Role of a Pharmacist in the Safe Self-medication – A Questionnaire-based Survey

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Aims: This study aimed to investigate whether the place of the survey makes a significant impact on the responses regarding the process of self-medication, as well as the present pharmacists' engagement in this process in the Sarajevo Canton.
Study Design: An anonymous questionnaire-based survey.
Place and Duration of Study: One public pharmacy and various public places in the Sarajevo Canton, Bosnia and Herzegovina, for five months, February–June 2019.
**Methodology:** A total of 312 respondents was included**.** The first group (165 respondents) was surveyed in the pharmacy after buying an over-the-counter (OTC) drug, and the second group (147 respondents) was surveyed outside the pharmacy.
Results: Pharmacists instructed 65% of respondents (72.73% in the first group and 57.14% in the second group) on how to take the purchased OTC drug and checked whether 55% of respondents (70.91% in the first group and 38.1% in the second group) bought an appropriate drug for their health problem. Only 25% of respondents (36.36% in the first group and 12.24% in the second group) was informed about the adverse effects, whereas 29% of respondents (41.82% in the first

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group and 14.97% in the second group) was informed about the potential contraindications or interactions of the purchased OTC drug. The statistical analysis showed a significant relationship between the responses to the questions and the place of the survey about providing information on the adverse effects (P = .03), comorbidities (P = .049), and general information about the purchased OTC drug (P = .04).

Conclusion: In the Sarajevo Canton, pharmacists should be more actively involved in the process of self-medication and provide the necessary advice to patients consuming OTC drugs. Further research is needed so general conclusions could be drawn.

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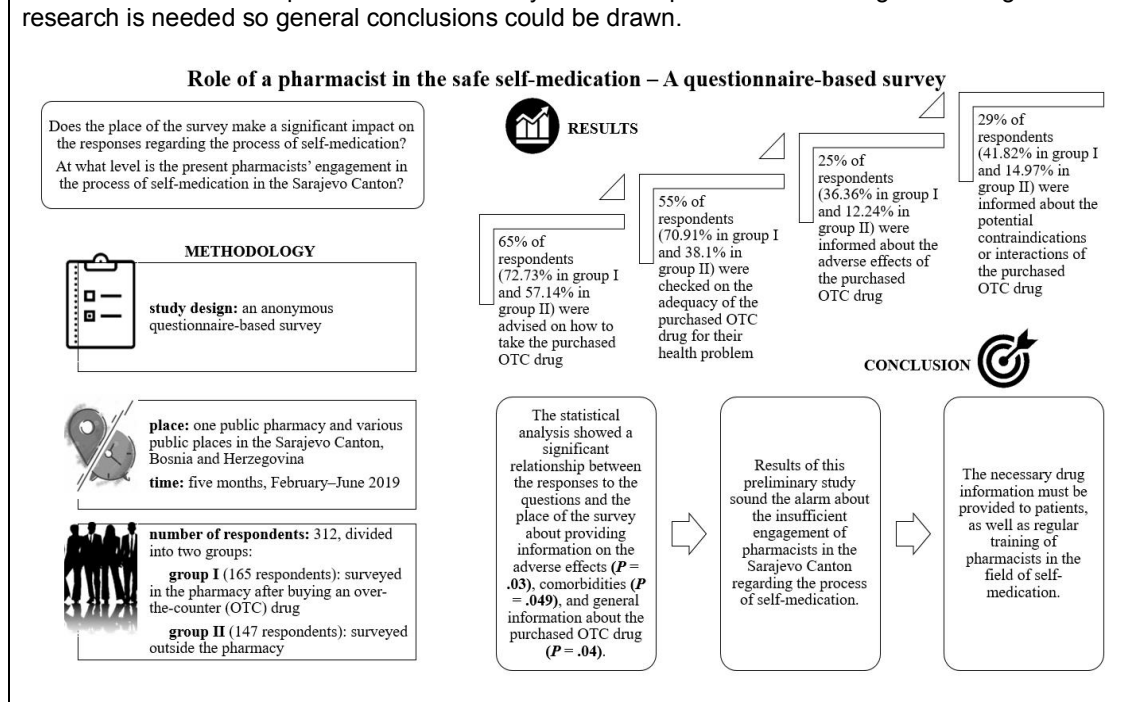
Keywords: self-medication; over-the-counter drug; safety; pharmacist.

ABBREVIATIONS

DRP: Drug-related problem
OTC: Over-the-counter
PIL: Package information leaflet

1. INTRODUCTION

Self-medication is one feature of self-care and is defined as "the selection and use of drugs by individuals to treat self-recognised illness or symptoms" [1]. Drugs that are usually related to self-medication are commonly referred to as "over-the-counter" (OTC) drugs. Different countries apply different restrictions regarding the availability of OTC drugs, but all of those drugs have to be approved by regulatory agencies for patients to use them without medical intervention (a prescription) [2]. It is common for patients to think that OTC drugs cannot cause any adverse effects or interactions with other drugs or foods. Therefore, they rarely seek any information from pharmacists, who should provide patients with advice about the use of OTC drugs [3]. According to Barrenberg and Garbe, 5.3% of respondents thought that OTC drugs were "extraordinarily safe" [4], and according to You et al., 44.6% of respondents considered OTC drugs safe [5].

Compared to other health care professionals, pharmacists are more easily accessible to advise patients regarding their therapy. Pharmacists see their patients 1.5–10 times more frequently compared to doctors and, therefore, should assume an important position in primary health care, especially in self-medication [6]. According to Oparah and Kikanme, 12% of respondents visited a pharmacy to seek advice from a pharmacist, whereas 55% of respondents went there just to buy drugs. Respondents who went to a pharmacy for advice showed a significantly higher level of satisfaction with pharmacists' service [7]. According to Blenkinsopp et al., patients supported and appreciated pharmacists' advisory role and tendency to provide them with

as much helpful information as possible [8]. The lack of information about the significance of pharmacists' advice regarding the use of OTC drugs in Bosnia and Herzegovina is clear and few studies have been conducted so far [9,10].

Pharmacists' presence, while respondents are answering the questions regarding the pharmacists' engagement in the process of self-medication, could significantly affect respondents' answers. Respondents who are being surveyed outside the pharmacy could be under less pressure, therefore give more genuine answers. There is a situation where respondents only visit one pharmacy and trust only pharmacists who work at that pharmacy, which could also affect their view on the other pharmacists' engagement regarding self-medication.

This study aimed to investigate whether the place of the survey makes a significant impact on the responses regarding the process of self-medication, as well as the present pharmacists' engagement in this process in the Sarajevo Canton.

2. METHODOLOGY

2.1 Design of the Study

This was an anonymous questionnaire-based survey that was conducted in the Sarajevo Canton, Bosnia and Herzegovina, for five months, from February to June 2019, eight hours per day (one full shift) in one public pharmacy and at various public places, thus this was a preliminary study. Respondents surveyed in the pharmacy after buying an OTC drug were in group I and respondents surveyed outside the pharmacy, at various public places, were in group II. The difference between the two groups was tested because we expected more results in favour of pharmacists' engagement in the process of self-medication from respondents who were surveyed in the pharmacy because of pharmacists' presence. Respondents in group I filled in the questionnaire after buying an OTC drug in the pharmacy. Respondents who got a prescription-only drug, such as antibiotics, were not included in the study. On the other hand, respondents in group II were asked to fill in the questionnaire outside the pharmacy, at various public places, and were included in the study after confirming that they have once bought an OTC drug. Those who did not feel comfortable giving that kind of information were not included in the study. Every respondent was informed

about the purpose of the study. One author was always present to answer potential questions or clarify any doubts that respondents might have had regarding the questionnaire. Pharmacists who worked regularly in the pharmacy were present while the study was taking place in that pharmacy.

2.2 Sample

A random sampling technique was used for the selection of participants in this study. The sample size was calculated assuming the population of around 1500 people with a confidence level of 95% and a confidence interval of 5, and the result was 306. We selected a larger sample size of 312 for this study.

2.3 Questionnaire

No standardised questionnaire was used. Instead, the authors created the questionnaire. It was constructed in the Bosnian language and comprised 18 questions, of which one was open-ended, 14 were closed-ended, and three were a combination. The questions were divided into three groups: the first group considered the demographic characteristics (gender, age, degree of education) of respondents, the second group considered the specifics of the purchased OTC drug, respondents' health issues, and the reasons for self-medication, and the third group considered pharmacists' activities while dispensing OTC drugs. The questions were chosen after the thorough literature review of previously conducted studies regarding this topic, which were referenced in the section Discussion.

2.4 Statistical Analysis

The collected data were statistically processed using the Statistical Product and Service Solutions (SPSS) Software for Windows (version 20.0, SPSS Inc., Chicago, Illinois, the United States of America) and Microsoft Excel (version 13, Microsoft Corporation, Redmond, Washington, the United States of America). A Chi-squared test (χ^2-test) was performed. Alpha (significance) level was .05.

3. RESULTS

The research sample comprised 312 respondents: 165 of them were surveyed in the pharmacy after buying an OTC drug, whereas 147 of them were surveyed outside the pharmacy, at various public places.

Table 1 shows the demographic characteristics (gender, age, degree of education) of 312 respondents who took part in this survey.

Table 2 shows the most commonly purchased OTC drugs by respondents.

Referring to the question: *For which health condition did you intend to use the purchased OTC drug?*, respondents mostly bought that OTC drug to treat headache, fever, cough or cold, and health issues that were not already offered as an answer, such as immunity strengthening, smoking addiction, and toothache. A few respondents intended to treat constipation, skin problems, or allergies. No one chose nausea and vomiting as an answer (Table 3).

Question: *Why did you not visit a doctor before purchasing that OTC drug?* was answered the way that most respondents thought they could cure themselves, did not have enough time to visit a doctor, or had previous experience with the purchased OTC drug, whereas a negligible number of respondents answered financial problems were the main reason for not visiting a doctor (Fig. 1).

To question: *Do you know which active substance is incorporated into the purchased OTC drug?*, 190 respondents (60.9%) answered positively (as "yes"), and 122 of them (39.1%) negatively (as "no").

Referring to the question: *Who told you that the purchased OTC drug could help you treat a certain health condition?*, most respondents thought they knew enough about that OTC drug based on previous experience or literature reading. The second most common answer was "friend or family member", and lastly "television commercials" and "the Internet" (Fig. 2).

To question: *Have you used the purchased OTC drug before?*, 265 respondents (84.94%) answered positively, and 47 of them (15.06%) negatively.

Referring to the question: *For whom did you purchase that OTC drug?*, respondents mostly bought that OTC drug for themselves, and, in descending order, for a child, someone else, and an elderly (Fig. 3).

Given that there were two groups of respondents (group I: respondents surveyed in the pharmacy; group II: respondents surveyed outside the pharmacy), it was necessary to determine whether a relationship between the responses to the questions and the place of the survey existed. The χ^2-test was used. Table 4 summarises both positive and negative responses by respondents of both groups to the following questions.

To question: *Did a pharmacist provide information regarding the appropriate way of using the purchased OTC drug?*, 203 respondents (65.06%) answered positively, and 109 of them (34.94%) negatively. In group I 72.73% of respondents and in group II 57.14% of them answered positively. In group I 27.27% of respondents and in group II 42.86% of them answered negatively. There was no statistically significant relationship between the responses regarding the appropriate way of using the purchased OTC drug and the place of the survey (χ^2 = 3.025, *df* = 2, *P* = .22).

To question: *Did a pharmacist provide information regarding the health conditions that the purchased OTC drug could be used for and the adequacy of that OTC drug for a certain health problem?*, 172 respondents (55.13%) answered positively, and 140 of them (44.87%) negatively. In group I 70.91% of respondents and in group II 38.1% of them answered positively. In group I 29.09% of respondents and in group II 61.9% of them answered negatively. There was no statistically significant relationship between the responses regarding the health conditions that the purchased OTC drug could be used for and the adequacy of that OTC drug for a certain health problem and the place of the survey (χ^2 = 1.785, *df* = 2, *P* = .41).

To question: *Did a pharmacist provide information regarding the adverse effects of the purchased OTC drug?*, 78 respondents (25%) answered positively, and 234 of them (75%) negatively. In group I 36.36% of respondents and in group II 12.24% of them answered positively. In group I 63.64% of respondents and in group II 87.76% of them answered negatively. There was a statistically significant relationship between the responses regarding the adverse effects of the purchased OTC drug and the place of the survey (χ^2 = 6.777, *df* = 2, *P* = .03).

To question: *Did a pharmacist ask you whether you used any other drugs or had any comorbidities (because of the possible contraindications or interactions)?*, 90 respondents (28.85%) answered positively, and 222 of them (71.15%) negatively. In group I 41.82% of respondents and in group II 14.97% of them answered positively. In group I 58.18% of

respondents and in group II 85.03% of them answered negatively. There was a statistically significant relationship between the responses regarding whether a pharmacist asked a respondent about the use of any other drugs or having any comorbidities (because of the possible contraindications or interactions) and the place of the survey (x^2 = 6.021, *df* = 2, *P* = .049).

To question: *Did a pharmacist generally provide enough information about the purchased OTC drug?*, 147 respondents (47.12%) answered positively, and 165 of them (52.88%) negatively. In group I 61.82% of respondents and in group II 29.93% of them answered positively. In group I 38.18% of respondents and in group II 70.07% of them answered negatively. There was a statistically significant relationship between the responses regarding whether a pharmacist generally provided enough information about the purchased OTC drug and the place of the survey (x^2 = 6.584, *df* = 2, *P* = .04).

Table 1. Demographic characteristics of respondents

Demographic characteristics		Respondents	
		Number	**Percentage**
Gender	Male	133	42.63
	Female	179	57.37
Age	18 and below	7	2.24
	19–24	51	16.35
	25–34	98	31.41
	35–54	111	35.57
	55–64	32	10.26
	65 and above	13	4.17
Degree of education	Elementary school	10	3.21
	High school	123	39.42
	Bachelor's degree	38	12.18
	Master's degree	138	44.23
	Doctor's degree	3	.96

Table 2. Most commonly purchased OTC drugs by respondents

Most commonly purchased OTC drugs	Respondents	
	Number	**Percentage**
Paracetamol	101	32.37
Ibuprofen	43	13.78
Diclofenac	22	7.05
Acetylsalicylic acid	18	5.77
Naproxen	10	3.21
Something else	118	37.82

Table 3. Health conditions for which treatment respondents intended to use the purchased OTC drug

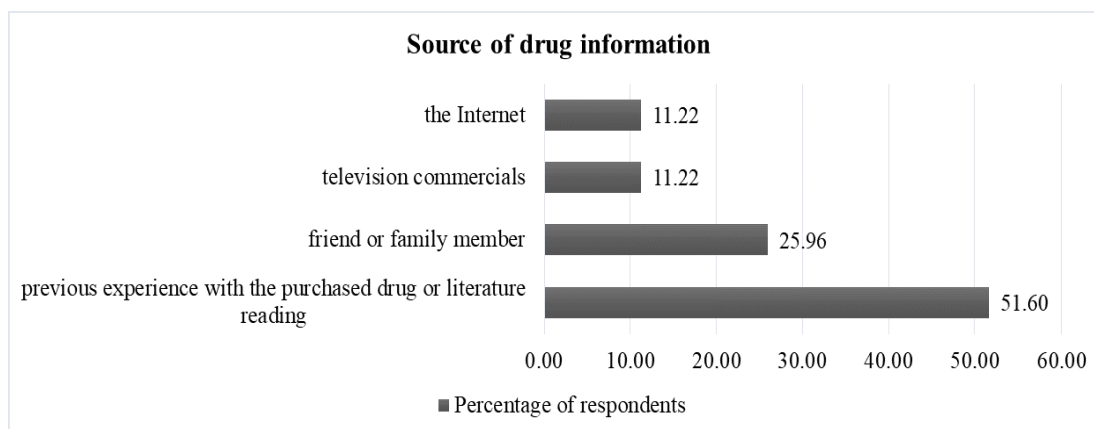| Health conditions for which treatment respondents intended to use the purchased OTC drug	Respondents	
	Number	**Percentage**
Headache	94	30.13
Fever	81	25.96
Cough or cold	28	8.97
Diarrhoea	16	5.13
Muscle pain	16	5.13
Dyspepsia	15	4.81
Allergies	3	.96
Constipation	3	.96
Skin problems	3	.96
Nausea and vomiting	0	0
Immunity strengthening, smoking addiction, toothache	53	16.99

Reasons why respondents did not visit a doctor

financial reasons	1.92
previous experience with the purchased drug	26.60
not having enough time	30.45
belief that they could cure themselves	41.03

0.00 5.00 10.00 15.00 20.00 25.00 30.00 35.00 40.00 45.00

■ Percentage of respondents

Fig. 1. Reasons why respondents did not visit a doctor

Source of drug information

the Internet	11.22
television commercials	11.22
friend or family member	25.96
previous experience with the purchased drug or literature reading	51.60

0.00 10.00 20.00 30.00 40.00 50.00 60.00

■ Percentage of respondents

Fig. 2. Source of drug information

Person respondents purchased a drug for

an elderly	1.92
someone else	4.17
a child	7.37
themselves	86.54

0.00 10.00 20.00 30.00 40.00 50.00 60.00 70.00 80.00 90.00 100.00
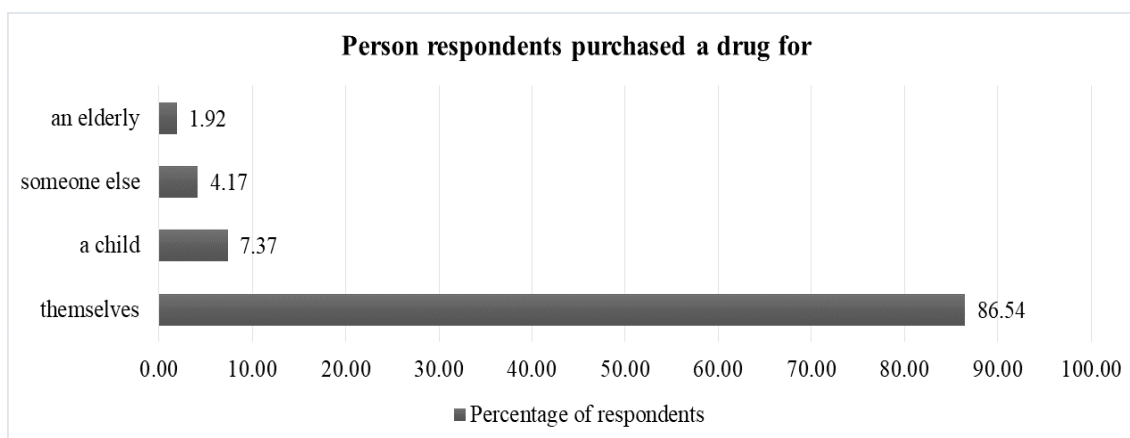
■ Percentage of respondents

Fig. 3. Person respondents purchased a drug for

To question: *Do you think that pharmacists' advice is equally valid and useful as doctors'* *advice?*, 243 respondents (77.88%) answered positively, and 69 of them (22.12%) negatively. In

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group I 83.64% of respondents and in group II 70.75% of them answered positively. In group I 16.36% of respondents and in group II 29.25% of them answered negatively. There was no statistically significant relationship between the responses regarding the equality of validity and usefulness of pharmacists' and doctors' advice and the place of the survey (χ^2 = 0.551, df = 2, P = .76).

To question: *Have you ever been embarrassed to speak about your health problems with a pharmacist in a pharmacy?*, 66 respondents (21.15%) answered positively, and 246 of them (78.85%) negatively. In group I 12.73% of respondents and in group II 29.93% of them answered positively. In group I 87.27% of respondents and in group II 70.07% of them answered negatively. There was no statistically significant relationship between the responses regarding the respondents' embarrassment to speak about their health problems with a pharmacist in a pharmacy and the place of the survey (χ^2 = 1.236, df = 2, P = .54).

Referring to the question: *How much time did a pharmacist spend in a conversation with you?*, pharmacists mostly spent up to one minute talking to respondents, and, in descending order, between one and three minutes, between three and five minutes, and more than five minutes (Fig. 4).

4. DISCUSSION

Studies on the significance of pharmacists' advice regarding the use of OTC drugs have never been conducted in the Sarajevo Canton before, so this study provides some preliminary results, which should be further explored and hopefully would urge other researchers to do more studies on this topic in that area. Results of this study warn about the lacking commitment of pharmacists in the Sarajevo Canton regarding the process of self-medication and show that pharmacists should play a more significant advisory role regarding the use of OTC drugs in the Sarajevo Canton.

Results of this study suggested that young to middle-aged (25–54 years old) people mostly purchased OTC drugs. One could have expected that the elderly would mostly purchase OTC drugs, as they generally use more drugs than any other population. However, it might be that this population rarely buys drugs without doctors' advice, especially when using more drugs at the same time. This attitude helps them avoid possible polypragmatism. Other studies have shown similar results: people older than 18 and younger than 65 years of age mostly purchased OTC drugs [11-13].

Based on the results of this study, it could be established that respondents mostly bought nonsteroidal anti-inflammatory drugs to treat headache or fever. They bought drugs to treat gastrointestinal disorders or allergies, or some dietary supplements (vitamins, minerals, or omega-3 fatty acids) to a lesser extent. Based on the results of other studies, it could be seen that analgesics, antipyretics, and antihistaminics, as well as drugs to treat different gastrointestinal disorders, have been the most commonly sold OTC drugs, and that headache, fever, cold, and cough, as well as gastrointestinal and skin disorders, have been the most commonly treated health conditions [11,14-18].
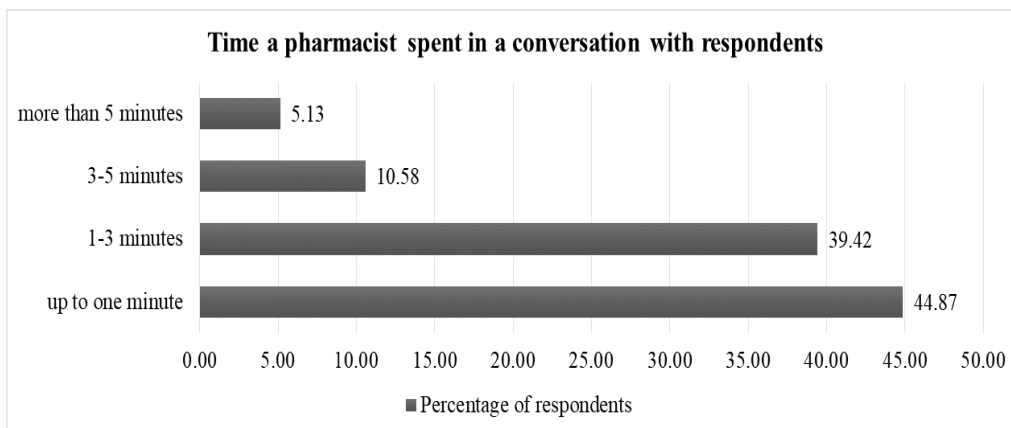

Fig. 4. Time a pharmacist spent in a conversation with respondents

Table 4. Summary of responses by respondents of group I (respondents surveyed in the pharmacy) and group II (respondents surveyed outside the pharmacy)

Question	Group	Answer	Respondents		*P* value
			Number	**Percentage**	
Did a pharmacist provide information regarding the appropriate way of using the purchased OTC drug?	I	Yes	120	72.73	.22
		No	45	27.27	
	II	Yes	84	57.14	
		No	63	42.86	
Did a pharmacist provide information regarding the health conditions that the purchased OTC drug could be used for and the adequacy of that OTC drug for a certain health problem?	I	Yes	117	70.91	.41
		No	48	29.09	
	II	Yes	56	38.1	
		No	91	61.9	
Did a pharmacist provide information regarding the adverse effects of the purchased OTC drug?	I	Yes	60	36.36	.03
		No	105	63.64	
	II	Yes	18	12.24	
		No	129	87.76	
Did a pharmacist ask you whether you used any other drugs or had any comorbidities (because of the possible contraindications or interactions)?	I	Yes	69	41.82	.049
		No	96	58.18	
	II	Yes	22	14.97	
		No	125	85.03	
Did a pharmacist generally provide enough information about the purchased OTC drug?	I	Yes	102	61.82	.04
		No	63	38.18	
	II	Yes	44	29.93	
		No	103	70.07	
Do you think that pharmacists' advice is equally valid and useful as doctors' advice?	I	Yes	138	83.64	.76
		No	27	16.36	
	II	Yes	104	70.75	
		No	43	29.25	
Have you ever been embarrassed to speak about your health problems with a pharmacist in a pharmacy?	I	Yes	21	12.73	.54
		No	144	87.27	
	II	Yes	44	29.93	
		No	103	70.07	

According to this study, most respondents thought they could treat their health problems on their own. Because of that, they did not visit a doctor to get proper advice. Self-medication could depend on the level of respondents' education because the higher the level of general knowledge is, the greater the person's responsibility for his health is. In this study, the correlation between the level of respondents' education and their will to visit a doctor instead of going directly to a pharmacy was not examined. But results of other studies have shown that people with a higher level of education used OTC drugs more often [19,20], as well as that the low level of education could be a risk factor for inadequate use of OTC drugs [21]. Also, in this study, 30.45% of respondents could not devote enough time to visit a doctor, and only a few of them stated financial problems as an answer. Based on the results of other studies, it could be concluded that patients mostly use OTC drugs to treat minor health problems by themselves [11,22]. In the Sarajevo Canton, an employer (for employed people), the employment office (for unemployed people), the pension fund (for retired people), or the parent's company (for children) provide health insurance. Although the percentage of the population with health insurance in the Sarajevo Canton is relatively high, there are still some groups of people that do not have it covered (e.g., self-employed people who cannot pay contributions or people who missed applying for health insurance covered by the employment office during time limit) [23]. Still, one of the biggest problems of the health system in the Sarajevo Canton are the shortage of reagents needed for conducting laboratory tests, as well as the lack of medical workers, which can cause a jam in doctors' offices. Thus, many people are forced to spend extra money visiting doctors who work in private practice. To avoid that additional cost, people try to fix their health issues by buying an OTC drug in a pharmacy, which is less expensive. So, long waiting periods in doctors' offices and not having health insurance covered could generally be the main reasons for avoiding the visit to a doctor. However, in certain places like Palestine, patients cited the lack of health insurance and financial problems as the main reasons for not visiting a doctor, because those visits were charged [24].

According to this study, more than half of respondents felt they knew enough about the OTC drug they bought because of their previous experience with it. Most of them have used that drug multiple times before for a given health problem. In Denmark, patients also mainly bought OTC drugs that they have already used for a particular health problem [25]. Based on the results of this study, it turned out that friends or family members were a significant source of drug information because around one-fourth of respondents gave that answer. Similar results have been obtained in other studies, where 24–33% of respondents received drug information from a friend or a family member [11,22]. Besides, based on the results of this study, the Internet and television turned out to be minor sources of drug information. It is important to notice that very useful drug information could be found on the Internet, but this could also be a very unreliable source, so patients could be misled and should be careful. Sommerhalder et al. conducted a study where they interviewed doctors and pharmacists about patients coming to their health care facilities with some drug-related knowledge gained using the Internet. Both doctors and pharmacists said that they faced certain inconveniences, e.g., patients read false drug information on the Internet. However, it was very common for patients to engage in a conversation with a doctor or a pharmacist and better understand what they have already read about a drug. If pharmacists recognise that patients have read incorrect drug information, they will respond to and correct patients' beliefs [26].

According to this study, respondents mostly bought an OTC drug for themselves, and rarely for a child, someone else, or an elderly. In a study conducted by Emmerton, 62.9% of customers purchased OTC drugs for themselves [27]. According to Cristescu et al., parents purchased OTC drugs for their children in 81.02% of cases [28]. According to other studies, self-medication in the pediatric population ranged between 66% and 83% [29,30]. In a study conducted by Haider et al., self-medication prevalence among parents was 77.25% [31]. Different studies have shown that self-medication prevalence among children by parents was 43–95.7%. Reasons for this great range could be different availability of free medical care for children, as well as parents' concern about drug safety [32].

According to this study, nearly three-fourths of respondents surveyed in the pharmacy answered that a pharmacist instructed them on how to take the purchased OTC drug, and more than half of respondents surveyed outside the pharmacy had

the same answer. Inappropriate choice of drug dose and duration of therapy could cause significant problems for patients consuming OTC drugs. A study conducted in the United States of America showed that 33% of adult Americans consumed a drug dose greater than the recommended one. Out of these respondents, 69% took more than what was recommended at once, 63% took the next dose before they were supposed to, and 44% took more than what was recommended daily, according to the package information leaflet (PIL). These results also suggested that 91% of respondents took more of a drug than what was recommended because they thought that its effect would then be enhanced [33]. According to a similar study conducted in Canada, 15% of adult Canadians took more than what was recommended daily. It was estimated that nearly five million adults took the next dose before they were supposed to, according to the PIL [34]. According to Saharan and Pandey, 54% of respondents consulted with a pharmacist regarding the OTC drug dose and duration of therapy [35]. Given the importance of adequate administration of OTC drugs for patients' safety and overall treatment outcomes, information about the drug dose and duration of therapy should be an unavoidable part of the consultation process provided by pharmacists.

According to this study, pharmacists predominantly checked whether respondents surveyed in the pharmacy bought an appropriate OTC drug for a certain health problem, whereas 38.1% of respondents surveyed outside the pharmacy was treated the same. It could be concluded that pharmacists' presence during the completion of the questionnaire influenced respondents' opinions about pharmacists' readiness to advise and help them. A study conducted in Denmark showed that a drug-related problem (DRP) was registered in 21% of patients asking for an OTC drug. The most common DRP was the choice of an OTC drug that was inappropriate for a certain health condition (44.8% of patients). However, after the consultation process of patients with pharmacists, 76.2% of all DRP was solved [25]. In Riyadh, only 25% of patients sought pharmacists' opinions on whether they purchased an appropriate OTC drug for a particular health condition [12]. Pharmacists' advice about the therapy resulted in more responsible self-medication for 80.8% of patients [36]. In this study, although the percentage of respondents who received information on the proper way of using an OTC drug or its adequacy

for a certain health problem differed between the two groups, that difference was not statistically significant. To advise a patient on the accurate way of using a particular OTC drug and check if that drug is appropriate for a specific health problem should be an inevitable part of the pharmacist-patient conversation.

Because most OTC drugs rarely show any serious adverse effects, pharmacists could mistakenly believe that there is no need to inform patients about the adverse effects of a certain OTC drug. Thus, three-fourths of respondents answered they did not receive information about the adverse effects of the purchased OTC drug. Results were similar regarding the information about the potential contraindications or interactions of that OTC drug. However, it should be noticed that responses significantly differed between the two groups, where respondents surveyed outside the pharmacy negatively answered these questions more frequently compared to respondents surveyed in the pharmacy. This might have been because of pharmacists' presence in the pharmacy. Respondents who were surveyed outside the pharmacy could have been under less pressure while answering questions, thus provided more realistic answers. Some respondents visited that pharmacy frequently and established a firm relationship with pharmacists who worked there. Thus, they might have provided answers in favour of those pharmacists, not to ruin their relationship. Several respondents surveyed in the pharmacy answered these questions negatively, although a pharmacist had provided them with the general information about the purchased OTC drug, so they probably did not listen carefully, while some of them answered these questions positively, although a pharmacist had not informed them rightly, probably because they had a good opinion about that pharmacist. Dyck et al. found pharmacists did not provide enough information about the adverse effects of OTC drugs, and even when they did, it was simplified [37]. According to other studies, 28.2–32.9% of patients was using at least one more drug besides the purchased OTC drug, which meant that it was still very important to inform them about the potential contraindications or interactions of that OTC drug [11,24]. Easy availability, relatively low price, and enormous marketing impact have made the use of OTC drugs not so "safe". Adverse effects of OTC drugs are often the result of their inappropriate use, including concomitant use with other drugs, especially in vulnerable groups of patients, such

as children, the elderly, people with chronic diseases, or pregnant and lactating women. Besides informing patients about the safety profile of OTC drugs, pharmacists have to identify contraindications and interactions of those OTC drugs that might affect patients' adherence.

According to this study, more than half of respondents answered they did not receive enough information about the purchased OTC drug in general. Results of other studies have been quite contradictory: a study conducted by Suleiman showed patients were not interested in pharmacists' advice about OTC drugs [12], while others showed patients had already expected that kind of advice [5,22,38,39]. An additional problem could arise, as many patients seek an OTC drug by its brand name. In such situations, pharmacists could misjudge that patients have already used that OTC drug and know enough about its adverse effects, contraindications, and interactions. Thus, patients could be deprived of very important information [11,25]. Pharmacists could have certain assumptions about the necessary amount of information that should be given to patients consuming OTC drugs, so they often omit key instructions for enabling safe self-medication. The fact that patients rarely ask questions regarding the use of OTC drugs could further substantiate these assumptions. This is one of the most commonly encountered problems in pharmaceutical practice, and it is difficult to find a proper solution. Some authors have recommended raising patients' awareness about the importance of having conversations and asking pharmacists drug-related questions [40]. Two-way communication between pharmacists and patients and providing patients with the necessary information and advice about the use of OTC drugs are very important for the promotion of safe self-medication. By providing consultations, pharmacists contribute to the improvement of patients' adherence and the recipience of proper health care.

In a study conducted by Wilbur et al., a vast number of respondents believed that a pharmacist's advice was as useful as that of a doctor [38]. In this study, a few respondents verbally commented that a pharmacist's advice was more useful than that of a doctor. However, because only two answers ("yes" and "no") were offered for the given question, such and similar comments were not recorded. According to Volmer et al., 76% of patients read the PIL, even though they were previously advised about the

purchased OTC drug by a pharmacist [39]. According to Čatić et al., patients mostly perceived pharmacists as health care professionals, but one-third of them perceived pharmacists as salespeople (entrepreneurial-oriented professionals). It was noticed that 61.74% of patients primarily consulted with a doctor about DRP, 20.33% of them with a pharmacist but only if a doctor was not available, and 17.58% of them considered a pharmacist to be the first choice [9]. On the other hand, according to You et al., in Hong Kong, 68.3% of patients consulted with a pharmacist before starting the process of self-medication, while 21.6% of them did not consult with a pharmacist because they were unsure about pharmacists' roles in this process or had low trust in pharmacists [5].

According to this study, 21.15% of respondents answered they were embarrassed to report their health problems to a pharmacist. According to Suleiman, 58.2% of patients felt shy to speak about their health problems with a pharmacist [12]. If patients and pharmacists communicate in an inappropriate or noisy atmosphere, an additional barrier will be established between them [41].

According to this study, respondents' answers regarding the time a pharmacist spent in a conversation with them were contradictory because it is unlikely that pharmacists spent between one and three minutes talking to respondents without emphasising important information about the purchased OTC drug. In this study, pharmacists mostly spent up to one minute and between one and three minutes in a conversation with respondents about the purchased OTC drug. A study conducted in North America found pharmacists spent an average of 8.8 minutes per patient, which is a notable difference compared to the results of this study [42].

This study had some limitations. First, the sample size was relatively small to draw general conclusions. Second, the relationship between the level of respondents' education and the responses to the questions was not investigated. The relationships between the gender and the age of respondents and the responses to the questions were not investigated as well. Third, this study was conducted regarding pharmacist-patient relations and respondents' relationship with pharmacists could lead to a bias.

5. CONCLUSION

Results of this preliminary study sound the alarm about the insufficient engagement of pharmacists in the Sarajevo Canton regarding the process of self-medication. The necessary drug information must be provided to patients, as well as regular training of pharmacists in the field of self-medication. The statistical analysis presented a significant relationship between the responses about providing information on the adverse effects, comorbidities, and general information about the purchased OTC drug and the place of the survey. Similar research should be carried out to compare the role of a pharmacist in safe self-medication in different parts of Bosnia and Herzegovina, as well as Bosnia and Herzegovina and countries of the European Union.

DISCLAIMER

The products used for this research are commonly and predominantly used? products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

CONSENT

The authors declare that written informed consent was obtained from the subjects before their inclusion in this study.

ETHICAL APPROVAL

The authors declare that this study has been examined and approved by the appropriate institutional review boards and research ethics committees (University of Sarajevo-Faculty of Pharmacy and the pharmacy where a part of this study took place) and has therefore been performed under the ethical standards laid down in the 1964 Declaration of Helsinki and its later amendments.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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