Self-Medication Practice and the Attitude Towards Medical and Pharmaceutical Care

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Abstract

The present study was conducted on 1068 participants from Romania to assess the association between the practice of self-medication, the attitude towards medical services, and personal characteristics. In our survey, we used a questionnaire to collect data such as age, gender, residence, and level of education of the participants, their attitude towards medical services, satisfaction with doctors, and details on the practice of self-medication. The Crosstab-Chi Square test was used to assess the association between the experimental variables. The results indicate a specific relevant association between personal characteristics such as age, gender, residence, education, and self-medication practice. Research on self-medication but also health education policies must take into account the association between personal characteristics and various behaviors of the population on health decisions. Based on the analysis of the impact of personality traits we can predict the medical behavior of individuals in various situations. Given the global difficulties encountered in recent medical campaigns, a better understanding of the causes of skeptical or defensive attitudes of the population towards medical services could improve this situation.

Keywords: Self-medication, Medical care, Pharmaceutical care, Personal characteristics, Health policies, Health education

INTRODUCTION

Self-medication is a global practice that has grown in many countries regardless of geographical area [1]. It is defined as the use of drugs by the patient without a medical evaluation to treat self-diagnosed disorders or symptoms, or the selection and intermittent or continuous use by a patient of drugs for chronic or recurrent diseases, after an initial diagnosis established by the doctor [2-5]. The potential risks identified as a result of self-medication practices are delays in going to the doctor, incorrect self-diagnosis, incorrect choice of appropriate medication, therapy, incorrect dosage and administration of the drug, and the danger of interaction with other drugs, diagnosis or occurrence of certain cases of drug addiction or abuse [2]. The incriminating factors that contribute to the practice of self-medication are the inability to access quality medical services, medical fees, lack of time, fear of the doctor or lack of trust in the doctor, as well as insufficient health education [6-8]. Recent research shows that another factor that contributes to and maintains the practice of self-medication is the release of over-the-counter (OTC) drugs [8-10]. Numerous studies have been conducted on self-medication among students in several areas of the globe [11-15], including Romania [16], as well as meta-analyzes of the prevalence of self-medication among students [17]. The number of studies addressing the issue of self-medication in Romania is relatively small [18-21]. All these implicit dangers must be analyzed as accurately as possible. Personal factors, such as gender, age, level of education, or urban or rural residence, along with the attitude towards medical services play an essential role in the general population, regardless of geographical or cultural background. By trying to advance the elucidation of these factors, we will be able to prevent the dangers of self-medication and develop appropriate health education policies.

We conducted this study to indirectly contribute to improving the success rate of medical campaigns. This research aims to contribute to a better knowledge of the behavioral mechanisms involved in self-medication. It also aims to raise public awareness of the health risks of self-medication. Our main goal was to highlight an area of personal traits that can be explored significantly more to highlight the practice of self-medication. The importance of public health education, the role of physicians and pharmacists in the proper communication and guidance of patients and clients, and the need to develop effective public health policies leading to the

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reduction and prevention of self-medication among the population [22, 23].

MATERIALS AND METHODS

The present exploratory research was conducted on a sample of 1068 participants from Romania. The data was collected using a questionnaire that, in addition to gathering the basic data on the characteristics of the sample, explored when participants turn to the doctor, how often they turn to medical services, what fears participants have about visiting the doctor, how they trust the doctor, how satisfied are they with the attention given by the doctor, how often they practice self-medication without consulting a doctor, the source of participants' information about medication, health and disease and what kind of medication they take without the consultation of a doctor.

The entire data was set up in 4 clusters to apply a cross-tabulation analysis on the clustered variables extracted from the questionnaire. Custer A consists of basic data – gender, residence, age, education, cluster B consists of data regarding details on visiting the doctor (situations, frequency, fears), cluster C contains data on trusting medical services (trust, satisfaction) and cluster D contains data on self-medication (self-medication, sources of trusted information, types of medicines used). Clusters B, C, and D were processed concerning cluster A, using cross-tabulation analysis.

There are certain limitations given the sample of participants concerning the education level. Most of the participants (849 – 79.5%) have university-level education and only 0.4% (4) participants have primary level education and only 1.6% (17) have gymnasium level education. Given this situation, to apply crosstabs-analysis we used mainly the high-school and university level categories when analyzing different clusters concerning the educational level.

RESULTS AND DISCUSSION

Regarding the descriptive analysis of the participants, there were 738 (69.1%) women and 330 (30.1%) men participants in the study. 375 (64.9%) had their residence in rural areas and 693 (35.1%) in urban areas. 76 (7.1%) of the participants were in the 14-18 age group, 659 (61.7%) in the 18-25 age group, 207 (19.4%) in the 25-40 age group, 78 (7.3%) in the 40-55% age group and 48 (4.5%) in the 55+ age group. 4 (0.4%) of the participants had primary education, 17 (1.6%) had gymnasium level education, 198 (18.5%) had high-school level education and 849 (79.5%) had university-level education.

Several dimensions of participants' attitudes concerning health services were analyzed.

Analysis of Cluster B – Details on Visiting the Doctor
Situations of Visiting a Doctor

By using Chi-Square analysis on data from cluster B regarding the situations in which the participants visit the doctor (**Table 1**) concerning data from cluster A (gender, residence, age, education), we obtained the following results:

Table 1. Situations when participants visit the doctor.

Only in emergencies	Only if they are experiencing severe health conditions	Whenever they feel seek
221 (20.7%)	408 (38.2%)	312 (29.2%)

There is a significant relationship between gender (male, female) and the situation in which participants decide to visit the doctor ($\chi2=37.9$, DF=3, p=0.01). 16.7% of women visit the doctor only for emergencies, as for the men 29.7% turn to the doctor in the same situation. For severe health conditions, 37.8% of women and 39.1% of men turn to the doctor. For general health issues, 34% of women and only 18.5% of men visit the doctor. If there is any light health concern, 11.5% of women and 12.7% of men visit the doctor.

The data from the study also indicates that there is no significant association between the age of the participants and their habits on visiting the doctor, but it is close to the level of significance ($\chi2=19.2$, DF=12, p=0.08). The data highlights that participants tend to visit the doctor more often for general health issues as their age increases – 37.5% of participants within the age category 55+, and 32.1% within the age category 40-55 tend to visit the doctor for general issues, as for the participants from the age category 14-18, 22.4% turn to the doctor in the same situation, also 29.6% of the participants from the age category 18-25 and 27.5% of the participants from the age category 25-40.

How Often Do the Participants Use the Services of a Doctor

By using Chi-Square analysis on data from cluster B regarding the frequency of the participants visiting the doctor (**Table 2**) concerning data from cluster A (gender, residence, age, education), we obtained the following results:

Table 2. Frequency of visits to the doctor.

Very often	Often	Sometimes	Rarely	Very rarely
10 (0.9%)	53 (5%)	249 (23%)	501 (46.9%)	255 (23.9%)

There is a significant association between gender (male, female) and the frequency with which participants decide to visit the doctor ($\chi2=39.36$, DF=4, p=0.01). We can highlight that 34.3% of women tend to visit the doctor frequently (sometimes, often, very often) as only 17.8% of men tend to visit the doctor with the same frequency.

The data suggests that there is a link between the residence of participants and the frequency with which they decide to visit the doctor, and we can highlight a clear association ($\chi2=20.1$,

DF=4, p=0.01). Participants that reside in the rural areas, 36.8%, tend to visit the doctor more frequently (sometimes, often, very often) than participants from urban areas, 25.1% or the same frequency (sometimes, often, very often). We have to mention that participants, even if from rural areas, have a high level of education.

The data from the study indicates that there is no significant association between the age of the participants and the frequency with which they decide to visit the doctor ($\chi2=15.5$, DF=12, p=0.21). We can highlight that 10.4% of the participants from the 55+ age group tend to visit the doctor often and very often. This is greater than the average of 6.25% from the rest of the age groups (14-18, 18-25, 25-40, 40-55).

Fears of Participants Regarding the Visit to a Doctor

By using Chi-Square analysis on data from cluster B regarding the fears of the participants regarding visiting the doctor **(Table 3)** concerning data from cluster A (gender, residence, age, education), we obtained the following results:

Table 3. Fears regarding the visit to the doctor.

Large costs	Inappropriate the attitude of the doctor	Low professional level	Large queue	No fears
197 (18.4%)	34 (3.2%)	141 (13.2%)	249 (23.3%)	447 (41.9%)

There is a significant association between gender (male, female) and the fear of the participants regarding visiting the doctor ($\chi2=13.13$, DF=4, p=0.01). 4.1 % of the women tend to fear the inappropriate attitude from the doctor, whereas only 1.2% of men are in this situation. 22.7% of the men tend to fear the large costs and only 16.5% of the women have the same fear. Also, 24.5% of the women tend to dislike the large queues and only 20.6% of men participants reported this issue.

Our data suggest that there is a link between the residence of participants and their fears regarding visiting the doctor, and we can highlight a clear association ($\chi2=16.9$, DF=4, p=0.01). We can highlight that 23.2% of participants from rural areas fear the large costs and only 15.9% of participants from urban areas have the same fear. Also, 4.8 % of the participants from rural areas are afraid of an inappropriate attitude from the doctor, whereas only 2.3 % of the urban participants have the same fear. It is interesting to mention also that 14.9% of urban participants have a fear of low professionalism from the doctor and only 10.1 % of the rural participants share the same fear.

There is a significant association between age and the fear of the participants regarding visiting the doctor ($\chi2=35.33$, DF=16, p=0.01). We can highlight that 26.1% of participants from the age group 25-40 and 29.2% of the participants from

the 55+ group have a fear of large costs. Also, 31.6% of young participants from the age group 14-18 have a fear of large queues. Also, 48.7% of young participants (14-18) and 47.9% of participants from the 55+ age group have no fears regarding visiting the doctor.

Analysis of Cluster C – Trust and Satisfaction with Medical Services

Trust in Doctors

By using Chi-Square analysis on data from cluster C regarding the trust of the participants in the doctor **(Table 4)**, concerning data from cluster A (gender, residence, age, education), we obtained the following results:

Table 4. Trust in doctors.

Very much	Much	Average	Low	Very low
111 (10.4%)	430 (40.3%)	477 (44.7%)	35 (3.3%)	15 (1.4%)

There is a significant association between gender (male, female) and the trust of the participants in the doctor ($\chi2=21.26$, DF=4, p=0.01). 52.7% of women participants tend to trust doctors much and very much and 46.1 % of men have the same level of trust. Also, only 3.2% of the women participants have a low and very low level of trust in the doctor and 7.8% of men have the same level of trust in doctors.

The data suggests that there is a link between the residence of participants and their trust in doctors ($\chi2=19.05$, DF=4, p=0.01). We can highlight that 54.9% of urban participants have much and very much trust in doctors, and only 42.9% of rural participants share the same trust level.

Satisfaction with the Attention Given by the Doctor
Our data suggest that there is high satisfaction with the attention given by the doctor in the research sample **(Table 5)**.

Table 5. Satisfaction with the attention given by the doctor.

High	Low
985 (92.2%)	83 (7.8%)

Analysis of Cluster D – Self-Medication Practice

Intake of Medication without Consulting a Doctor
By using Chi-Square analysis on data from cluster D regarding participant's intake of medication without consulting a doctor **(Table 6)**, concerning data from cluster A (gender, residence, age, education), we obtained the following results:

Table 6. Intake of medication without consulting the doctor.

Yes	Sometimes	No
361 (33.8%)	605 (56.6%)	102 (9.6%)

There is a significant association between gender (male, female) and participants' intake of medication without consulting a doctor ($\chi2=22.76$, DF=2, p=0.01). 38.3% of the women participants tend to take medication without consulting a doctor and only 23.6% of men participants report the same intention.

The data suggests that there is no strong link between the residence of participants and the practice of self-medication ($\chi2=6.69$, DF=2, p=0.35). Still, we can highlight the tendency that 61.1% of rural participants tend to take medication without consulting a doctor whereas only 54.3% of urban participants have a similar tendency.

There is a significant association between the age of participants and the practice of self-medication ($\chi2=37.76$, DF=8, p=0.01). We can highlight that only 21.1% of the participants from the 14-18 age group and 18.8 % of the participants from the age group 55+ are taking the medication without consulting the doctor.

The Main Source of Information on Diseases, Health, and Medication

By using Chi-Square analysis on data from cluster D regarding participants main source of information on diseases, health, and medication **(Table 7)**, concerning data from cluster A (gender, residence, age, education), we obtained the following results:

Table 7. Main source of information on diseases, health, and medication.

Doctor	Pharmacist	Family	Friends	Internet	TV
429 (40.2%)	175 (16.4%)	124 (11.6%)	26 (2.4%)	283 (26.5%)	31 (2.9%)

There is a significant association between gender (male, female) and the main source of information on diseases, health, and medication ($\chi2=47.78$, DF=5, p=0.01). Data from the study shows women participants tend to get information more from doctors and pharmacists (62.1%). Only 43.9% of men participants are using the same sources and they get their information using the internet and television (41.2%). Only 24.2% of women participants use those two sources.

Our research data suggests that there is an association between the residence of participants and their information sources on health and medicine ($\chi2=14.8$, DF=5, p=0.01). 43.6% of urban participants are relying on information from doctors and only 33.9% of rural participants rely on the same sources. 37.9% of participants from rural areas seek information on the internet, television, and from friends, whereas only 28.6 % of the urban participants use those sources.

There is a significant association between age and the main source of information on diseases, health, and medication ($\chi2=100.82$, DF=20, p=0.01). We can highlight that 46.1% of participants from the age group 14-18, 56.4% of the participants from 40-55 age group, and 54.2% of the 55+ group participants get their information from doctors and only 38.5% of participants from the 18-25 age group and 33.8% of the participants from 25-40 age group use the same source. For those groups, our data reveals the extensive use of the internet in getting such information on diseases, health, and medication – 26.7% for the 18-25 group and 40.1% for the 25-40 age group.

There is also a significant association between the education level of participants and the main source of information on diseases, health, and medication ($\chi2=12.59$, DF=5, p=0.02). The data shows that participants with high-school-level education tend to use more information from the family (14.6%) than the participants with university-level education (10.8%). Also, participants with university-level education will use the internet in a greater percentage (27.6%) than high school-level education participants (22.7%). Participants with university-level education have a slightly higher percentage (40.4%) than participants with high-school-level education (37.9%) when it comes to getting information straight from the doctors.

Medicines are Taken without Consulting a Doctor (Self-Medication)

A descriptive analysis of the data collected from the study sample indicates that when it comes to self-medication, 52,3% of the participants use painkillers, 31,1% use flu medicine, 6,9% don't take medicine without the advice of a doctor or a pharmacist, 4,3% use plant-based medicines and vitamins, 1,9% use digestive medicines, 1,5% use antibiotics, 1% use strong anti-inflammatory medicine and 0,9% use another kind of medicine.

By using Chi-Square analysis on data from cluster D regarding medicines taken by participants without consulting a doctor, concerning data from cluster A (gender, residence, age, education), we obtained the following results:

There is a significant association between gender (male, female) and medicines taken by participants without consulting a doctor ($\chi2=34.29$, DF=7, p=0.01). 56.6 % of women tend to take painkillers without consulting a doctor and only 42.7% of men participants in our study do so. Regarding the flu medication, 35.2% of men tend to take it without consulting a doctor whereas only 29.3% of women participants tend to do the same. Men tend to take plant-based medication and vitamins without consulting a doctor in 7.6% and women participants are using them in a percentage of 2.8

%. 10% of men participants take no medication without consulting a doctor and only 5.6% of women participants responded that they act in the same way.

There is a significant association between residence and medicines taken by participants without consulting a doctor ($\chi2=18.6$, DF=7, p=0.01). 55.7% of urban participants use the painkillers without consulting the doctor and 46.1% of rural residents use the same medicine without consulting the doctor. 37.1% of rural residents tend to use flu medicine in the same manner, whereas only 27.8% of urban participants do the same.

There is a significant association between age and medicines (painkillers and flu medication) taken by participants without consulting a doctor ($\chi2=18.6$, DF=7, p=0.01). We can highlight that 82.4% of young participants aged 14-18 report the use of painkillers without consulting the doctor.

CONCLUSION

The results of the present study on self-medication are based on a primary analysis regarding the association between variables categorized in 4 clusters and an interpretation based on descriptive data processing. The study's purpose was to get basic information regarding the general context of self-medication practice and the data obtained from the research to indicate that the practice of self-medication is closely related to factors such as age, gender, residence, or level of education. Self-medication can be better understood concerning such characteristics which can become a basis for further educational policies [24] on health issues.

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