
GENERAL

**FACTORS INFLUENCING PURCHASE OF AND COUNSELLING ABOUT
PRESCRIPTION AND OTC MEDICINES AT COMMUNITY PHARMACIES
IN TALLINN, ESTONIA**

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Abstract: The aims of the current survey were to evaluate factors influencing purchase of prescription and OTC medicines of pharmacy customers in Tallinn, Estonia and to identify the role of community pharmacists in counselling of prescription and OTC medicines. Structured questionnaire was used to interview pharmacy customers (n = 1820) in six community pharmacies of Tallinn, the capital city of Estonia. The survey instrument consisted of 15 multiple-choice items. According to the survey results, prescription and OTC medicines were bought from community pharmacies almost equally. The most popular OTC medicines were analgesics (38%), cold and cough medicines (21%). The older survey participants and these with lower income and with elementary school education bought more prescription medicines ($p < 0.01$). Survey participants with higher income were purchasing more OTC medicines and food supplements ($p < 0.01$). Before purchase of medicines recommendations were received mainly from physicians about prescription and from pharmacists about OTC medicines. However, the counselling provided by community pharmacists in selecting of both types of medicines was highly appreciated. Pharmacists as source for drug information were less trusted among the survey participants < 25 and 26–40 years ($p < 0.01$). Fast service and confidential counselling about medicines was less important for the respondents with elementary school education ($p < 0.01$).

Keywords: prescription medicines, OTC medicines, counselling, community pharmacy services, community pharmacists, Estonia

Development of community pharmacy services in post-socialist countries has been influenced by several factors: external determinants, such as transition in the economy, the social sphere and the political organization of the country, and internal factors, such as worldwide reorientation within the pharmacy profession, changing the position of pharmacist within health care system (1, 2). In the described situation many post-socialist countries retained traditional community pharmacy services along with step-by-step improvement towards patient orientation and provision of more detailed drug information to assure safe and effective use of medicines (3, 4). Estonia can be seen as an example of country in transition providing mostly traditional community pharmacy services – dispensing and counselling of prescription and over-the-counter (OTC) medicines; counselling on self-medication and preparation of medicines (5).

Counselling about prescription and OTC medicines at community pharmacy

Community pharmacists have traditionally provided two types of services – dispensing of and

counselling on prescription medicines, and provision of advice on self-care and self-medication (6). With regard to prescription medicines, patients consider physicians as the primary and pharmacists as the secondary source of information (7). At the community pharmacy, provision of information concerning prescription medicines is initiated and guided by the pharmacist. During the counselling process, pharmacist can identify possible drug-related problems, increase the likelihood of patients' adherence to drug therapy and optimize the quality of care of the particular patient (7).

The role of the pharmacist in giving advice concerning OTC medicines and self-medication has increased during last decades. If surveys carried out 10–15 years ago reported negative attitudes of patients about the pharmacist being a therapeutic consultant or suggesting OTC medicines proposed by physician (8), later studies refer to pharmacists as credible and accessible sources of information in case of minor ailments and OTC medicines (9, 10). There are no considerable differences in providing information concerning prescription or OTC medi-

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cines. In both cases, the information should include name of the medicine; purpose of the treatment or indication; directions for use; side effects; precautions and time frame for effectiveness. Where appropriate, for some minor ailments non-medicinal treatment could be recommended. It is important for pharmacist to encourage patients for the follow-up consultations even when the symptoms diminish and the medicine used has been effective (11, 12).

Public perception about community pharmacists and community pharmacy services

Despite the fact that drug treatment is the most frequently used method in the cure and prevention of different medical conditions, it remains unclear who should take responsibility for the outcomes of drug therapy. In light of recent developments within the pharmacy profession, pharmacists are well positioned to take this responsibility (13). Early studies of public perception of pharmacists have described them mostly as friends of the drug manufacturer with primarily commercial motivation (13). Later surveys support the idea of the pharmacist being a qualified provider of both traditional and extended community pharmacy services (14–17). However, it should be mentioned that patient satisfaction with provided services may sometimes be deceptively high due to low expectations and limited experience of different distribution of services (18, 19).

There is little information available on the role of community pharmacies in the health care system of post-socialist countries. Similarly there is little data describing services provided at community pharmacies (3, 4, 20–22). The objectives of the current survey were to evaluate factors influencing purchase of prescription and OTC medicines of pharmacy customers in Tallinn, Estonia and to identify the role of community pharmacists in counselling of prescription and OTC medicines.

MATERIALS AND METHODS

Survey design

The survey was undertaken in six community pharmacies of Tallinn, the capital city of Estonia. At the survey period, there were operating 137 community pharmacies in Tallinn serving an average 2900 inhabitants per pharmacy. In selection of survey pharmacies the following principles were considered – the pharmacies should be located in different regions of the town and be of a different type:

- 2 city centre pharmacies with regular customers; pharmacies provide large selection of prescription and OTC medicines;

- 2 shopping centre pharmacies with no regular customers, pharmacies provide large selection of prescription and OTC medicines;
- 1 pharmacy located at the same building with an ambulatory clinic, regular customers visiting general practitioner; large selection of prescription medicines, sufficient selection of OTC medicines;
- 1 pharmacy located in the residential area, regular customers; large selection of prescription and OTC medicines.

The data were collected in bimonthly cycles in May–June 2005, September–October 2005 and December 2005–January 2006. Pharmacy managers were informed about the survey. During the survey period, all pharmacy customers who purchased prescription and OTC medicines (excluding pharmacy customers from abroad) were approached by the pharmacy students and asked to participate in the survey. Recording of the pharmacy customers who refused to participate in the survey was not performed. The students interviewed the pharmacy customers and filled in the survey instrument in the pharmacy. Participation in the survey was anonymous. In all six pharmacies it was planned to collect at least 300 completed survey instruments.

Survey instrument

Structured survey instrument consisted of 15 multiple-choice items and included the following information: (1) socio-demographic information (age, gender, nationality, education, income in one month) of survey participants; (2) purchase of prescription medicines, OTC medicines and food supplements (vitamins, mineral agents, herbal products); (3) satisfaction with and trustworthiness towards community pharmacist in providing pharmacy services and drug information; (4) factors influencing purchase of medicines; (5) expectations towards community pharmacists when purchasing prescription or OTC medicines; (6) expectations towards community pharmacies.

Survey instrument was adapted from previous questionnaire evaluating preferences of pharmacy customers about selecting community pharmacy and about general expectations towards community pharmacy services and community pharmacists (21). The survey instrument was available in Estonian and Russian languages. Content validity and comprehensibility of the survey instrument was pre-tested by 5 randomly selected pharmacy customers of participating community pharmacies.

Data analysis

Initial data were coded, inserted and stored in MS Excel database. Statistical analysis of the data

Table 1. Socio-demographic characteristics of survey population

	n = 1820	%
Age (years)		
≤ 25	298	16
26–40	580	32
41–55	402	22
56–70	381	21
> 71	159	9
Gender		
Female	1289	71
Male	531	29
Education		
Elementary school	106	6
Secondary school	444	24
Secondary school education with specialization	517	28
High school	753	42
Income in one month*		
< 3000 Estonian kroons (EEK) (192 EUR)	266	15
3001–5000 EEK (192–321 EUR)	363	20
5001–10,000 EEK (321–641 EUR)	729	40
10,001–15,000 EEK (641–962 EUR)	331	18
> 15,001 EEK (> 962 EUR)	131	7
Nationality**		
Estonian	1466	81
Russian	341	18
Other nationality	13	1

*In 2005, the average monthly income was 8073 Estonian kroons (518 EUR); 40% of the survey population had approximately the average income. ** In 2005, the Estonian population was 1,347,510; 726,910 (53.9%) women and 620,600 (46.1%) men; 922,989 (68.5%) Estonians, 346,339 (25.7%) Russians, 78182 (5.8%) other nationalities.

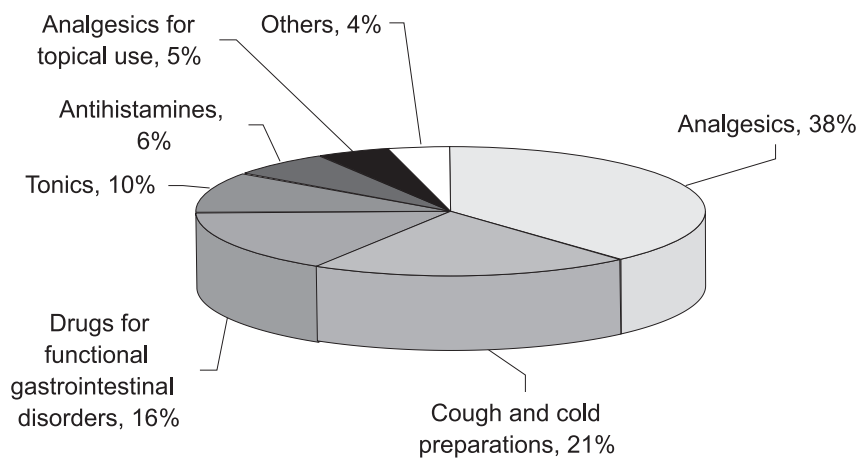


Figure 1. OTC medicines purchased during past 12 months

was performed in SPSS (Statistical Package for Social Sciences Chicago, IL). Frequencies were calculated and cross-tabulation was performed to evaluate the correlation between the purchase data and the age, gender, education and income of survey participants. Due to the low number of participants from the nationalities other than Estonian, this characteristic was later excluded from statistical analysis. Pearson χ^2 test was used for categorical variables and the level of statistical significance was set at $p \leq 0.05$.

RESULTS

Description of the survey population

Altogether 1,820 pharmacy customers participated in the survey in the six community pharmacies (mean 303 ± 4 customers per pharmacy) aged 14–89 (mean age 44 ± 18 years). The most widely represented age group were the people in the age of 26–40 years. There were more women than men and the number of Estonians was higher than the total number of Russians and the representatives of other nationalities. Seventy five percent of survey participants earned less than 10,000 Estonian kroons (641 EUR) per month and only 7% of pharmacy customers had a monthly income higher than 15,000 Estonian kroons (962 EUR) (Table 1).

Purchase of prescription and OTC medicines

During the last 12 months shares of prescription (42%) and OTC medicine (36%) purchases were almost equal, whereas the prescription medicines sold for the treatment of chronic conditions consisted 26% of all medicines purchased at community pharmacies. In addition to the above-mentioned products, food supplements (22%) were bought. Regardless of the season, the most frequently purchased OTC medicines were analgesics and the medicines against cold and cough. Among survey participants different tonics were popular and bought regularly (Figure 1).

Factors influencing purchase of prescription and OTC medicines

The survey participants appreciated pharmacist's recommendations for OTC medicines and physician's recommendations for prescription medicines. However, professional counselling in pharmacies was expected for both, prescription and OTC medicines. Price of medicines strongly affected 25% of pharmacy customers, but drug advertisements were considered with less influence for purchase decisions about medicines (Table 2).

Expectations towards community pharmacy, satisfaction with community pharmacists

For 72% of the respondents it was important to have an appropriate selection of medicines and 44% were looking for private consultations. More than half of the respondents expressed their content with the services provided (68%) and drug information presented by pharmacists (60%). More than half of the respondents trusted the pharmacists as drug consultant (56%). Survey participants had similar expectations towards counselling of prescription and OTC medicines. Positive attitude towards pharmacy customer, professional counselling service and help in selection of appropriate medicine were the most frequently described criteria which were the basis for customer satisfaction. Fast service and possibility for confidential communication were considered equally important. (Table 2)

Impact of age, gender, education and income on the purchase of medicines

There was no statistically significant difference between the survey results among men and women. There was also no statistical correlation between the price of medicines bought and the age of a customer. However, there did appear a tendency that the older survey participant expressed the higher concern over the price of medicines. The older participants of the survey (65+) purchased more prescription medicines and less food supplements than the rest of the respondents ($p < 0.01$). Trust towards a pharmacist as a drug information source was the lowest among the subjects aged < 25 years and the subjects in the age of 26–40 years ($p < 0.01$). Fast service and confidential medicine-related counselling was less important in the age group +56 years ($p < 0.01$). In comparison with the rest of the survey participants, pharmacy customers with elementary school education ($p < 0.01$) and the respondents with low income ($p < 0.01$) bought mostly prescription medicines. With an increase of the income the participants more likely were to buy OTC medicines ($p < 0.01$) and food supplements ($p < 0.01$). The group of medicines that was bought the most by the respondents with elementary school education were OTC analgesics ($p < 0.01$). The respondents with elementary school education considered confidentiality ($p < 0.01$) and fast service ($p < 0.01$) less important than the rest of participants.

DISCUSSION AND CONCLUSION

Current research continued the basic survey investigating the Estonian pharmacy customers'

Table 2. Factors influencing purchase of medicines, lay expectations towards pharmacist if purchasing medicines.

Factor/ expectation	Strongly agree (%)		Neutral (%)		Strongly disagree (%)	
	Rx	OTC	Rx	OTC	Rx	OTC
Factor influencing purchase of medicine						
Recommendation by physician	87	44	11	37	2	19
Recommendation by pharmacist	30	57	47	39	23	4
Recommendation by family and friend	5	15	29	60	66	25
Price	20	25	42	50	38	25
Advertisement	2	7	16	49	82	44
Other	2	2	1	2	97	96
Lay expectations to pharmacist if purchasing medicines						
Professional counselling	76	86	19	12	5	2
Guidance by pharmacist in selection of appropriate medicine	66	80	26	17	8	3
Pleasant service	85	86	13	13	2	1
Fast service	52	53	40	40	8	7
Confidentiality in communication with pharmacist	56	52	34	37	10	11
Other	1	1	1	1	98	98

Rx – prescription medicine; OTC – non-prescription medicine

expectations in relation to community pharmacy services (21). The research focused on factors influencing the purchase of prescription and OTC medicines and the role of community pharmacists in providing consultation about medicines.

The current research supported the results of international surveys, where pharmacists have perceived as important source of information concerning self-treatment and OTC medicines (6, 7, 9, 10, 22). In addition, the current research stressed the role of community pharmacists in selecting appropriate prescription or OTC medicine for patient. However, study participants in the age of 40 and below had less trust towards pharmacists than the rest of respondents. This finding could be explained not as the lack of confidence towards pharmacists, but rather use of different sources of drug information (e.g., Internet or patient information leaflet) (23). On the other hand, dissatisfaction with community pharmacists could be connected with insufficient information received. Other surveys undertaken in Estonia have stressed need for more detailed information about side effects and interactions of medicines (22, 24).

Low impact of drug advertisements on the purchase of medicines is questionable. For prescription medicines it is logical, as similarly to the other European countries, advertisement of these medi-

cines to the public is not allowed (25). However, the advertisements of OTC medicines are very frequent in TV, radio, journals or newspapers and according to other surveys, these advertisements serve as an important source of information concerning medicines (23). It is also obvious that most of the people do not recognize the impact of advertising on their decision-making process (26).

Insignificant correlation between the price of medicines and the age of respondents demonstrated that in all age groups there are people, who have problems with access to medicines due to the high price. In 2003, generic prescribing was introduced in Estonia (27) and since April 2010, community pharmacists are obliged to recommend the cheapest possible medicine to the patient, which in most cases is a generic product (25). However, despite the large reforms related to the reimbursement system of medicines and the introduction of generic medicines, the WHO report about the pharmaceutical sector in Estonia identified concerns over the patients' increasing expenses on medicines; market incentives for pharmacies to dispense generics; implementation of a national program to improve prescribing and rational use of medicines and ensuring adequate and timely distribution of medicines (28).

Purchase of medicines at community pharmacies in Tallinn, Estonia was influenced mainly by

recommendations given by health care professionals. Price of medicines was important for 20–25% of the survey participants. In selection of both prescription and OTC medicines pharmacy customers expected the professional guidance of pharmacist. In addition, pleasant, confidential and fast service was regarded as important.

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