Consumer habits and interests regarding non-prescription medications in Hungary

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Purpose. Patients increasingly use over-the-counter medicines for self-treatment but such products can be misused and/or abused. The primary aim of the present study is to survey the relationship between pharmacists and self-medication, to give an overview of their opinions on advertisements of non-prescription drugs and to evaluate the knowledge of and familiarity with medicines held by individuals purchasing them for self-treatment.

Methods. A marketing research study of non-prescription drugs in multiple pharmacies between March and July 2008 was conducted. A total of 2000 questionnaires were handed out, of which 1486 were evaluated. Statistical analysis was performed using SPSS 13.0 software.

Results. The majority of participants (72.5%) visited a community pharmacy at least once per month. Half of the respondents reported taking medications regularly. Forty per cent of those surveyed consult a qualified professional about their decision before buying non-prescription medications. Forty-four per cent of respondents reported asking pharmacists about the effects of non-prescription medications.

Conclusion. This survey revealed that the general public has a high level of awareness concerning the abuse potential of over-the-counter medicines. Health care professionals should seek to understand and respect patients’ choices to assure optimal care. Pharmacists could be more proactive in the management of inappropriate over-the-counter drug use.

Keywords. Communication skills, consultation, health informatics, pharmacy, qualitative research.

Introduction

In recent years, there has been a trend towards increased self-medication with non-prescription drugs, which are available in pharmacies and retail outlets. At the same time, more products have been deregulated for purchase without a prescription. Self-medication has advantages for health care systems as it facilitates better use of pharmacists’ clinical skills, increases access to medication and may contribute to reducing the prescription drug costs that are associated with publicly funded health programmes.

However, the increased availability of non-prescription medicines may encourage patients to seek a drug treatment for every ailment. Furthermore, the use of such products may delay or mask the diagnosis of serious illness. With self-treatment, there is an increased risk of adverse effects or drug interactions and the potential for delay in seeking appropriate medical attention. There is also the potential for misuse and abuse of such products.

There has been relatively little systematic research on this topic, partly due to the perception that misuse and abuse of over-the-counter (OTC) drugs are not as problematic as with other types of drugs. Misuse is defined as using an OTC product for a legitimate medical reason but in higher doses or for a longer period than recommended (for example taking more of a painkiller than recommended to treat a headache). Abuse is the non-medical use of OTC drugs to experience a ‘high’ or lose weight. Despite receiving intensive training in medication management, pharmacists are still on the fringes of the primary health care team and are often seen more as shopkeepers than health professionals. They have limited opportunities to see patients in a primary care setting as part of a practice team. Direct contact with patients is brief and impromptu, with insufficient time for detailed private consultation. Most consultations last 1–3 minutes. The presence of a private consulting area in the pharmacy does not increase the number of consultations, although their length is increased slightly.

Pharmaceutical advertising has a great impact on patients’ use of OTC medications. The key element of advertisements is the brand name of the product; information concerning its application is generally
limited to an instruction to seek pharmacists’ advice. Pharmaceutical companies would like to improve the advertising of their products, providing adequate patient information while referring to pharmacists for specific recommendations. However, to date, their efforts have not brought about the desired results. Doctors and pharmacists believe that advertisements with short texts cannot provide exact adequate information that would lead to confidence in choosing the right products. Consequently, efforts are required from both the industry and the pharmacists to improve advertisement quality. The hope is that all participants will realize that health is a business and that prevention is cheaper than the treatment of an existing problem.

Advertisements, due to their short character, approach the problem from a single point of view; they operate with a simple attractive advertising slogan (e.g. ‘fast-acting’). As a result, individuals often base their decisions on these marketing promises rather than any real medical understanding. The lack of sufficient information prior to self-medication can lead to delayed evaluation by a health care professional, misunderstanding of the true health problem and possible serious health effects.

According to health communication researchers, the ability of doctors and pharmacists to effectively persuade patients to make appropriate choices is dependent upon helping the patient understand and accept the diagnosis and the necessity of therapeutic processes and on how well the patient remembers the advice and recommendations of the doctor or pharmacist. Readiness to cooperate with guidelines set forth by health professionals is highly variable among patients. It is shaped by their attitudes towards health and illness, their upbringing and the health care culture in which they were raised and in which they presently live. Individual lifestyles and life situations also have a great influence.

The primary aim of the present study was to survey the self-reported use of OTC medicines and the understanding of the abuse potential of OTC medicines among people who visit a pharmacy.

Methods
This public opinion survey was administered using a structured interview technique. The target sample size was 2000. The questionnaire consisted of 25 questions and was piloted in a small sample of the general public (n = 50); these data were not included in the final analysis. The survey was conducted in Hungarian, and the survey and results have been translated into English.

All interviews were conducted in pharmacies in Budapest or in provincial towns (25 study sites in total) representative of different geographical areas within Hungary. The study took place between March and July 2008. This ensured that interviewers visited each pharmacy on different weekdays, thereby encountering a wide cross section of the community. Members of the public who appeared to be 16 years of age or older were approached at random and asked to participate. Participants were informed that the questionnaire was about non-prescription medicines and researchers wore badges that identified them as researchers from Semmelweis University Budapest. Two researchers who were trained with regard to interviewing skills and questionnaire administration conducted the interviews, which lasted from 10 to 15 minutes.

Responses were coded and entered into SPSS for Windows, version 13, for statistical analysis. Chi-square and Fisher exact tests were used to determine significant differences between groups (P < 0.05). In a few cases, participants failed to answer every question, resulting in missing data. Missing data were not estimated or used in analyses.

Results

Patient demographic data
We received 1486 evaluable and 65 non-evaluable questionnaires; therefore, almost all the respondents (75.0%) gave valuable answers (Table 1). These demographic data adequately represent the average Hungarian population. Men and women comprised 38.2% and 61.8% of respondents, respectively. Based on this distribution, it can be concluded that women go to pharmacies more frequently than males. A total of 900 participants were employed, 446 were pensioners, 14 were unemployed, 74 were students and 52 were on maternity leave.

Patient contact with pharmacies
Almost three-quarters of participants (72.5%) reported visiting the pharmacy at least once per month. Almost 1100 (n = 1127; 75.8%) reported always or often using the same pharmacy, with the main reason being to obtain a prescription medication. Only 9.2% of interviewees visited a pharmacy primarily to purchase non-prescription medications. There was no

<table>
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<th>Age, years</th>
<th>%</th>
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<td>&gt;=65</td>
<td>18.25</td>
<td>272</td>
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| Table 1 Patient demographic data |
gender-based difference with regard to the purchase of non-prescription medications ($P > 0.05$). Just over 1 in every 10 participants (13.5%) indicated that they would seek a pharmacist’s advice if they had no time to wait for a doctor appointment.

**Habits of medication use**
The primary reason for the pharmacy visit was to obtain a prescription medication (71.0%). Only 29.0% of interviewees visited a pharmacy primarily to purchase non-prescription medications. While 53.5% of participants who had a secondary school education used medications, only 39.5% of participants who had higher educational qualifications reported regular medication use. Four per cent of participants reported never taking medicaments; this finding was most common among participants with a secondary school education. A total of 56.2% of pensioners and 40.3% of employed respondents reported taking medication regularly. A total of 9.7% of pensioners and 83.1% of employed respondents reported taking medications once in a while. Sixty-four per cent of employed individuals and 12.2% of students reported never using medications. Of respondents aged 50–64 years, 36.2% reported regular medication use; 32.8% of respondents over 65 years of age reported regularly taking medications. Fifty-six per cent of participants between 20 and 34 years of age reported taking medications once in a while, and 48.3% of this age group reported never using medications.

**Indications for non-prescription drug purchase**
Figure 1 analyses the type of non-prescription drugs most frequently bought by patients. Fever reducers and analgesics were most common, reported in 33.8% of cases. Medicines for the common cold were the second most prevalent at 28.7%. Vitamin supplements were third most common at 22.0%.

**Patient viewing of medication advertisements**
A total of 65.5% of respondents reported watching or hearing non-prescription drug advertisements in the media several times a day. Employed participants were most likely to report seeing/hearing advertisements (60.0%) followed by pensioners (30%). Overall, 22.5% of respondents reported seeing medication advertisements several times per week. A total of 7.3% reported seeing a medication advertisement monthly or twice per year, and 5.7% reported never seeing or hearing a medication advertisement.

**Gathering information before buying non-prescription drugs**
Individuals frequently rely on their own knowledge when buying OTC medications. If they require additional information, individuals will typically call a pharmacist to obtain medication, although they are also likely to look to a family doctor or relatives to provide additional information. Different health care workers often provide dissimilar information on drugs and dosages prescribed, which may lead to risks due to discontinuation of the existing therapy, an overdose of the existing therapy, unexpected drug interactions and increased surgery risks.10,11 Forty per cent of survey participants reported consulting with a specialist before buying non-prescription drugs. Employed respondents were most likely to consult a specialist, followed by pensioners, with >40.1% ($P < 0.001$) seeking consultation. Overall, 27.0% of participants reported that they do not consult a pharmacist, and 31.3% reported doing so occasionally.

**Reading packaged drug information**
Seventy per cent of respondents reported reading the drug information contained in or printed on packages of non-prescription drugs. Twenty-three per cent reported usually reading the packaging, and 10.0% reported never or only rarely reading the drug packaging. Figure 2 depicts respondents’ drug package reading behaviour. Overall, 23.0% of respondents who took non-prescription drugs reported being greatly influenced by the packaged drug information. Approximately one-half of employed participants reported being greatly influenced by the packaged drug
information; 41.0% of pensioners reported being greatly influenced by the packaged drug information ($P < 0.05$). Thirty-seven per cent of all respondents reported being somewhat influenced by the packaged drug information. Of this group, 70.0% were employed and 22.0% were pensioners. Almost 20.0% of those who completed questionnaires were not influenced by the packaged drug information. However, four to five persons decided not to take the medication after reading packaged information. Employed participants were most likely to decide not to take a drug after reading the package (60.0%); this ratio decreased to approximately one-third among pensioners. In Hungary, the packaged drug information has been approved by the National Institute of Pharmacy.

**Patient–pharmacy interaction**

Forty-four per cent of participants reported asking pharmacists about the effects of the non-prescription medications they purchased. Speaking to a pharmacist about OTC medication was most common (49.0%) among participants who were 50–64 years old. A total of 46.1% of participants who were 35–49 years old reported asking pharmacists about OTC drugs. Among all age groups, 9.9% reported never asking about effects or recommendations from a pharmacist; this was most characteristic of younger age groups. A total of 45.9% of respondents reported asking the pharmacist about drug information infrequently, the dominant age group here being age 20–34 years old. Fifty per cent of all participants reported asking the pharmacist for drug information once in a while. There was also a sex-specific difference with regard to the purchase of non-prescription medications ($P < 0.001$).

Overall, 44.3% of respondents reported that pharmacists always recommend several kinds of products when buying non-prescription drugs and that the pharmacists give adequate information. A total of 21.7% reported making medication decisions based on information from the Internet, parents, friends or advertisements. This was most typical of participants who were 20–34 years old.

Respondents with an elementary-level education were most likely to discuss their medication decision with a professional (31.0%) before buying non-prescription drugs. This may be due to the fact that the packaged drug information influenced participants with an elementary education. Participants with a secondary-level education were also likely to read the packaged drug information (45.0%).

**Factors affecting medication purchases**

Figure 3 depicts what participants are interested in when non-prescription drugs are recommended to them. Respondents most commonly mentioned the effect of the medication (26.0%), followed by price (22.0%), its expected side effects (18.0%) and how it should be taken (15.0%).

**Views on the safety, potency and effectiveness of OTC drugs**

Overall, 71.5% of respondents reported that they always followed the directions on the drug package, while 13.5% said they often followed the directions. A total of 7.3% said they would sometimes follow these directions, while 1.8% and 1.6% would rarely or never follow the directions, respectively. Females and those >65 years old were more likely to follow the directions ($P < 0.05$).

Respondents’ views on 10 statements about OTC drugs in terms of safety, potency, effectiveness and liability for abuse or dependence are summarized in Table 2. The sex of respondents had little effect on responses to these statements apart from two cases: males were more likely than females to agree that non-prescription medicines can sometimes mask serious health problems ($P < 0.05$) and that some non-prescription medicines interfere with the body’s natural healing process ($P = 0.001$).

**Knowledge and opinion on misuse and abuse of OTC medicines**

Following an explanation of the difference between the terms abuse and misuse, 81.7% of participants
thought that non-prescription medicines could be abused. Almost 1100 participants \( (n = 1089) \) named at least one OTC product or category, 180 named two and 45 named three OTC products or categories that could be abused. The most frequent OTC medication categories thought to be liable for abuse were painkillers, sleep aids and cough medication. Almost one-third of participants identified specific products by name rather than category.

Interviewees were asked if they had encountered any cases of abuse or misuse of OTC medicines. Almost one-third \( (n = 536) \) reported having personally encountered cases of OTC abuse. There was a significant difference between reports made by males and females, with more females being aware of cases of laxative abuse to lose weight, while males described examples of mixing OTC medicines with alcohol \( (P < 0.001) \). Those who thought that OTC medication abuse could be a problem were asked for their views on solutions. More than half \( (n = 782) \) either did not know how to respond or reported that something should be done but did not offer any suggestions.

Discussion

This study revealed that 75% of survey participants were regular users of community pharmacy services for self-medication purposes. Almost 30% of participants reported having personally encountered OTC drug abuse.

In order for people to use non-prescription products properly, a successful national education strategy is warranted. Pharmaceutical advertisements addressing the public pose a challenge to health care professionals as these advertisements make active contact between health care providers and the public necessary.

Although studies illuminate the importance of oral information at the pharmacy counter, this argument must also be put into perspective for two reasons. First, patients do not always remember what has been said completely or correctly. Second, pharmacists should provide both oral and written information in order to communicate information to patients successfully. Even though it has not been substantiated with scientific evidence, many patients will know precisely how to take their medicine. Put differently, every customer does not need information every time they visit the pharmacy to collect their prescription.

Even if the patient does not express a desire for counselling, the pharmacist is still free to discuss the patient’s medication with him or her and provide the patient with additional information.

What is the cause of OTC medication misuse and why do almost 60% of purchasers not consult a professional about their decisions? According to the results of this survey, 44% of patients frequently think that they know the effects of the drugs. One-third of those interviewed trust pharmacists and accept their advice. Among employed individuals, this ratio is \( \sim 50\% \), and among pensioners, it is 40%. A total of 65% of respondents reported that they watch or hear non-prescription drug advertisements in the media several times a day. Employed participants were the most likely to encounter drug advertisements \( (60\%) \), followed by pensioners. Almost 60% of participants would like to obtain information concerning medication side effects. Fifty per cent would like information about the most appropriate medication for their condition. Just \( >70\% \) of participants reported always or often reading the instructions on the OTC drug package before they used the product, which is less than that reported previously during the Everyday Healthcare Study \( (96\%) \). This decrease could be due to an

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly agree (%)</th>
<th>Agree (%)</th>
<th>Unsure (%)</th>
<th>Disagree (%)</th>
<th>Strongly disagree (%)</th>
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</thead>
<tbody>
<tr>
<td>I reach for OTC medicines at the first sign of illness</td>
<td>5.8</td>
<td>24.9</td>
<td>5.9</td>
<td>50.7</td>
<td>12.7</td>
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<td>I use OTC medicines only if the illness is quite severe</td>
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<td>50.1</td>
<td>11.2</td>
<td>23.7</td>
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<td>Non-prescription medicines are totally safe to use</td>
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<td>20.6</td>
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<td>The effect of incorrect use of non-prescription medicines can be as serious as that of prescription medicines</td>
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<td>13.6</td>
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<td>Non-prescription medicines can sometimes mask serious health problems</td>
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<td>50.7</td>
<td>27.9</td>
<td>9.1</td>
<td>8.2</td>
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<td>Some non-prescription medicines interfere with the natural healing process of the body</td>
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<td>52.5</td>
<td>30.9</td>
<td>14.3</td>
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<td>With continual use, some non-prescription medicines lose their effectiveness</td>
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<td>62.2</td>
<td>10.8</td>
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<td>5.2</td>
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increase in people’s confidence over time in relation to self-treatment. Even when self-medicating, 50% of respondents reported consulting with a health specialist before purchasing non-prescription drugs. Although detailed information is given in the packaging of non-prescription drugs, 3% of patients read them once in a while or never read them. This number seems to be small, but when it is also considered that 10% of patients state that they read the packaged drug information only once in a while, the proportion of patients who may be inadequately informed about the OTC medications that they are taking becomes rather high.14

A number of respondents were at risk of misusing OTC medicines. The current report reveals that almost 80% of participants were aware of the abuse potential of OTC medicines, with painkillers, sleeping aids, cough medicines and laxatives being the main categories reported. Almost one-third of participants reported encountering cases of inappropriate OTC drug use that they classified as abuse. Some participants reported cases of mixing OTC products with alcohol.

With the growth of the non-prescription drug market and improvements in the health culture of the population, the function of the pharmacy may also change; it may develop into a health care information and educational centre. This new emphasis implies a shift in the task of pharmacists towards an educational and counselling role.

The pharmacy may become the first and last link to patients, where they can still be directed, helped, supported and educated concerning medication choices. The pharmacist is the individual who can do this with competence. The population expects information concerning medications to be communicated from the pharmacist in an understandable way. It should be in the pharmacy that patients learn about the medications they take, because it is here that the pharmacist is present, with knowledge concerning patients’ prescription medications and concomitant medical conditions that may affect OTC drug choices.

With this knowledge, the pharmacist becomes the gatekeeper who is responsible for recommending the appropriate health care resources to each patient. This task greatly increases the responsibility of pharmacists and their role in health education.12 The patient is of primary importance, which means that patients should be served in the most responsible way in order to choose the most suitable treatment. Pharmacists carry out a major consulting role in pharmacies that are open to the public. They are easily available and their advice is accepted by the public.15–17 Much of the available literature deals with individual consultation at pharmacies.18 The provision of oral and written educational information is an important property of pharmaceutical care in the community-based pharmacy.

Our ultimate purpose is to have the population obtain more precise useful information when buying non-prescription medications. The challenge in controlling OTC medication misuse and abuse is to achieve a high level of consumer safety while not restricting access to OTC products for those who continue to use them appropriately. It is recommended that by monitoring usage of certain OTC products, in addition to data recording and education, safe and effective use of such medications can be promoted.

Declaration

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Ethical approval: none.
Conflicts of interest: none.

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4 Bradley CP, Bond C. Increasing the number of drugs available over the counter: arguments for and against. Br J Gen Pract 1996; 46: 121–2.