



## SELF-MEDICATION STUDY AND EVALUATION IN CASE OF COMMON COLD AND COUGH

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### ABSTRACT

Pharmacists can be a valuable source of information for people, who prefer self-medication. In this case people can ask for advice without having to make an appointment and this advice is free of charge. Pharmacists should ensure that patients are informed about effective, safe and correct usage of medicines. Pharmacists should control the self-medication process, should give advices to the patient about medicine use and other means of treatment (diet, bed regimen, etc.). The pharmacist must distinguish hazardous complaints and, in case of necessity, direct the patient to appropriate doctor. The role of pharmaceutical care grows in the development of self-medication concept when the pharmacist becomes the principal advisor of the patient. The development of self-medication concept, the constant increase of medicine quantity in over-the-counter medicine list, when more and more patients apply to the pharmacy, excluding the physician, the primary task of the pharmacist is to provide advice on medicines and their rational use, based on the symptoms of the disease and the patient's pathological condition, provide proper and high-quality pharmaceutical care for each patient. Despite the high use of over-the-counter cough and cold medicines, little is known about Armenian population's cough and cold medicines information needs. The results of the study revealed some problems of patient care and self-medication control in case of common cold and cough, as well as in providing information on the medicine side effects, in differentiation of the necessity of patient direction to physician in case of cold and cough, as well as in revealing of patient's information.

**KEYWORDS:** pharmaceutical care, self-medication, pharmacy worker, common cold, cough

### INTRODUCTION

Every day, we are practicing self-medication in the form of self-care of our health. Nowadays consumers (patients) want to play a greater role in maintaining their health, because of some problems they do not want to go to a doctor and want to manage their treatment in conditions of adequate information [Pagán J et al., 2006, Kayalvizhi S, Senapathi R, 2010]. Pharmacist is one of the key role players in educating his customers about the proper use of medicines, which are intended for self-medication. For that necessary steps have to be taken in his training and practice [Sangl J, Wolf L, 1996]. Pharmacists play a valuable role in identifying, solving and pre-

venting drug-related problems for the purpose of achieving optimal patient outcomes and quality of life. Ambulatory based pharmacists have the opportunity and responsibility to foster safe, appropriate, effective and economical use of all medicines, especially those therapies patients are self-selecting [Wilbur K et al., 2010; Bennadi D, 2014].

Self-medication can be useful in the multi-symptomatic management of the common cold and other preferentially non-febrile flu-like symptoms, especially as at present multicomponent remedies are available, which may make self-medication significantly easier with consequent better compliance of adult patients. The procedure of the therapy to be really effective and safe must be necessarily concentrated into pharmacies, where safety and efficacy of therapy are ensured by the pharmacist as the last link of contact between the patient and the drug. Any other

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distribution of the OTC medicines is therefore strictly unacceptable [Fendrich Z et al., 1998; Okonenko L et al., 2009].

Common cold is the most common infectious disease among humans. According to current statistics, adults are affected 2-3 times a year, they often meet in winter. This disease has existed throughout human history [Simasek M, Blandino D, 2007]. During common cold the nasal cavity, pharynx, maxillary sinuses and larynx are affected more often. Symptoms can be manifested after two days of infection. These include cough, pain in pharynx and larynx, sneezing, headache and fever. Common cold usually begins with fatigue, sense of tear, sneezing and headache, followed by nasal congestion and coughing for several days. This disease is diagnosed based on symptomology, and treatment is mainly symptomatic [Eccles R, 2005; Allan M, Arroll B, 2014].

Pharmaceutical care for common cold is aimed at eliminating symptoms such as fever, rhinitis, and cough. These symptoms can occur both separately and in combination with each other [Chernykh P et al., 2002]. The pharmacist should be able to distinguish between non-hazardous symptoms of cold and symptoms of serious illness that require a physician's mandatory diagnosis, followed by pharmaceutical care with OTC medicines [Eickhoff C et al., 2012; Zupanets I, Bezugla N, 2013].

The general public relies on over-the-counter (OTC) medicines to cure cough and cold symptoms and reliable guidance is needed to help select the appropriate OTC medicine for each individual. Consumers may be confused by the wide variety of products available, and pharmacy workers are in a position to help people identify the most irritating symptoms, evaluate underlying medical conditions and recommend the most suitable OTC medicines for treatment. Patients and pharmacy workers should be educated about OTC medicines to manage cough/cold symptoms for safe and effective use of OTC medicines [Jackson Allen P, Simenson S, 2013].

Cough is a symptom that could be due to the common cold or a serious underlying cause. For an appropriate response, the pharmacist is required to use a systematic approach to assess the cough [Morice A et al., 2006].

Patients who apply to pharmacy for cough

elimination make the significant part of the pharmacy visitors. The pharmacist needs to remember that OTC medicines are capable to treat only a few respiratory diseases and at the initial stage.

Pharmacology care is the responsible provision of medicines therapy for the purpose of achieving definite outcomes that improve a patient's quality of life ( the elimination or reduction of a patient's symptoms, arresting or slowing of a disease process) [Foppe van Mil J, Llimos F, 2013].

In the first stage of pharmaceutical care, the pharmacist should try to detect the possible cause of cough, as well as deny or confirm dangerous symptoms [Chernykh P et al., 2002].

The aim of this study was to identify gaps in pharmacist's knowledge and attitude, to better target consumer medicines information and improve quality use of medicines during common cold and cough.

#### MATERIALS AND METHODS

It is quite common to use self-medication in case of common cold instead of applying to a physician, without knowing the causes of the disease. For this purpose, they often get "appropriate" medicines from pharmacies.

For the purpose of determining the possible ways of drugs self-choice, pricing policy, and impact satisfaction among consumers who practice self-medication in the territory of the Republic of Armenia, the YSMU SRC and the Department of Pharmacology Management have suggested a survey, which includes 4 questionnaires: PharmTest-1A, PharmTest-1B, PharmTest-1C, PharmTest-1D, each of which includes a specific group of questions. The expediency and applicability of the questionnaires were discussed and approved by YSMU Ethics Committee. The questionnaires are developed based on WHO (2006) standard survey questionnaires, taking into account the specificity of the work.

Each of these questionnaires has its own unique meaning to evaluate the efficacy of the customer-pharmacy-customer circle activity (Questionnaire 1-4):

The fourth questionnaire (PharmTest-1D), which is actually a consumer health self-assessment questionnaire, can be changed depending on the choice of certain types of diseases, such as gastrointestinal tract, cardiovascular, eye, neural, as well as on the presentation of the characteristic symptoms of the selected disease.

**QUESTIONNAIRE 1**

**PharmTest-1A**

Name, Surname		
Date		
Place of Residence	Yerevan	
	RA region, city	
	RA region, village	
	Abroad	
Gender	Male	
	Female	
Age	18-23	
	24-29	
	30-34	
	35-39	
	40-44	
	45-49	
	50-54	
	55-59	
Education	60 and above	
	Secondary education	
	Vocational education	
	Incomplete higher education	
	Higher education	
	Postgraduate education	
Employment Area	Student	
	Academic	
	Government	
	Law	
	Private	
	Art	
	Craftsman	
	Seasonal worker	
	Unemployed	
	Housewife	
Who do you turn to for getting first aid medicines?	Doctor	
	Pharmacy worker	
	Other	
How many times have you turned to a doctor for the last six month?	Once	
	Twice	
	Three times	
	Never	
Do you have health problems diagnosed by the doctor?	Yes	
	No	
How many times have you purchased anything from the pharmacy during the last month?	Once	
	Twice	
	Three and more times	

**QUESTIONNAIRE 2**

**PharmTest-1B**

Based on your own knowledge	Yes	
	No	
Use of various information resources (internet, catalog)	Yes	
	No	
Following the advice of the patients with similar symptoms	Yes	
	No	
Use of advertisement information	Yes	
	No	
Do you turn to your area doctor for advice before buying the medicine you have chosen?	Yes	
	No	
Do you turn to a pharmacy worker for advice before buying the medicine you have chosen?	Yes	
	No	
You get the medicine from	a random pharmacy	
	a certain pharmacy chain	
	the nearest pharmacy	
What are the most important principles for you when choosing the medicine?	Pharmaceutical manufacturer	
	Price	
	Quality	
	Accessibility	
	Doctor's prescription	
Do you disregard the medicine prescribed by the doctor following the advice of the pharmacy worker?	Pharmacy worker's recommendation	
	Yes	
	No	
Do you get the medicines from your acquaintances?	Sometimes	
	Yes	
Which pharmacy chain do you prefer?	No	
	Natali Pharm	
	36.6	
	Green pharmacy	
	Tonus Les	
	Alfa pharm	
	Levon- Lamara	
	Vaga pharm	
	Gedeon Richter	
	a random pharmacy	
Do you get familiar with the characteristics of the medicine before buying it?	Yes	
	No	
Do you get familiar with the contraindications of the medicine before buying it?	Yes	
	No	
Do you get familiar with the storage conditions of the medicine before buying it?	Yes	
	No	
Do you check the medicine expiration date before buying it?	Yes	
	No	
Do you buy the medicine in the factory package?	Yes	
	No	
Do you buy the medicine without package?	Yes	
	No	

QUESTIONNAIRE 3

PharmTest-1C

How many times have you purchased anything from the pharmacy during the last month?	once a month	
	twice a month	
	three and more times	
	Never	
When buying medicine from the pharmacy, whose advice do you follow?	Doctor	
	Pharmacy worker	
	Previous experience	
	Advertisement information	
	Internet information	
	Medical Information resources	
Do you trust the pharmacy worker's advice?	yes	
	no	
	sometimes	
Does the medicine bought following the advice of the pharmacy worker meet your expectation?	yes	
	no	
	sometimes	
Are the medicines released by the pharmacy worker	useful	
	harmless	
	useless	
Do you trust the advice of the pharmacy you have chosen?	yes	
	no	
	sometimes	
Does the pharmacy worker ask you questions for understanding your health condition before recommending medicine?	yes	
	no	
	sometimes	
What the pharmacy worker indicate as the advantage of the medicine before recommending it?	Price	
	Producer	
	Quality	
When buying medicine following the advice of a pharmacy worker, does he/she explain why he/she recommends that very medication?	Yes	
	No	
	sometimes	
When buying medicine following the advice of a pharmacy worker, does he/she warn you about the possible side effects of the medicine that he/she recommends?	Yes	
	No	
	sometimes	
When buying medicine following the advice of a pharmacy worker, does he/she warn you about the usage procedures of the medicine that he/she offers?	Yes	
	No	
	sometimes	
Have you ever turned to a doctor following the advice of a pharmacy worker?	Yes	
	No	
	sometimes	

QUESTIONNAIRE 3

PharmTest-1C

Do you inquire about the group of the medicine the pharmacy worker offers?	Yes	
	No	
	sometimes	
Are there cases when you do not buy the medicine the pharmacy worker recommends?	Yes	
	no	
	sometimes	
Does the pharmacy worker fully respond to your questions?	Yes	
	No	
	sometimes	
Does the pharmacy worker inquire about the usefulness of the medicine that he/she recommended?	Yes	
	No	
	sometimes	
Have the pharmacy worker ever contacted your doctor to check nay questions?	Yes	
	No	
	sometimes	
What is the most important thing for you in choosing a pharmacy?	product range	
	Employee care	
	Worker knowledge	
	Price of Drugs	
	Pharmacy location	
How would you rate your trust in the pharmacy worker in the scale from 1-5?	1- do not trust at all	
	2- do not trust	
	3 - you have enough trust	
	4- you trust	
	5- you fully trust	
How would you rate the services provided by the pharmacy worker in the scale from 1-5?	1- very bad	
	2-bad	
	3 - enough	
	4 - good	
	5 - very good	
How would you rate the care provided by the pharmacy worker you always visit in the scale from 1-5?	1- very bad	
	2-bad	
	3 - enough	
	4 - good	
	5 - very good	
How would you rate the knowledge of the pharmacy worker you always visit in the scale from 1-5?	1- very bad	
	2-bad	
	3 - enough	
	4 - good	
	5 - very good	

## QUESTIONNAIRE 4

PharmTest-1D)					
Health condition	Decide yourself which medicine to take	You turn to the pharmacy worker's advice	You turn to the primary care doctor	You call an emergency	You go to hospital
1. Symptoms					
2.					
3.					
4.					

Number of questionnaires distribution in the Republic of Armenia was determined by The Survey System Version 11.0. taking into account the number of the population surveyed, the reliability coefficient  $t=1.96$ , the first type error is with 5% probability ( $\alpha = 0, 05$ ), and the evaluation accuracy is 3% ( $\Delta = 3\%$ ).

In 2017, 2018 and in the first trimester of 2019, for the purpose of determining the possible ways drugs self-choice, pricing policy, and impact satisfaction among consumers who practice self-medication in case of common cold and cough in the territory of the RA, a survey was carried out by the Department of Pharmaceutical Management of the YSMU among 340 customers using pharmacy networks in the regions of Armenia and Yerevan.

In our study, which includes the drug-seeking problems of people with common cold and cough

symptoms, a special attention has been paid to the self-assessment of consumers' health status in case of these diseases, which was not provided to the pharmacy staff, to evaluate the cooperation between the customer and pharmacy (Table 1, 2).

The survey is performed during customer service in the pharmacy chain of the RA, and a priority analysis is made to evaluate the role of pharmacy workers during drug offering through the following issues:

1. Sources of counseling,
2. Frequency of medicine purchasing according to a pharmacy worker advise,
3. Interest of a pharmacy worker in the nature of the complaint,
4. Pharmacy worker consultation about medicines purchase,
5. The advice consumer gets from the pharmacy

TABLE 1

PharmTest-1D (Common Cold)					
Health condition	Decide yourself which medicine to take	You turn to the pharmacy worker's advice	You turn to the primary care doctor	You call an emergency	You go to hospital
<b>Cough</b>					
Is the disturbing cough dry or productive (wet)?					
Has the cough lasted for more than a week?					
Has there been increase of cough intensity, fever, and aggravation of the patient's condition?					
Has the cough been accompanied by high temperature and lasted for more than three days?					
Has the cough been accompanied by voice change, general weakness, weight loss, shaking, dyspnea?					
Has the cough been accompanied by severe pains in chest?					
Has the cough been accompanied by abundant, greenish, bloody phlegm?					
Have you recently had ARD?					
Do you have skin itching?					

TABLE 2

PharmTest-1D (Common Cold)

Health condition	Decide yourself which medicine to take	You turn to the pharmacy worker's advice	You turn to the primary care doctor	You call an emergency	You go to hospital
<b>Common Cold</b>					
Has the cold lasted for more than a week?					
Are the lymph glands palpable?					
Is there patch on lymph glandes?					
Is there nasal discharge, if yes, is it purulent or bloody?					
Do you have severe pain in sinuses?					
Have you had hard breathing?					
Are the symptoms of cold becoming more and more intensive?					
Do you have accompanying diseases?					
Is the patient's condition getting worse?					

- worker about possible side effects,
- 6. The pharmacist's instructions about how to take medicine,
- 7. Data on applying for a physician by the advice of a pharmacy worker,
- 8. Consumers' interest in the medicine offered by pharmacy worker

Analyzes of other data related to pharmacy activity assessment will be commented later.

Data obtained as a result of surveys were registered in statistical SPSS software package (version 12.0). Pearson's correlation coefficient was used to estimate the relationship between qualitative characteristics; the Yett's adjusted coefficient was used in 2\*2 tables. The first type error is with 5% probability ( $\alpha = 0, 05$ ). Frequencies, relationships, percentages of the descriptive statistics were used to describe groups.

**RESULTS**

The results of the questionnaire survey carried out among 340 patients with different ages and education.

In question who do you most often turn to for advice when you have a cold, cough the answers were classified as follows (Fig. 1):

It is clear from the survey that consumers are mainly involved in self-medication in case of common cold and cough, which can lead to a number of complications: lack of early detection of diseases with early symptoms of cold, patients apply to a pharmacy worker for advice, who needs a clear guideline for literate care, according to which he/she must excludes the dangerous symptoms, taking into account the age of the patient, the accompany-

ing diseases, pregnancy and lactation period for women. Advertising is a means of transmitting commercial information for pharmaceutical companies that can also stimulate the self-medication process. Hence, pharmaceutical companies have a burden of responsibility-both moral and ethical, to regulate the content marketed on internet, social media and shown on television, to prevent gullible people from falling prey to faulty medicine and on the same hand provide correct information, with specific disease, side-effects, educating the masses and helping them reap benefits of early detection and prior information. The survey shows that patients are the least exposed to advertising and Internet information, however, self-medication has a tendency to increase, taking into account the OTC medicine market and the wide range of information available due to pharmaceutical companies.

How often do you buy cold and cough medicines following the advice of a pharmacy worker? A large

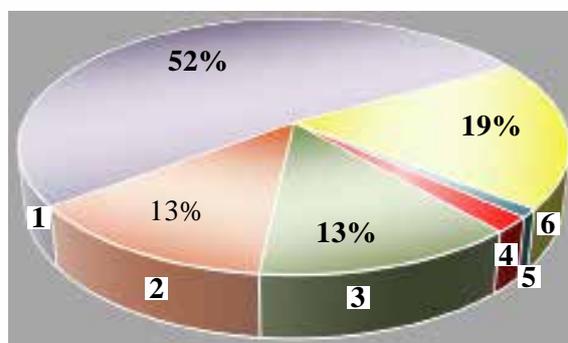


FIGURE 1. Sources of counseling for common cold, cough. Groups: 1- decide yourself which medicine to take, 2- primary care doctor, 3- hospital doctor, 4- use information from the Internet (2%), 5- use advertisement information (1%), 6- pharmacy worker 19%.

number of consumers were unable to answer (56%), which indicates the lack of patient's attention to his own health, 37% responded 3-4 times a year, which corresponds to annual affection rate of an adult by cold and cough [Jackson Allen P, Simenson S, 2013; Simasek M, Blandino D, 2007]: 2% and 5% of consumers respectively chose the versions twice a month and once a month (Fig. 2) : The cold is one of the most common diseases in Armenia according to "Health and Healthcare" yearbook (Armenia 2018) [Andreasyan D et al.,2018], so pharmacy staff often have to resort to cold and cough counseling. Pharmacy workers should have clear knowledge, guidelines for prompt orientation, quality service, and proper management of self-medication.

The pharmacist must ask about patient complaints before advising any OTC medicine, deny dangerous symptoms, and then discharge appropriate medicines according to pharmaceutical care algorithms [Chernykh P et al., 2002].

During the survey, we tried to find out the above mentioned by the following question:

When buying cold and cough medicines following the advice of a pharmacy worker, is he/she interested in your complaints?

The relative majority of consumers answered interested - 39%, sometimes interested - 18%, depend on pharmacy worker -18%, etc. (Fig. 3). Complaints are the main source of the mainstay for the pharmacy worker during medicine discharge, as well as for the detection of dangerous symptoms, so the interest rate of the pharmacy worker in complaints should be at a high level.

The practice of pharmaceutical care requires the integration of information about individual patients, their medical conditions, and medicines therapies.

Pharmacists must collect and generate subjective and objective information regarding the patient's general health and activity status, past medical history, medication history and history of present illness and complains.

Each decision of a pharmacy worker should be justified as it deals with human health and is the primary link in the management of drug consultation and self-medication.

We included the following question in the questionnaire for revealing this:

When buying cold and cough medicines following the advice of a pharmacy worker, does he/she explain why he/she offers that very medicine?

plain why he/she offers that very medicine?

The research reveals that 36% of pharmacists always give explanation about the offered medicine, sometimes - 27%, and so on (Figure 4). In this case, the pharmacy worker – consumer/patient relationship is not complete, consumers do not have a basic explanation and may not have enough confidence. According to the WHO's 7-Star Pharmacist Proto-

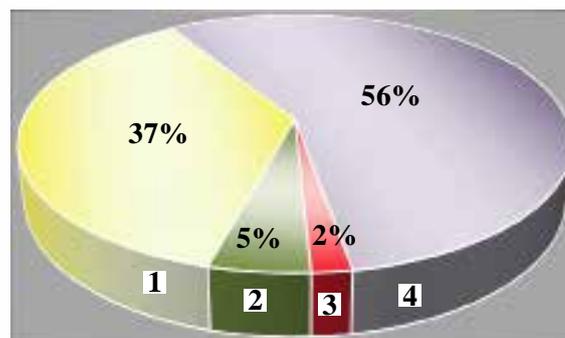


FIGURE 2. Frequency of common cold and cough medicine purchases by the advice of a pharmacist.

Groups: 1- 3-4 times a year 2- once a month, 3- twice a month, 4- it is difficult for me to remember

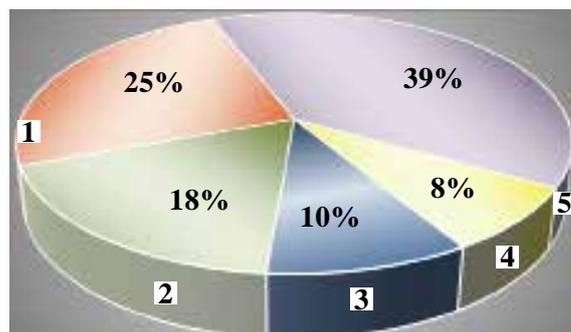


FIGURE 3 The level of interest of the pharmacy worker in the nature of the complaint in the case of cold and cough. Groups: 1- sometimes interested, 2- it depends on the pharmacy worker, 3- not interested, 4- it is difficult for me to remember, 5- interested.

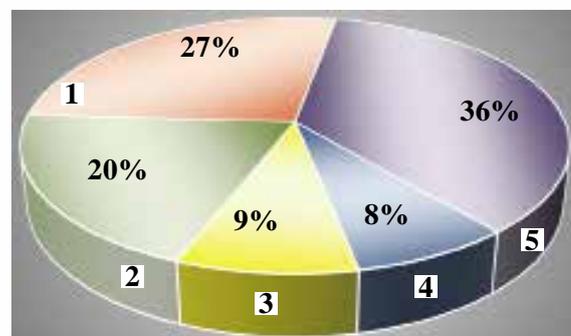


FIGURE 4. Explanations about the offered medicine by the pharmacy worker in case of cold and cough.

Groups: 1- sometimes explains, 2- it depends on the pharmacy worker, 3- doesn't explain, 4- it is difficult for me to remember, 5- explains.

col, the pharmacist should also educate, which means inform and explain the consumers and patients about the medicine prefer, the procedure of usage, and etc. Pharmaceutical companies carry out large-scale activities with the help of healthcare professionals to supply pharmacy staff with information, but pharmacy staff should take advantage of reliable, official sources to give a reasoned explanation for the medicine recommended for the patient.

All medicines have side effects [Kuhn M et al., 2016 ] which, according to WHO, are risk factors in the self-medication process and the pharmacy staff must inform the consumer about them.

We tried to reveal this by the following question: When buying cold and cough medicines following the advice of a pharmacy worker, does he/she warn you about the possible side effects of the medicine that he/she offers?

It was found out that 27% of the pharmacy workers inform, while the other 27% did not inform, and 23% inform sometimes about the side effects of discharged medicines (Fig. 5). We can assume that the pharmacy staff is not quite aware of the side effects of the medicines and the real damage. All this indicates that pharmacy staff should be regularly trained, use solid sources of information, and the pharmaceutical control authorities should develop appropriate legal norms.

The pharmacist should not only inform the patient about the side effects of the medicine, but also collect the side effects found by the patient in order to contribute to the pharmacovigilance work.

When buying cold and cough medicines following the advice of a pharmacy worker, does he/she warn you about the usage procedures of the medicine that he/she offers? This question is also important because the efficiency of the medicine depends on its correct use, so the consumer should be fully leaving the pharmacy. 51% of the pharmacy workers inform the consumer about medicine use procedure, the rest do this sometimes - 19%, depend on pharmacy workers - 15%, never warn - 8%, found it difficult to remember - 7% (see Fig. 6).

Medicine information on labels and inserts is a main source of information for patients as they attempt to balance the risks and benefits of medicines and manage them safely. This information is often incomplete and difficult for patients to understand. The pharmacist, as a health professional to come

into contact with the patient, plays an important role in patient education on medicine use. In order to reduce the risk of medication errors as much as possible, the pharmacy worker actively traces medicine interactions, keeps an eye on cases of self-medication by patients. The objective of this question was to assess the extent of pharmacists' involvement in the education of patients on medicine use. It is concluded that, although there are some deficiencies, pharmacy workers are providing information on medicines usage and patients have confidence in them. They should, therefore, acquire the proper training and communication skills to enable them to provide this service more effectively.

Pharmaceutical care starts with the diagnosis of dangerous symptoms, and then, in case of necessity, sending to a doctor or discharging OTC medicine [Chernykh P et al., 2002; Zupanets I, Bezugla N, 2013].

Have you ever turned to a doctor in case of cold and cough following the advice of a pharmacy worker? Due to this question we found out that 45%

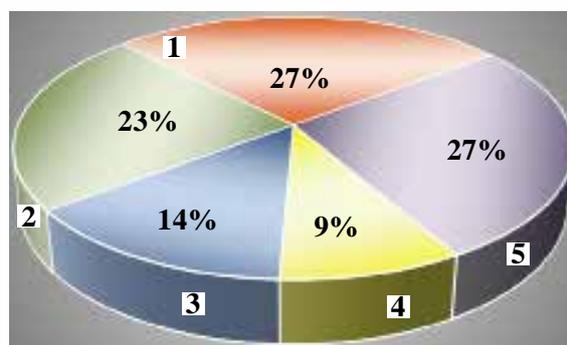


FIGURE 5. Notification of side effects during buying medicines for cold and cough by the advice of the pharmacy worker. Groups: 1- warns, 2 - sometimes warns, 3- it depends on the pharmacy worker, 4 - it is difficult for me to remember, 5- doesn't warn.

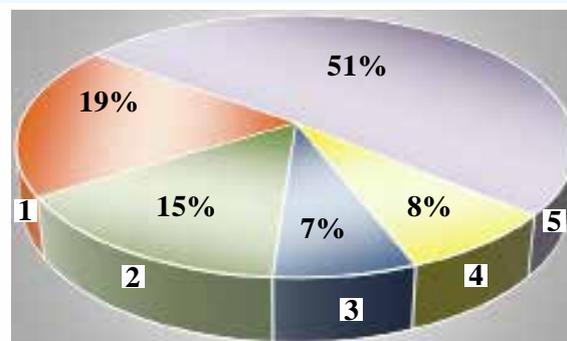
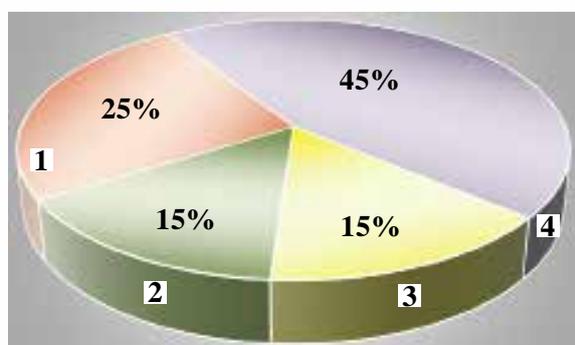


FIGURE 6. The pharmacist's instructions about how to take your medicine. Groups: 1 - sometimes warns, 2 - it depends on the pharmacy worker, 3 - it is difficult for me to remember, 4 - doesn't warn, 5 - warns.

of pharmacy workers usually do not guide the patient to a doctor at all, 25% - guide, sometimes - 15%, found it difficult to remember - 15% (see Fig. 7). The survey revealed that in case of common cold and cough, pharmacy workers mostly manage the diseases by themselves, not taking into account the further complications. Diseases at an early stage are easier to diagnose and treat, as well as the medicine discharged by a pharmacy worker may distort the clinical picture of serious disease and the results of the tests. So the pharmacy worker should be very careful about the nature of the complaints, be able to differentiate the dangerous symptoms and guide to the doctor in case of necessity. Patient - pharmacist - doctor correct collaborator is extremely important, which will lead to early detection of diseases and prevention of medical errors.

Information on the pharmacological group of the offered drug has started to be of interest to consumers because the information field has become available and consumers can get detailed information on the pharmacological group, the effects and prices of different medicines of that group.

In case of cold and cough do you inquire about the group of the medicine the pharmacy worker offers? By this question we tried to find out the consumers' interest in the offered medicine group, and the results are the following: are always interested - 38%, sometimes interested - 32%, never interested - 30% (see Fig. 8). As we have revealed, patients mainly deal with self-medication, so there is a risk that they can combin different medicines of the same pharmacological group. That's why it is desirable that the pharmacy worker will always inform the patient about the pharmacological group of discharged medicine.



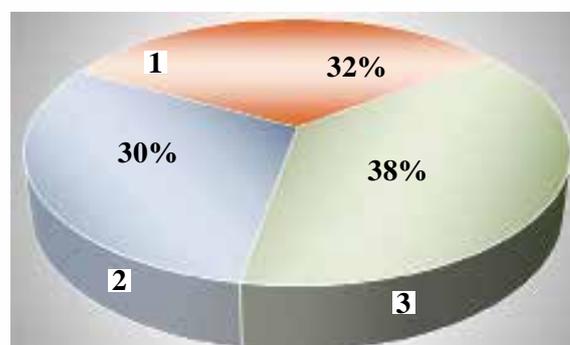
**FIGURE 7.** Data on applying for a doctor by the advice of a pharmacy worker. Groups: 1- turned, 2- it is difficult for me to remember, 3- sometimes turned, 4- haven't turned.

## DISCUSSION

According to the results of the study, in case of common cold and cough consumers are more likely to benefit from their knowledge, which means self-medication takes the leading position in the treatment of the mentioned diseases. According to the consumers, in case of cold and cough, the pharmacists are mainly interested in patient's complains and explains why the very medicine is offered. Each medicine has side effects that the pharmacist must inform the consumer about during medicine discharge. The responses of consumers who during survey were quite different from each other; yes and no answers were equal in percentage, and answer sometimes was a bit inferior to them. The pharmacy workers mainly inform the consumers about the discharged medicine usage procedure, but they rarely guide them to a doctor. Consumers' answer always require information about medicine pharmacological group makes the main percentage, though answers sometimes and never were not much less. Consumers also find it difficult to remember how often they buy cold and cough medicine with the advice of the pharmacy worker.

## CONCLUSION

In the case of common cold, cough self-medication mainly performed. Management of the self-treatment process is a rather big problem for both pharmaceutical management and public health. Consumers self-medication has a competent control necessity by the pharmacy worker. During self-medication management, it is desirable to develop information providing about side effects and early detection of hazardous symptoms. It is necessary to improve the professional education of the pharmacy worker by introducing the basics of pharmaceutical care.



**FIGURE 8.** Consumers' interest in pharmacological group of common cold and cough medicine offered in pharmacy. Groups: 1- sometimes inquire, 2- never inquire, 3- always inquire .

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