

An overview of self-treatment and self-medication practices among Slovenian citizens

Razširjenost samooskrbe in samozdravljenja med prebivalci Slovenije

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Ključne besede:

družinska medicina, presečna raziskava, predpisovanje zdravil, zdravila na recept, zdravila brez recepta

Key words:

family practice, cross-sectional study, prescription, prescription drugs, non-prescription drugs

Izvleček

Izhodišča: Namen raziskave je pridobiti podatke o razširjenosti uporabe različnih metod samozdravljenja v Sloveniji. Osredotočili smo se na različne oblike samozdravljenja, razloge za njihovo uporabo, in razlike v uporabi glede na osebne in socialno-ekonomske razlike med prebivalci.

Metode: Raziskava je presečna in temelji na anonimnem vprašalniku, ki smo ga aprila 2009 poslali na dom tisoč polnoletnim prebivalcem Republike Slovenije, ki smo jih naključno izbrali s pomočjo telefonskega imenika. Podatke smo statistično analizirali s pomočjo programa SPSS 13.0. Raziskavo je odobrila Državna komisija za medicinsko etiko.

Rezultati: V analizo smo vključili 41,0 % vsebinsko pravilno izpolnjenih anket. Kar 51,0 % anketirancev je v preteklem letu uporabilo eno od oblik samozdravljenja. 69,3 % anketirancev je uporabilo zdravila v prosti prodaji, 38,3 % pa zdravila, ki jih sicer dobijo na recept. 83,1 % je zdravila kupilo v lekarni, kar 23,0 % pa jih je dobilo pri prijateljih in sorodnikih. Posamezne lastnosti anketirancev so bile statistično značilno povezane z uporabo nekaterih oblik samozdravljenja. Ženske so v primerjavi z moškimi pogostejše uporabnice zdravil brez recepta ter pripravkov z vitamini in minerali in jih tudi pogosteje kupijo v lekarni. Tudi študentje in aktivni zavarovanci uporabljajo zdravila, ki jih kupi v prosti prodaji in v lekarni, pogosteje kot upokojenci in nezaposleni.

Zaključki: Ugotovili smo, da so različne oblike samozdravljenja zelo pogoste. V večini so sorazmerno varne. Večino zdravil občani kupijo v lekarnah, kjer jim je na razpolago tudi farmacevtsko svetovanje oz. t.i. farmacevtska skrb. Zdravniki morajo upoštevati samozdravljenje, pri bolnikih vzeti podrobno anamnezo samozdravljenja in izkoristiti vsak posvet z bolnikom za pouk o pravilni in varni uporabi predpisanih zdravil in zdravil v prosti prodaji.

Abstract

Background: The aim of this study was to acquire data related to the prevalence of self-medication use among inhabitants of Slovenia. We focused on the use of different self-medication practices, reasons for their use, the groups that use them, and probable association with socioeconomic status of an individual user.

Methods: This is a cross-sectional study, based on anonymous questionnaires, posted in April 2009 to one thousand randomly chosen inhabitants in all regions of the Republic of Slovenia.

Results: We got 41.0 % response rate. 51.0 % of the respondents have used some form of self-treatment in the previous year. 69.3 % used OTC drugs and 38.3 % prescription drugs for self-medication. 83.1 % of them got the drugs for self-medication from the pharmacist but 23.0 % of them got the drugs for self-medication from their friends and relatives. Several demographic characteristics of the respondents were statistically significantly associated with self-medication.

Citirajte kot/Cite as:
Zdrav Vestn 2010;
79: 757–763

Prispelo: 17. mar. 2010,
Sprejeto: 11. maj 2010

ication practices; thus women were more likely using OTC drugs, vitamins and minerals, and more likely buying them in pharmacies, as compared to men; students and active population were more likely to use OTC drugs, also more likely buying them in pharmacies as compared to other population groups.

Conclusions: The use of self-medication in Slovenia is very high, but mainly in quite safe mode.

Majority of medicines are bought in regulated pharmacies, where users can also get pharmaceutical care. Physicians have to take into account self-medication in their patients, take a thorough self-medication history and make good use of each consultation by educating the patients on appropriate and safe use of prescribed and OTC medicines.

Introduction

Good health is one of human priorities, which is no longer mandated to health care environment alone. Modern people are proactive in caring for themselves in order to stay fit. They want to maintain good physical and mental health, they are aiming at preventing illness or accidents and they want to take care of minor ailments. In this respect people often treat themselves by using different methods and services.¹ Self-treatment is therefore a “growing phenomenon”, recognised by self-medication industry and health policy makers.^{1,2} It is sometimes regarded as an attribute of modern western

societies, but it is well known also in less affluent countries.³

Self-medication is one of the most common self-care activities and an important part of health related behaviour of patients.^{4,5,6} Usually it is the first choice of treatment for early symptoms of diseases and one of the most important tools used when an individual encounters common health problems, which do not require a doctor visit.^{1,7}

There is no well-defined public health definition of self-care, self-treatment and self-medication. Frequently, the definition is restricted to the use of these practices prior to the use of health care services, or after the use of conventional methods. Also, the World Health Organisation (WHO) is trapped by this limited view in defining responsible self-medication as the practice whereby individuals treat their ailments and conditions with medicines, which are approved and available without prescription, and which are safe and effective when used as directed.²

Apart from the dispute, what practices can be regarded as self-treatment and self-medication there is a growing body of evidence that these practices are increasingly used worldwide. In the period from 1990–1997 the use of complementary and alternative medicine has increased from 34 % to 42 %.^{8,9} The highest rise has been observed in the use of herbal compounds, vitamin supplements, homeopathy, massages and energy treatments. 18 % of patients, who have used prescription drugs, have also used herbal compounds and vitamins.⁸ Herbals were also used in 18 % of respondents in the years 1997–2000.⁹ Among the consumed drugs, vitamins and analgesics were on the top of the list.¹⁰

Table 1: Characteristics of the respondents.

Characteristics	No.	%
Sex (No. 407)		
Female	191	46.9
Male	216	53.1
Age (No. 398)		
Age ≤ 64 yrs.	293	73.6
Age > 64 yrs.	105	26.4
Education level (No. 404)		
Elementary	50	12.4
Vocational training	66	16.3
Secondary	146	36.1
University	123	30.5
Postgraduate	19	4.7
Environment (No. 408)		
Rural	147	36.0
Suburban	119	29.2
Urban	142	34.8

Table 2: Use of health care services in the previous year (2008).

Use of services	No.	%
Family practice visit (No. 380)	287	75.5
Visit to an out patient specialist (No. 382)	182	47.6
Out-of-hours visit (No. 366)	71	19.4
Hospitalised (No. 374)	44	11.8
Home visit (No. 368)	12	3.3

The use of self-care is also associated with increasing age; people older than 65 years use it more often.^{8,9,11,12} On the other hand, some studies have shown just the opposite.⁶ This might be explained by higher prevalence of chronic diseases in older patients on one hand, and by better access to the relevant information and different lifestyle in younger generations on the other hand. Many studies have shown that women use self-medication more often than men,^{12,13,14} but there are also opposite findings in one study, which found a slightly higher use of self-medication in men.⁶

In Slovenia, drug market is regulated by state legislation.¹⁵ There are 3,800 prescription drugs, 240 of them are also OTC drugs and there are additional 139 solely over-the-counter (OTC) drugs available on the Slovenian drug market.^{16,17} Citizens can buy many food supplements in pharmacies and specialised stores or over the internet. However, the availability of homeopathic drugs is limited by legislation, which prohibits their sale. The data regarding self-treatment among the Slovenian population are relatively scarce. There are large variations in the use of self-medication in Slovenia re-

Table 3: Use of different self-treatment options.

Self-treatment options	No.	%
Herbals, herbal tea (No. 379)	305	74.4
OTC drugs (No. 375)	284	69.3
Vitamins, minerals (No. 377)	283	69.0
Prescription drugs (left over) (No. 372)	159	38.3
Homeopathy (No. 349)	17	4.9
Chiropractics (No. 352)	15	4.3
Acupuncture (No. 349)	11	2.7

ported. The source of data for these studies is very heterogeneous, so we decided to run a nationwide study of adult Slovenian population on the use of self-medication.

Methods

We performed a cross-sectional postal survey in adult Slovenian population. This survey was a part of a larger study about self-medication in Slovenia. Our survey was approved by the National Ethics Committee.

We included a sample of 1,000 adults (18 years or older) in Slovenia. A sample was randomly selected with a computer program based on Slovenian Telekom company phone book and stratified according to all Slovenian regions.

We developed a questionnaire according to similar questionnaires from other studies. It was mailed, together with a franked and labelled envelope to all people in the sample, at the end of April 2009. After three weeks, a reminder was sent by post to all people in the sample. The questionnaire consisted of a sheet with demographic data. The second part of the questionnaire was a sheet with questions about self-medication. Only the questions about home pharmacy are presented here.

For statistical analysis we used SPSS 13.0 (SPSS Inc., Chicago, IL, USA). We calculated the descriptive statistics. In the univariate analysis we used independent samples t-test and χ^2 test. In the multivariate analysis we used linear regression and logistic regression. We entered the variables that showed statistical difference in univariate analysis at $p < 0.05$. For other statistical tests the sta-

Table 4: The use of drugs for self-medication by gender.

Use of drugs	Total		Men		Women		P
	No.	%	No.	%	No.	%	
Herbals, herbal tea	303	80.4	156	79.6	147	81.2	0.692 (NS)
OTC drugs	282	75.8	137	69.5	145	82.9	0.003
Vitamins in minerals	280	74.9	134	69.1	146	81.1	0.007
Prescription drugs	156	42.3	84	44.0	72	40.4	0.493 (NS)
Homeopathic compounds	19	5.6	7	3.9	12	7.5	0.144 (NS)

Table 5: Use of drugs for self-medication in different population groups.

Use of drugs	Total		Active		Retired		Unemployed		Pupil/student		p
	No.	%	No.	%	No.	%	No.	%	No.	%	
Herbals. herbal tea	303	80.4	138	85.7	114	75.5	19	79.2	31	78.0	0.148 (NS)
OTC drugs	281	75.5	128	81.5	100	66.2	15	65.2	38	91.7	< 0.001
Vitamins in minerals	280	74.9	126	78.3	103	69.6	18	78.3	33	78.6	0.306 (NS)
Prescription drugs	158	42.8	60	38.2	68	45.3	62.5	15	39.5	15	0.126 (NS)
Homeopathic compounds	19	5.6	10	6.8	6	4.5	2	9,5	1	2.7	0.589 (NS)

tistical significance was also set at $p < 0.05$. In the statistical analysis we included the questionnaires that had been returned until 31 May 2009.

Results

Sample description

We received 410 questionnaires (41.0 % response rate). Mean age of the respondents was 51.5 ± 0.5 years. Other characteristics of the sample are described in Table 1.

Health related problems in the previous year were reported by 249 (70.5 %) of the respondents. The use of health services is reported in Table 2.

Self-treatment practices

Only 11 (2.7 %) of the respondents had not used any form of self-treatment in the previous year. OTC and prescription drugs, herbals, herbal tea, vitamins, minerals were used by 326 (84.0 %) of respondents. Table 3 shows the use of different self-treatment options.

Other forms included massages, meditation, and spiritual help, each in 2 (0.5 %) respondents, ayurveda, bio energy, bio resonance, biotron lamp, etheric oils, meditation, yoga, inhalation therapy, laser acupuncture, recreation, diet, honey products, tea, music therapies, and hot crystal salt were each listed by one (0.2 %) respondent. Differences in the use of different self-treatment options regarding sex, age, education, status and environment, did not reach statistical significance.

Women have been using OTC drugs ($p = 0.003$), vitamins and minerals

($p = 0.007$) more often than men, but other sex differences in the use of drugs for self-medication have not been statistically significant (Table 4).

We could not find any statistically significant differences in the use of drugs for self-medication regarding age or educational level of the respondents or environment where they live.

Pupils, students and active population have been using OTC drugs more often than other groups (Table 5) ($p = 0.001$).

Sources of drugs for self-medication are listed in Table 6.

Among other sources of drugs for self-medication the following have been mentioned: buying them in a shop (4 of them), three have got them in their doctor's office and two have prepared them by themselves. Women have bought them more often at the pharmacy as compared to men (165, 90.7 % versus 153, 76.5 %; $p < 0.001$) (Table 7). Sources have not differed regarding the education level of the respondents or the environment where they lived. Retired respondents, as compared to other groups, have bought them less often at a pharmacy ($p = 0.003$) or have got them from relatives or friends ($p < 0.001$) (Table 8).

Discussion

Discussion on the methodology

One of the major advantages of this study is a whole population-based design of the survey, which is, to our knowledge, the first national postal survey of self-treatment and self-medication in the country. The sample is representative for the adult population of

Table 6: Sources of drugs for self-medication.

Sources of drugs	No.	%
Pharmacy (No. 384)	319	83.1
Relatives and friends (No. 356)	82	23.0
Internet (No. 350)	14	4.0
Healer (No. 350)	13	3.7
Homeopath (No. 347)	12	3.5

Slovenia. High response rate for this type of surveys allows us to draw valid conclusions for the whole country. There are some shortcomings of this type of study, which lies in recall bias of the respondents, subjective evaluations of the items questioned, ill definition of self-treatment and self-medication in general public and unknown characteristics of non-respondents. However, the results are more or less in line with previous research findings from other studies in the country and in the world, which gives us confidence on the validity of the results and possibility to generalise them to the whole Slovenian adult population.

Discussion on the results

Our results show high frequency in the use of a vast range of several self-treatment practices and self-medication substances in Slovenian adult population. Self-treatment is with 97.3 % of uptake a widespread activity in Slovenian population confirming the results on self-treatment in Slovenian student population.¹⁸ These data convey an important message to all health care providers to keep in mind a thorough medication history including self-medication practices. Controlled or less potent drugs such as OTC

and prescription drugs, herbals, herbal tea, vitamins, minerals together have been used by 84 % of the population), which is similar to previous reports from some Slovenian regions on 72 % of use of herb-based compounds for self-medication which are close to 74 % reported in our study, although in some specific chronic diseases we have reports on higher use of complementary and alternative medicines – up to 28 %.^{19,20,21} On the other hand, homeopathy and chiropractics are used to a lesser extent (4.9 % and 4.3 % respectively, which is close to earlier findings, according to which 6.6 % of family practice visitors use complementary and alternative services).¹⁸ These can be partly explained with restricted availability of these homeopathic compounds on the Slovenian market due to in the restrictive legislation, so users of alternative medicine can get them only directly from healers or from abroad. Surprisingly high are findings on the use of OTC drugs, which by 69 % exceed the results from other studies, which report percentages in the range from 25 % up to 42 %.^{6,8,9,10,22}

The most striking among our results is the high use of left over prescription drugs used in Slovenian population (38 %), which challenges traditional views of self-medication practices and opens an area of concern and interest how to promote safe self-treatment in the populations. Additional worries for safety of such practices lays in the fact that in nearly one quarter of cases citizens have got medicines from relatives and friends who probably keep both OTC and prescription drugs in their drug cabinets. When facing these challenges, the utmost importance of patient education during family practice visits is clearly recognised.

We could find only a limited impact of respondents' characteristics on self-treatment and self-medication practices (Tables 4, 5, 7 and 8). This is in a way comforting, as there is obviously no outstanding social injustice regarding accessibility and affordability of self-treatment modalities in the society. The majority of drugs used in self-medication in Slovenia are bought in pharmacies, which are state-regulated and thus providing safe drugs alongside with the pharmaceuti-

Table 7: Sources of drugs for self-medication by gender.

Sources	Total		Men		Women		P
	No.	%	No.	%	No.	%	
Pharmacy	318	83,2	153	76,5	165	90,7	< 0,001
From healer	13	3,7	8	4,4	5	3,0	0,497 (NS)
From homeopath	12	3,5	3	1,7	9	5,5	0,055 (NS)
Relatives and friends	82	23,2	43	23,0	39	23,4	0,936 (NS)
Internet	14	4,0	7	3,9	7	4,2	0,886 (NS)

Table 8: Sources of drugs for self-medication by employment status.

Use of drugs	Total		Active		Retired		Unemployed		Pupil/student		P
	No.	%	No.	%	No.	%	No.	%	No.	%	
Pharmacies	317	83	147	89.6	116	74.4	20	87.0	34	87.2	0.003
From healer	13	3.7	1	0.7	8	6.0	2	9.1	2	4.8	0.051 (NS)
From homeopath	12	3.5	8	5.3	2	1.5	1	4.5	1	2.4	0.364 (NS)
Relatives and friends	82	23.2	23.9	37	16	11.9	10	45.5	19	44.2	< 0.001
Internet	14	4.0	7	4.6	2	1.5	2	9.1	3	7.1	0.191 (NS)

cal care.^{1,2} But, potentially unsafe sources of compounds used in self-medication, on the other hand raise concerns as we have to be alert in providing scientific information to the patients in a way understandable to them. Contrary to common accepted opinion on the use of alternative services, which were to some extent proven by previous surveys, our data confirm low use of homeopathy and other healing compounds in self-medication practices in Slovenian general adult population (Table 6).^{18,21}

Conclusions

This study provides an insight into the often disputed area of self-treatment and self-medication in Slovenian population. The majority of medicines are bought in regulated pharmacies, where users can also get pharmaceutical care. The use of homeopathy and other healers' compounds is of minor importance. However, some practices, such as keeping prescription medicines in drug cabinets at home for later use and obtaining medicines for self-medication from relatives and friends, demands from the whole health sector in the country activities to ensure safe use of drugs. Patient tailored guidelines for safe use of prescription drugs in self-medication should be developed and provided to lay public. Each family practice encounter should also contribute towards education of patients on safe use of potent drugs. Further studies are needed in the area of actual practices in defined clinical situations.

Acknowledgements

The project entitled "Cost-effectiveness of medication use among the Slovenian population" was financially supported by the Health Insurance Institute of Slovenia, based on the public tender (Official Gazette of RS, No. 14/2010 dated 26/02/2010). We acknowledge contribution of Medical Faculty Maribor, University of Maribor, Primary health care centre Gorenjska Kranj and Institute for the development of family practice Ljubljana for their support of this study. Our special thanks go to all the citizens who responded to this survey.

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