PREVENTIVE MEDICINE-LABORATORY   **ORIGINAL PAPERS**

SELF-MEDICATION-A PUBLIC HEALTH PROBLEM IN ROMANIA NOWADAYS. THE FIRST QUESTS

M. Manole[1], Odetta Duma[1*], Anca Gheorma[1], Alina Manole[1],
Ioana Păvăleanu[2], Natalia Velenciuc[3], Liliana Chelaru[4], Letiția-Doina Duceac[5]

"Grigore T. Popa" University of Medicine and Pharmacy Iasi

1. Department of Preventive Medicine and Interdisciplinarity
2. Department of Mother and Child Medicine
3. Department of Surgery (I)
4. Department of Morpho-Functional Sciences (I)
5. "Sf. Maria" Emergency Hospital of Children Iasi
*Corresponding author. E-mail: odettaduma@yahoo.com

SELF-MEDICATION-A PUBLIC HEALTH PROBLEM IN ROMANIA NOWADAYS. THE FIRST QUESTS (Abstract): Self-medication is an important part of the health care system, designed to educate the population in the spirit of responsibility for their own health, to inform and to provide medical and pharmaceutical services. Self-medication has a high prevalence in Romania where people choose to treat themselves by fever, headaches, cough, cold, and pain. **The aim of the study** was to evaluate the situation regarding self-medication in general population, estimated with a questionnaire. **Material and methods**: The study was conducted on 100 respondents aged 18-60 years, patients of an individual family medicine cabinet in Iasi County, North-East Romania. The instrument was a questionnaire consisting of 28 items and structured in two parts: a first part evaluating the respondent's demographic and socioeconomic data, and a second part exploring patient's perception of self-medication, mainly the frequency of use and cause. **Results:** The demographic structure of the study group showed an increased frequency of persons aged 35-44 years (22%), female gender (64%), from urban area (85%); 65% of whom are graduates of upper secondary education, most of them employed (52%) and married (63%). Romanian respondents claim that self-medication is a self-administered treatment (50%), take medicines after consulting websites (32%), for sore throat and fever (24%), because of the lack of money (35%), most of them being anti-inflammatories (30%), unaware of the risks of self-medication (50%), but thinking that one of the main risks could be inappropriate administration (41%), choosing self-medication as first option (12%), but also ask for a physician (69%). **Conclusions:** Self-medication is influenced by the sociodemographic characteristics of individuals such as age, morbidity, health and attitude, stress, and social rules. Getting a look at the elephant meaning this big issue named self-medication, using a questionnaire applied to specific groups of population could an important aspect that can help healthcare professionals to provide personalized counseling based on the specific needs to prevent self-medication risks and adverse effects of inappropriately use of medicines. **Keywords**: SELF-MEDICATION, PUBLIC HEALTH, ANTIBIOTICS, QUESTIONNAIRE.

Self-medication is defined as the administration of medicines by consumers to treat symptoms and mild health disorders recognized by themselves. This definition was included in *Declaration of Alma-Ata*, adopted by UNICEF/WHO experts at Conference of Primary Care in 1978 ("*The people have the right and duty to participate individually and collectively in the planning and implementation of their health care.*") (1). One of the basic characteristics of self-medication is the patient's responsibility for own health, so that Association of the European Self-Medication Industry (AESGP) has replaced the term of "self-medication" with "responsible self-medication" in 1994. It is noteworthy that the self-administration of unqualified medicines (on the recommendation of friends, from the remnants of drugs purchased previously, etc.) cannot be qualified as self-medication and is contra-indicated, although such cases occur very often daily. The notion of self-medication implies improving health in the case of mild illnesses, chronic illnesses ingravescence, or first aid until the physician arrives (2-4).

Applying preventive measures to reduce the risk of illness, detecting symptoms at early stages to prevent illness or disease progression is defined as self-prophylaxis. Self-medication and self-prophylaxis are two parts of the *responsible self-medication* design concept and a component of the primary healthcare. It also included healthy lifestyle, smoking cessation, moderate alcohol consumption, correct medication management, etc. Self-medication is currently a constituent part of the healthcare system designed to educate the population in the spirit of responsibility for their own health, to inform and to provide medical and pharmaceutical services. Self-medication has a high prevalence in Romania where people choose to treat themselves from fever, headache, cough, and cold. The most common medicines used without prescription (OTC) are vitamins and supplements, cough and fever pills, analgesics and antibiotics. Many parents give medicines to their children without any medical advice (5, 6).

Sources of self-medication could be friends, relatives, neighbors, or pharmacists, previous prescriptions or suggestions from commercials. Self-medication could be described as the ability of the population to play an independent and informed role in terms of preventive, diagnosis and treatment activities management that concern themselves. There are many healthcare systems that encourage population for self-prophylaxis and self-care of minor diseases using responsible self-medication to reduce treatment costs, patient and physician time. One of the most important issues linked to self-medication could be the antimicrobial resistance, reported in developing countries where antibiotics are available without prescription, as well as serious incidents due to side effects. To decrease the frequency of them, healthcare professionals should take measures to claim responsible self-medication, achieved by a safe access to medications, correct indications for use and the accessibility of medical consult if needed (7).

The aim of this study was to evaluate the situation regarding the self-medication among a Romanian population group, based on the questioning of the patients. The secondary aims were to raise awareness of the importance of drug use safety issues and to assist professionals in detecting and reporting side effects or other drug-induced problems.

MATERIAL AND METHODS

The study was conducted on 100 respondents, as patients of an individual family medicine cabinet in Iasi County, North-East Romania, aged between 18 and 60 years. The method was the survey of opinion using as instrument a questionnaire consisting of 28 items and structured in two parts: a first part evaluating respondent's demographic and socioeconomic data, and a second part exploring patient's perception of self-medication, mainly the frequency of use and cause. The questionnaires were anonymous to give the participants the opportunity to express their opinions freely.

The questionnaire was handed to each patient separately, explaining the study purpose and taking the oral informed consent before the interview. This consent claimed that participants had no risk if they refuse to participate in the study or cease collaboration during the application of the questionnaire.

Data were processed using *SPSS 20.0.*

RESULTS

1. Demographic and socioeconomic characteristics of participants

Iasi County is in the North-East Romania, Europe, with a population of over 700,000 inhabitants, and a demographic and social structure like the whole geographic area. There is no specific regional pathology, but common colds, diarrheal diseases in young people, and cardiovascular diseases, diabetes mellitus, rheumatic disorders, dental and oncological pathology in elderly adults are predominant (8).

The demographic structure of the study group showed an increased frequency of persons 35-44 years (22%), female gender (64%), from urban area (85%); 65% of them are graduates of upper secondary education, most of them employed (52%) and married (63%) (tab. I, fig. 1).

TABLE I.
Demographic and socioeconomic characteristics of participants, Iasi County,North-East Romania, 2016 (n=100)

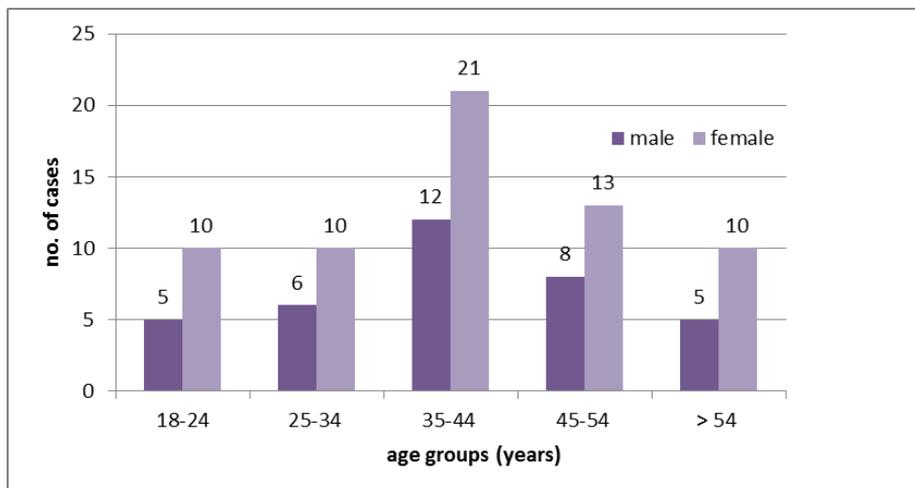| Characteristics	Absolute frequency
Age (years)	
18-24	15
25-34	16
35-44	22
45-54	18
> 54	18
Gender	
Male	36
Female	64
Residence area	
Urban	85
Rural	15
Education	
Primary	4
Secondary	31
University	65
Occupation	
Employee	52
Retiring	15
Student	8
House-person	8
Unemployed	7
Maternity leave	3
Other	7
Social status	
Married	63
Unmarried	27
Divorced	5
Widow	5

Fig. 1. Distribution by age and gender

2. First quests - items 7-15

Item 7: "Definitions of self-medication by patients". More than half of the respondents said they knew what self-medication means „self-medication treatment" (50%) or "independence in maintaining their own health" (24%). **Item 8:** "The initial source of information that urges the patient to self-medication"**.** 32% of respondents said they were taking medication after consulting websites. 30% of those considered the opinion of their family members about the selection of drugs. Only 11% were given self-medication because of viewing the advertisements (tab. II).

Item 9: "Pathological conditions for which self-medication was applied" were considered cold states (sore throat, cough, fever) - 24%, pains - 19%; headaches, insomnia, asthenia - 15%; dermatitis, acne, mycosis -14%; gastrointestinal tract disorders (vomiting, diarrhea) - 10%; avitaminosis - 6%.

Item 10: "Causes of self-medication". Among the reasons for the self-medication they mentioned: lack of money - 35%; advertising - 20%; permissive legislation -

11%; difficult access to medical services - 7% (tab. IV).

TABLE II
Definitions of self-medication by patients. Sources of information

Items	%
Definitions of self-medication	
Treatment with medication out one's own head	50
Independence in maintaining their own health	24
Purchasing drugs directly from the pharmacy and using them on their own	17
Obtaining medical advice and purchasing medicines in the pharmacy	9
Initial source of information for self-medication	
Internet	32
Relatives, friends	30
Radio advertising	15
Brochures, magazines	12
TV advertising	11

TABLE IV
The most common conditions for which self-medication was used. The main reasons

Items	%
Most common pathological conditions	
Cold states (sore throat, cough, fever)	24
Pains	19
Central Nervous System disorders (head-	15
Dermatological conditions (herpes, acne,	14
Gastrointestinal tract-disorders (vomiting,	10
Avitaminosis	6
Contraception	5
Obesity	4
Quitting smoking	2
Main reasons	
Lack of money	35
Advertising	20
Permissive legislation	11
High costs	20
Accessibility	7
Difficult access to medical services	7

TABLE V
Frequently administered drugs as self-medication

Drugs as self-medication	%
Antibiotics	17
Anti-inflammatory drugs	30
Antiallergic drugs	13
Local topics	8
Gastric anti secretory drugs	8
Contraceptives	7
Antidiarrheal drugs	6
Antitussives	5
Vitamins	6

TABLE VI
Risks of self-medication

Items	%
Risks of self-medication without supervising of a physician	
Not at all	50
To a less extent	35
To a higher extent	15
Main risks related to self-medication	
Inappropriate administration	41
New symptoms or diseases	18
Overdose	15
Drug interactions	10
Aggravation	9
Expiration	7

Item 11: "Frequently administered drugs". Regarding the drug most frequently administered without a physician or pharmacist opinion: anti-inflammatory drugs - 30%; antibiotics - 17%; antiallergic drugs - 13%; local topics - 8%; gastric antisecretory drugs - 8%; contraceptives - 7% (tab. V).

Item 12: "To what extent do you know the risks of administering drugs without supervising your physician?". It is noticed that only 15% of respondents knew the risks of self-medication. **Item 13:** "The main risks related to self-medication". Patients answered that inappropriate administration (41%); the appearance of new symptoms or diseases (18%); overdose (15%); dangerous drug interactions (10%) could be some of self-medication risks (tab. VI).

Item 14: "If you get sick, do you choose self-medication at first?". 88% of respondents said they did not take medication without consulting a physician, while 12% of them considered themselves sufficiently informed to administer their own

medication when suffering of minor affections, thinking they have as many rights and responsibilities as their own health and medical professionals. **Item 15:** "If you get sick, do you consult a physician at first?". 89% of respondents believed that it is necessary to consider the physician's opinion in case of illness, while 11% said they administered medication and the most cited reason for self-medication was previous experience (tab. VII).

TABLE VII.
Self-medication or physician at first?

Items	%
Self-medication at first	
Total disagreement	88
Agreement	11
Total agreement	1
Physician at first	
Total disagreement	11
Agreement	20
Total agreement	69

3. Cronbach alfa calculation

After calculating the Cronbach alpha coefficient, the results showed a value of **0.718** for 12 items taken into consideration (tab. VIII).

TABLE VIII
Cronbach alpha coefficient.
Case Processing Summary

		N	%
Cases	Valid	100	100
	Excluded[a]	0	.0
	Total	100	100.0

a. List wise deletion based on all variables in the procedure

Reliability Statistics

Cronbach's Alpha	No. of items
.718	12

DISCUSSION

Self-medication is an important public health issue, especially in developing countries such as Romania, India, China, and countries where access to healthcare is costly, where it is one of the preferred ways of patients to treat their symptoms. Several studies have shown that self-medication can provoke delays in medical care, leading to paradoxical economic losses due to delayed diagnosis and delayed appropriate treatment. Also, self-medication can lead to drugs interactions that could be prevented if the patient consulted a physician at first. Self-medication for drugs such as antibiotics can lead to antimicrobial resistance (9, 10).

Self-medication is a widespread phenomenon, with an increasing incidence, difficult to quantify, affecting all age groups, but especially people over 65. As for adolescents and young adults, 35% of them use self-medication. Of those over the age of 54, 19% use self-medication. The risks of this practice in elder persons are the same as in younger individuals, but they occur much more frequently and have a higher severity due to the multipathology and multimedication often present in this category of patients as well as the fragility of elders. The study states that self-medication is more frequent among women in all age groups. According to our research, women with higher education and aged 35-49 are more likely to provide medicines to children without a medical consultation. The increasing prevalence of lifestyle and chronic conditions requires education regarding the treatment and effective communication strategies to allow patients to play an active role in chronic disease management or for motivational counseling (11, 12).

Medicines play a key role in ensuring or maintaining people's health, but they are not always used rationally. The rational use of medicines implies their appropriate use. This means that patients administer medications at appropriate, correct doses, when necessary, during the relevant period and at the lowest cost for them, avoiding unnecessary medications or whose use is unlikely to lead to health benefits (13).

More than 50% of countries do not carry a substantive policy to promote the rational use of medicines. In developing countries, less than 40% of patients from state sector and 30% of those from private sector are treated according to clinical guidelines. Excessive and irrational use of antibiotics leads to increased antimicrobial resistance, consequently a growing number of antimicrobial drugs become ineffective in the treatment of infectious diseases. Adverse drug reactions caused by abuse in their use, allergic reactions can lead to aggravation of the disease, undermining patient confidence in the healthcare system. Excessive use of a limited number of medications may result in their lack or inaccessible costs, undermined patient confidence. Unsatisfactory or negative results in treatment, caused by inappropriate use of drugs, may also undermine confidence (14-16).

The alpha coefficient, commonly referred to as *Cronbach alpha* (α), was proposed by the American psychiatric Lee J. Cronbach, in 1951. Although not the only indicator of fidelity, Cronbach alpha is by far the most used and most commonly reported in the literature. There is no absolute standard of the size that a Cronbach alpha coefficient should have to indicate an appropriate fidelity. Values around 0.90 are considered *excellent*, and around 0.80, *very good*, and those around 0.70, *appropriate*. The importance of the Cronbach alpha coefficient can be better understood if we place it on the terms of the relationship between validity and fidelity. A measurement can be reliable, but not necessarily valid. Validity refers to the accuracy of measurement, that is, to its ability to properly reflect what we want to measure and not something else (17).

CONCLUSIONS

Self-medication is influenced by the sociodemographic characteristics of individuals such as age, morbidity, health and attitude, stress, and social rules. Getting a look at the elephant meaning this big issue named self-medication, using a questionnaire applied to specific groups of population could an important aspect that can help healthcare professionals to provide personalized counseling based on the specific needs to prevent self-medication risks and adverse effects of inappropriately use of medicines.

REFERENCES

1. ***World Self-Medication Industry. *The story of self-care and self-medication. 40 years of progress, 1970-2010*. Available online at: http://www.wsmi.org/wp-content/data/ pdf/storyofselfcarebdpage.pdf [Accessed on: 08.08.2017].
2. Damian L, Lupuşoru CE, Ghiciuc CM. Self-medication with antimicrobial drugs among university students in a Northeast region of Romania. *Rev Med Chir Soc Med Nat Iasi* 2014; 118(1): 160-164.
3. Ruiz ME. Risks of self-medication practices. *Curr Drug Saf* 2010; 5(4): 315-323.

4. Porteous T, Bond C, Hannaford P, Sinclair H. How and why are non-prescription analgesics used in Scotland? Fam Pract. 2005; 22: 78-85.
5. Şerban G, Buhaş SE. Study on self-medication: nonsteroidal antiinflammatory drugs. Analele Universităţii din Oradea, Fascicula: Ecotoxicologie, Zootehnie şi Tehnologii de Industrie Alimentară Vol. XIII/A, 2014, 215-224.
6. Grigoryan L, Haaijer-Ruskamp FM, Burgerhof JGM *et al.* Self-medication with antimicrobial drugs in Europe. *Emerg Infect Dis* 2006; 12(3): 452-459.
7. Bennadi D. Self-medication: A current challenge. *J Basic Clin Pharm* 2014; 5(1): 19-23.
8. ***Ministry of Health. *Anuarul statistic*, 2015. Bucuresti, 2016.
9. Selvaraj K, Ganesh Kumar S, Ramalingam A. Prevalence of self-medication practices and its associated factors in Urban Puducherry, India. *Perspect Clin Res* 2014; 5(1): 32-36.
10. Jain S, Malvi R, Purviya JK. Concept of self-medication: A review. *Int J Pharm Biol Arch* 2011; 2: 831-836.
11. Joshi MC, Shalini, Agarwal S. A questionnaire based study of self-medication practices among young population. *Res. J. Pharm., Biol. Chem. Sci* 2011; 2: 761-766.
12. Shehnaz SI, Agarwal AK, Khan N. A systematic review of self-medication practices among adolescents. *J Adolesc Health* 2014; 55(4): 467-483.
13. Brumărel M, Adauji S, Ţurcanu A. Unele aspecte ale promovării medicamentelor în Republica Moldova. In: *Analele ştiinţifice ale USMF "Nicolae Testemiţanu"*. Ed. a 12-a. Chişinau: CEP Medicina, 2011, vol. 1: *Probleme medico-biologice şi farmaceutice*, 367-372.
14. Afolabi AO. Factors influencing the pattern of self-medication in an adult Nigerian population. *Ann Afr Med* 2008;7(3):120-127.
15. Yuefeng L, Keqin R, Xiaowei R. Use of and factors associated with self-treatment in China. *BMC Public Health* 2012; 12: 995.
16. Ylinen S, Hämeen-Anttila K, Sepponen K, Lindblad AK, Ahonen R. The use of prescription medicines and self-medication among children-a population-based study in Finland. *Pharmacoepidemiol Drug Saf* 2010; 19(10): 1000-1008.
17. Tavakol M, Dennick R. Making sense of Cronbach's alpha. *Int J Med Educ* 2011; 2: 53-55.

NEWS

MORPHOLOGIC, MOLECULAR, AND TAXONOMIC EVOLUTION OF RENAL CELL CARCINOMA: A CONCEPTUAL PERSPECTIVE WITH EMPHASIS ON UPDATES TO THE 2016 WORLD HEALTH ORGANIZATION CLASSIFICATION

The recently released 2016 World Health Organization classification now recognizes 12 distinct RCC subtypes, as well as several other emerging/provisional RCC entities. In this paper, the authors provide a conceptual framework for approaching RCC diagnosis and classification. The expanding number of recognized RCC entities in the 2016 WHO classification requires surgical pathologists to integrate clinical, radiologic, gross, and microscopic findings to successful differential diagnoses in RCC classification. In routine clinical practice, accurate RCC classification may have important implications for patients and their families, including prognostic risk stratification, targeted therapeutics selection, and identification for genetic testing (Udager AM and Mehra R. Morphologic, Molecular, and Taxonomic Evolution of Renal Cell Carcinoma: A Conceptual Perspective with Emphasis on Updates to the 2016 World Health Organization Classification. *Arch Pathol Lab Med* 2016; 140(10): 1026-1037).

Doina Butcovan