Evaluation and Research (CDER) regulates both OTC and prescription medications. These medications are defined by the Federal Food Drug and Cosmetic Act as “articles intended for use in the diagnosis, cure, mitigation, treatment, or prevention of disease” (FD&C Act, sec. 201(g)(1); Food and Drug Administration, 2013). OTC drugs are distinguished from prescription drugs only in that they are defined as safe and effective for use by the general public without a physician’s prescription.

There are more than 80 therapeutic categories of OTC drugs. These are typically grouped into 12 broad therapeutic classes: Analgesics and antipyretics; cold, cough, and allergy products; nighttime sleep aids; gastrointestinal products; dermatological products; other topical products (including antifungals and otics); ophthalmic products; oral health care products; menstrual products; nicotine replacement products; weight loss aids; and contraceptives (Schneider et al., 2010). Industry estimates suggest extensive use: 35% of adult Americans use OTC medications on a regular basis (Deloitte Center for Health Solutions, 2010), 79% of consumers report taking an OTC med in the past year (Booz & Co., & Consumer Health Products Association, 2012), and U.S. consumers spent $32 billion on OTC products in 2010 (Euromonitor International, 2011). One study suggests that availability of OTC medicine in the seven most highly used OTC classes (allergy, analgesics, antifungals, cough/cold/flu, lower and upper gastrointestinal, and medicated skin products) saves the U.S. health care system $102 billion annually because the products allow consumers effective self-treatment of many commonly occurring health conditions (Booz & Co., & Consumer Healthcare Products Association, 2012).

**Older Adults’ Use of OTC Medications**

Older adults are major OTC consumers. As mentioned earlier, the National Health and Social Life Survey (NSHAP) examined the prevalence of both OTC and Rx drug use among adults aged 57 through 85 years in the past 12 months. The survey determined that 81% of participants took at least one Rx medication (29% reported concurrent use of five or more) and 42% used at least one OTC medication. Of those taking an Rx medication,
46% reported concurrent use of an OTC medication (Qato et al., 2008). Dietary supplements were reported by 49% in this population-based sample.

Research examining prescription drug use suggests that older adults are two to seven times more likely to experience an adverse drug reaction than younger adults, and that adults aged 65 and older account for 61.5% of emergency department visits associated with adverse drug reactions (Substance Abuse and Mental Health Services Administration, 2011). A central question is whether improper use of OTC medications, such as unintentional overdosing, carries similar risks.

Factors Influencing OTC Medication Use Among Older Adults

Older adults, like other age groups, use OTC medications to manage common self-diagnosable symptoms, such as pain, diarrhea, coughs, or fever. The common use of these medications suggests that OTC medications are an important component of self-care. Indeed, qualitative studies suggest that patients may selectively adhere to medication regimens (and even alter regimens according to perceived symptoms) as a way of exerting control over chronic conditions (Hunt, Kreiner, & Brody, 2012).

OTC medication use as a form of self-care is also affected by many other factors, including social, psychological, and economic issues, as well as family support. While recognizing the larger context of OTC use, the Panel narrowed its focus on OTC behaviors to factors affecting selection, dosing, and adherence. Even this substantial delimitation of the field requires multiple perspectives from behavioral and social science, cognitive psychology, human factors research, clinical medicine, and neuroscience.

Information on factors affecting selection, dosing, and adherence have mostly come from studies conducted with community pharmacists, who clearly play a key role in older adults’ use of OTC medications. Eighty percent of Americans report they follow pharmacists’ recommendations for purchasing particular OTC medications (National Center for Patient Information and Education, 2003). Community pharmacists are trained to advise patients on medication issues but also make use of implicit mental models for safeguarding older adults from inappropriate use of OTC medications. These implicit models may affect pharmacist recommendations. For example, in responding to a vignette about an older couple asking about an OTC sleep aid, pharmacists were likely to seek a common set of information in a particular sequence. Asking about current medications and if the patient had seen a physician preceded questions about features of the sleep problem (Chui, Stone, Martin, Croes, & Thorpe, 2013). Such an approach may lead to a recommendation for pharmacotherapy rather than behavioral therapy, for example. A related study showed that many OTC drug-related problems identified by pharmacists involve patient attempts to self-medicate when physician consultation would be more appropriate (Eickhoff, Hammerlein, Griese, & Schulz, 2012).

Less is known about consumer factors governing selection, dosing, and adherence. For this reason the workgroup further narrowed its scope mostly to patient-level factors, recognizing, however, that patient decisions to use a product depend not just on features of the individual (such as perceptual, cognitive, and sensory competencies related to identifying symptoms and choosing an OTC medication), but also features of medications (such as packaging) and the context in which decisions are made (such as contact with physicians or pharmacists, availability of family members, or access to technologies that might guide choices or support adherence).

Accordingly, workgroup panels took up the challenge of first identifying features of health behavior relevant to OTC choices. Two panels were convened, one covering health literacy relevant to OTC medication use and the other covering information processing relevant to OTC product selection and recognition of potential risks associated with use. The third and fourth panels assessed the contexts of OTC use, one assessing clinician influences and the other the role of family caregivers. A final panel explored new technologies available to guide appropriate use of OTC medications.

Health Literacy and OTC Behavior

What is Known

Low health literacy is associated with medical errors and adverse events, which in turn are responsible for poor outcomes in chronic disease care. The Institute of Medicine (IOM) defines health literacy as “the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions” (Institute of Medicine, 2004). The workgroup considered the effects of low health literacy on OTC behaviors.

The 2003 National Assessment of Adult Literacy (NAAL) was the first large-scale nationally
representative assessment of health literacy in the United States. Health literacy was defined as the ability to read and understand written health-related information encountered in everyday life. Using performance-based tests of comprehension, the survey found that adults aged 65 and older had lower average health literacy scores than younger adults. On a scale of 1 to 500, people aged 25–39 had the highest health literacy, a mean score of 256. The mean health literacy score for people aged 65 and older was 214 (Kutner, Greenberg, Jin, & Paulsen, 2006). Overall, 36% of adults were deemed to have basic or below basic health literacy, whereas 59% of people aged more than 65 years scored at these low levels.

Low health literacy is typically considered important because it interferes with communication of important health information. In this scenario, the challenge is to present information in ways that enable patients to make correct decisions. But cognitive investigations suggest this approach is overly narrow. Effective presentation requires that we also understand the ways people process health information.

One relevant study in this regard is the Health Literacy and Cognitive Function among Older Adults (LitCog) study, which assessed patients aged 55–74 in primary care. This study determined that one in five of these older primary care patients lacked skills required to manage everyday tasks relevant for health care decisions, including effective use of medications (Wolf, Curtis, et al., 2012). People more than 60 years, those with less than high school education and racial/ethnic minorities, and those with multiple morbidities were at greatest risk for low health literacy. Research has also shown that physicians, registered nurses, and pharmacists cannot easily identify these at-risk patients.

Poorer health literacy affects key competencies required for safe and effective use of OTC medications. These include the following:

1. Appropriate symptom recognition. Do patients understand their conditions?
2. Appropriate self-management. Why have patients decided to seek relief for their symptoms on their own rather than seeking clinician care?
3. Knowledge of active ingredients. In choosing OTC medications do people look beyond symptom indications to active ingredients?
4. Appropriate dosing. Do people follow dosing guidelines or do they instead consider OTC medications in a use-as-needed (PRN) framework?
5. Attention to concomitant use warnings. Do people heed warnings of unintentional overdose and avoid products with the same active ingredients (as in the case of acetaminophen)?
6. Understanding when to stop use. Do patients heed the maximum daily dose or duration of use warnings?

Self-treating patients face challenges of choosing among diverse products and ingredients, which may be compounded by low health literacy. Absent a person’s choice to seek out professional advice, there may be no learned intermediary, such as a pharmacist or clinician, to help with such challenges. Often patients rely on their prior experience with a particular drug. Without guidance in product selection, patients may unintentionally misuse OTC medications.

The LitCog study found that unintentional medication misuse takes different forms (Wolf, King, et al., 2012): (a) 24% of adults took more than the recommended maximum dose of an OTC product; (b) about a third of people erred with timing, for example, taking another dose too soon; and (c) 46% used more than one product with the same active ingredients. Individuals do not routinely examine product label information, and in one study of OTC pain relievers, more than half of consumers were unaware of the active ingredient (King et al., 2011). People may not realize that two OTC medications, one for cough and one for congestion, contain the same active ingredient. If they use the two products, they risk an unintentional overdose (Wolf, King, et al., 2012).

Lack of counseling and miscommunication with physicians also contribute to the confusion. Although 86% of patients believe physicians are aware of their OTC medications, only 46% report OTC medication use to their physicians (Serper et al., 2013). Interventions to encourage appropriate counseling are needed to encourage physicians, pharmacists, or other health care providers to talk to consumers about OTC medication use.

**Needed Research**

The Panel identified the following research questions as critical for a better understanding of health literacy and its role in OTC behaviors:

- Would marketing efforts that more strongly stressed active ingredients, as opposed to
symptom relief alone, reduce unintentional misuse in low-literate consumers?
• What kind of redesign of products and labeling will most effectively ensure safe OTC medication use in low-literate consumers?

Decision Making and OTC Medications Among Older Adults

What is Known

Research rarely addresses the actual process people use when making a decision to purchase an OTC medicine, that is, what steps people go through, whether they consider all pertinent options, and how much weight is given to each factor. For example, much of the existing literature demonstrates that older adults are slower in processing medication information. Reasons for this slowness are unclear. Is it a sensory deficit, perhaps inability to see the small print on the label? Is it inability to comprehend medication labels? Or are older adults more thoughtful about their decisions, going through more steps and recalling a greater number of prior experiences than their younger counterparts before making a decision?

One productive approach to these questions identified by the workgroup involves eye tracking. Eye tracking studies suggest differences between younger and older consumers in attending to medication labeling. Specifically, older consumers are less active in their search for information, creating a situation in which they are less likely to view warning labels placed vertically on prescription vials (Sundar, Becker, Bello, & Bix, 2012). In this study, older consumers were less likely than younger people to recall warning information on vials. However, when recall results were conditioned on whether or not the warning had been viewed (as measured with eye tracking), age-related differences in recall were no longer apparent. This highlights the importance of recognizing where failures in information processing occur and how failures at different points in information processing may affect safe and effective use of OTC products.

More generally, better understanding of decision making in OTC selection and use requires that we understand how older consumers, who have different perceptual, cognitive, and motor abilities than younger people, process information. The workgroup panel identified an important model for identifying where breakdowns in information processing occur. This is the Human Packaging Interaction Model proposed by de la Fuente and Bix (2011), as shown in Figure 1. The model adapts and combines Usability Theory (Shackel, 2009) with a serialized information processing model (DeJoy, 1991; Card, Moran, & Newell, 1983). It suggests that safe and effective OTC use depends on much more than features of the user (such as perceptual, cognitive, and sensory competencies). Task demands, such as following instructions or identifying a product, and features of packaging also matter, as does the context in which user, task, and package interact.

In this model, five stages of information processing must be accomplished for effective completion of a medication decision task. In thinking about effective and safe OTC use, all five components will need to be considered because a breakdown can occur at any point, and older adults may be more vulnerable to failures in some components than others.

Consider, for example, a user with an NSAID sensitivity who is considering taking Ibuprofen.

- The person must be exposed to the information that Ibuprofen is an NSAID; this exposure can take varied forms and may be active (e.g., the person seeks information on the Internet or through a pharmacy consult) or passive (e.g., the product is labeled with the fact that those with NSAID sensitivities should not take it).
- The person must perceive the information; if the consumer fails to turn the package to see the NSAID warning, the warning cannot be processed.

• In the case of an OTC label, the consumer must *encode* the sensitivity warning (that is, convert the external signal to an internal one).

• Consumers must *comprehend* the information that is conveyed in the labeling. If it is at a reading level that is beyond them, in a language that they do not understand, or uses a symbol that creates confusion, consumers will fail or only partly comprehend information.

• Finally, the consumer must be *moved to take the appropriate action* (i.e., not taking the product).

All five stages of information processing must be accomplished for effective medication selection and use, and different interventions may be needed to remediate potential failures at each point in information processing.

**Needed Research**

The workgroup identified the following research questions as most critical for a better understanding of decision making relevant to OTC behaviors:

• What experimental paradigms for search and choice tasks involving drug labels will allow the best view of the OTC decision-making process?

• What packaging innovations are most likely to lead consumers to encode key information from warning labels?

**The Role of Clinicians in OTC Medication Behavior**

**What is Known**

Younger people are more likely to rely on their friends or family for information about OTC medications. Older adults are more likely to seek advice from a learned intermediary, such as a pharmacist or other health care provider. When examining the influence of others on OTC medication use, it is important to differentiate the perspectives of professional clinicians, patients, and family caregivers (*Stephens & Johnson, 2000*).

Consumers’ health care decisions have become more complex in recent decades due to the amount of information available to them, including direct-to-consumer marketing and the expansion of health information available on the Internet. Thus, the urgency to understand how patients approach medication use and self-care has grown.

Clinicians can play a major role in promoting safe and effective OTC medication use among older adults. However, health care providers require a better understanding of OTC behavior if they are to assist their patients effectively. They need to understand patient reasoning about health and illness, especially “commonsense” models (*Meyer, Leventhal, & Gutman, 1985*). Patients note deviations in well-being and use trial-and-error approaches to reduce the disruptiveness of symptoms. Their reasoning about symptoms appears to be driven mostly by models of acute illness, which may not be appropriate for long-term treatment of chronic conditions.

Attitudes toward medications also influence OTC choices. These attitudes range from recognition of the value of a medicine to worries about long-term effects and dependence. Not surprisingly, adherence to treatment regimens is highest among those who really think the treatment is necessary (*Horne, 2011*). By the same token, patients stop taking medications when they feel better. This commonsense reasoning leads people to stop antibiotics too soon but also to ineffective use of antihypertensive medications in treating chronic disease. Patients who claim they can tell when their blood pressure is elevated are less likely to adhere to antihypertensive therapies (*Leventhal et al., 2012*).

Clinicians must ask questions that will elicit, address, and, if possible, change patients’ misperceptions of OTC medications. One productive approach is to recognize the commonsense rationale for the therapy, address concerns about potential adverse effects, and make the regimen as convenient and easy to follow as possible (*Phillips, Leventhal, & Leventhal, 2012*).

**Needed Research**

The Panel identified the following research questions as most critical for a better understanding of clinician behaviors relevant to safe and effective OTC use:

• Will current interventions that assist clinicians in improving the safety and effectiveness of Rx medications work as well for OTC medications?

• What training solutions are required to help clinicians elicit patients’ use of OTC medications? How can this information make its way into the patient electronic health record? What policy changes may be required to make sure OTC medications are included in these medical records?

• What approaches will be most productive to steer patients to credible sources of information about
chronic conditions and the limits of self-care using OTC medications? How can patients be encouraged to inform clinicians about OTC use?

**Older Adult OTC Behavior and Family Care**

What is Known

Between 80% and 90% of long-term care is provided by lay caregivers (Coleman & Boul, 2003; Coleman & Pandya, 2002; Gitlin & Wolff, 2011). This group includes not only relatives but also friends or neighbors who provide some form of assistance to older adults. A 2009 study from the National Alliance for Caregiving and the American Association of Retired Persons (AARP) estimated a total of 66 million caregivers in the United States (National Alliance of Caregivers, 2009). Older adults receiving unpaid care span the spectrum of chronic conditions.

Medication assistance is part of the vast array of family care tasks. It may occur episodically, as in care transitions following hospital discharge, or for long periods of caregiving support in the community. Lay caregivers also continue to provide support once older adults transition to long-term care facilities. Medication-related care tasks range from sporadic monitoring of medications to increasingly intensive monitoring of symptoms and calibration of dosing in response to a changing clinical picture (Reinhard, Levine, & Samis, 2012). Lay caregivers are also involved in collecting prescriptions from the hospital or pharmacy, buying OTC medications and deciding on dosage and timing, assisting in administering medications (including opening containers), and managing side effects (Francis, Smith, Gray, & Graffy, 2002).

Few empirical studies address OTC medication management by lay caregivers. Research suggests that families have very little knowledge about medication use, and that caregivers report greater stress as medication management needs increase. Among caregivers of people with dementia, 54% are actively involved in the daily management of medications. In later stages of the disease, the number rises to more than 90% (Bradford et al., 2011). A limited evidence base suggests that families have poor knowledge of OTC medication side effects and risks.

One recent study examined potentially inappropriate medication use (Rx and OTC) by patients with Alzheimer’s disease. One third of patients were found to be taking at least one inappropriate medication, but 39% of caregivers were themselves taking one or more inappropriate medications (Thorpe, Kennelty, Gellad, & Schulz, 2012). Thus, family involvement in OTC medication use must be examined within the broader context of overall medication management and the complex care tasks and responsibilities that families assume.

Needed Research

The Panel identified the following research questions as most critical for a better understanding of the role of lay caregivers in promoting safe and effective use of OTC medications:

- How can medication management be integrated into available caregiver education?
- How do caregivers decide which OTC products are appropriate for an older person? When do they consult pharmacists as opposed to other sources of information?

**Technology to Promote Optimal Use of OTC Medications**

What is Known

Well-designed, usable technology offers the potential to improve the medication behaviors of older adults. Emerging technologies bring opportunities to promote optimal OTC medication behavior among all patients, including older people. Technology offers clinicians a way to monitor drug-taking behavior and reconcile medications in care transitions.

Technological interventions, such as smartphone applications, can enhance accessibility to relevant information when and where it is needed, provide reminders when medication is due, and alert patients to hazards. For example, smartphone-based systems are now available to aid patient self-management of chronic illnesses through medication reminding, monitoring (e.g., blood pressure and blood glucose), and education (e.g., podcast videos). Older adults have successfully used these applications and report favorable responses to the technology (Mayhorn, & Sterns, 2007; Rogers and Fisk, 2010; Sterns & Collins, 2005; Sterns, Lax, Sterns, Allen, & Hazelet, 2010).

Yet current commercially available technology has shortcomings. It primarily focuses on prescription drug use; connectivity with mobile devices varies; and interface design is poor. Further, for older adults, trends in miniaturization make screens harder to read and buttons and touch screens harder to use. Aside from visual disorders, hearing loss, and cognitive impairment, less well-known changes with age may also make it difficult
for older people to use such technology (Strickler, Lin, Rauh, & Neafsey, 2008). Older adults may have trouble discriminating between colors and have greater difficulty with glare. Changes in tactile ability are also relevant. Consistent with the conceptual model presented earlier (Figure 1), effective technologies must be developed in conjunction with attention to human factors. New systems must be tested for usability by older adults before they are deployed (Lin, Neafsey, & Strickler, 2009). Last but not least, advance effort should be put into determining if older adults will actually use the new technologies (Alicea-Planas, Neafsey, & Anderson, 2011).

One such system that underwent formal usability studies with older adults and primary care providers before deployment was the “Personal Education Program” Next Generation” (PEP-NG), designed for older adults with hypertension. It was delivered on a tablet at the point of care. The touch screen interface featured large targets (e.g., buttons, scrollbars, and interactive clock face) and colors, as well as contrast and animation features preferred by older users. The tablet was housed on a stand that could be adjusted for height and viewing angle. The PEP-NG was successful in capturing the OTC self-medication practices of older adults with hypertension and delivering tailored, interactive education in the primary care office. In a 4-month randomized trial, patients using the PEP-NG demonstrated significant increases in OTC self-medication knowledge and self-efficacy scores and improved self-medication behaviors related to OTC pain relievers and antihypertensives compared with patients receiving usual care (Neafsey et al., 2011).

Technological solutions that promote fully integrated patient health records may also promote more effective use of OTC medications. Systems that combine data from various sources (e.g., electronic health records and pharmacy claims) and also add a structured patient interview to elicit information about patient self-medication behaviors, including OTC agents, can facilitate medication reconciliation at the point of care. Once data are aggregated and validated, evidence-based rules (such as the Beers Criteria; American Geriatrics Society, 2012) can identify risk and provide guidance to the health care team as they initiate medication therapy management. The most successful systems will be those that solve a health care “workflow” problem by enabling prior capture of patient medication taking information via a structured interview at home (online, alone, or with caregivers) or via office, telephone, or home interviews conducted by providers with lower levels of licensure (e.g., medical assistants and home care nurses).

**Needed Research**

The Panel identified the following research questions as most critical for a better understanding of the role of new technologies in promoting safe and effective OTC use:

- How can electronic health records be enhanced to include OTC medications? Often the most important piece of information “how the patient is using his or her prescription drugs as well as any other OTC medications or supplements” is missing.
- Do smartphone or other Internet applications promote safe and effective OTC medication use? Preliminary studies are promising, but there are few head-to-head tests of alternative systems.

**Conclusions and Policy Action Steps**

The GSA-CHPA workgroup could not cover all areas relevant for promoting safe and effective OTC medication use. For example, marketing was not a direct focus of the workgroup. Clearly, direct-to-consumer marketing and advertising play a central role in choice of OTC medications. A more complete treatment of the topic would also have to examine the interplay of prescription and OTC medications, for example, when older people substitute one for the other (Albert, Musa, Kwoh, Hanlon, & Silverman, 2008). Likewise, the workgroup did not examine contextual factors, such as economic trends or access, which might constrain medication use. Finally, given the paucity of research on OTC behaviors, the workgroup relied in some cases on findings from research involving prescription drug use. Qualitative and ethnographic studies may be useful for understanding differences in Rx and OTC medication behaviors.

Instead, the workgroup took on the more limited challenge of examining factors affecting OTC medication selection, dosing, and adherence. Each of the five panels proposed key questions to set an agenda for research in OTC behaviors. Using these questions to inform policy, the workgroup stressed the following efforts:
Health Literacy and OTC Behavior

How can we refocus lay understanding of OTC medications to stress active ingredients rather than symptom relief? Or short of this change, how can we make active ingredients more salient to consumers in Drug Facts labeling? What changes in marketing of OTC products would such a change entail?

Decision Making and OTC Medications among Older Adults

What organization of OTC information in the Drug Facts label best allows older adults to appreciate risks and appropriate use? Visual displays, packaging, readability, and chunking of information will all need to be considered.

The Role of Clinicians in OTC Medication Behavior

What are the best ways to get clinicians to elicit OTC medication use and ensure that this information is properly recorded in the patient health record? How can current pharmacist medication therapy review be extended to cover OTC use?

Older Adult OTC Behavior and Family Care

What sorts of patient and caregiver clinical education will best support safe and effective OTC medication use? Effective education geared to caregiving may also improve caregiver OTC literacy.

Technology to Promote Optimal Use of OTC Medications

How can human factors be more effectively incorporated in the design of automated medication reminders or point-of-use education? How can we appropriately modify policy factors that constrain adequate integration of OTC medication data in the patient electronic health record?

Funding Priorities

Finally, the GSA-CHPA OTC Behavior workgroup as a whole was asked to consider funding initiatives that could push this research agenda forward. The workgroup endorsed the following funding initiatives:

1. An NIH request for funding in the area of OTC medication behaviors and aging;
2. Funding to support publication of papers investigating OTC medication use in appropriate gerontology journals (supplements or special issue);
3. Funding to add questions on OTC medication use and behavior to ongoing national surveys;
4. CMS or FDA funding, perhaps in a partnership from industry, to support research on optimal labeling of OTC medications.

With the increasing emphasis on self-care and patient empowerment in health decision making, it is time now for gerontologists to recognize the centrality of OTC medication behavior and to develop appropriate interdisciplinary teams to support safe and effective OTC use in older adults.

Supplementary Material

Supplementary material can be found at: http://gerontologist.oxfordjournals.org.

References


