

# Risk perception about medication sharing among patients: a focus group qualitative study on borrowing and lending of prescription analgesics

Filipa Markotic<sup>1</sup>  
Davorka Vrdoljak<sup>2</sup>  
Marijana Puljiz<sup>3</sup>  
Livia Puljak<sup>4</sup>

<sup>1</sup>Centre for Clinical Pharmacology,  
University Clinical Hospital Mostar,  
Mostar, Bosnia and Herzegovina;

<sup>2</sup>Department of Family Medicine,  
University of Split School of Medicine,  
Split, <sup>3</sup>Family Medicine Clinic,  
Health Centre Imotski, Kamenmost,

<sup>4</sup>Laboratory for Pain Research,  
University of Split School of Medicine,  
Split, Croatia

**Background:** One form of self-medication is sharing of medications, defined as borrowing or lending medications in situations where the receiver of these drugs is not the individual to whom the medications were allocated.

**Objective:** To explore experiences and opinions of patients about sharing prescription analgesics, reasons for sharing prescription analgesics, the way in which patients choose to share those medications, their awareness of risk regarding sharing prescription analgesics, and how they estimated the potential risk.

**Methods:** This qualitative study was conducted by focus group discussions with 40 participants led by a moderator trained in focus group methodology using a semi-structured moderator guide. Adults aged  $\geq 18$  years who had received a prescription for an analgesic at least once in a lifetime were included. Six separate focus groups were conducted to discuss participants' perception of risks associated with sharing of prescription analgesics among patients. Additionally, participants filled out two questionnaires on demographic data, their own behavior regarding sharing analgesics, and their attitudes about risks associated with sharing prescription analgesics.

**Results:** In a questionnaire, 55% of the participants indicated that they personally shared prescription analgesics, while subsequently in the focus group discussions, 76% confessed to such behavior. Participants recognized certain risks related to sharing of prescription analgesics, mentioned a number of reasons for engaging in such behavior, and indicated certain positive aspects of such behavior. Forty-five percent of the participants indicated that sharing prescription analgesics is riskier than sharing nonprescription analgesics.

**Conclusion:** There is a prevalent attitude among participants that sharing prescription analgesics is a positive behavior, where potential benefits outweigh risks.

**Keywords:** pain, self-medication, drugs, risk awareness, risk estimation

## Introduction

Several studies have found that the most commonly used drugs for self-medication are analgesics.<sup>1-8</sup> Medication sharing is defined as borrowing or lending of drugs in situations where the receiver of these drugs is not the individual to whom the drugs are allocated.<sup>9</sup> The expression "lending" medications would imply that it is a provisory transfer of the medication, provided that the amount borrowed be returned; however, an individual "borrowing" a medication usually does not give back the medication to the individual who is "lending" it.<sup>10</sup>

Knowledge and awareness on the phenomenon of medication sharing between patients is very limited.<sup>11</sup> Individuals who borrow medications may thus lose an opportunity to receive optimal treatment and may delay use of professional help, and such

Correspondence: Livia Puljak  
Laboratory for Pain Research, University  
of Split School of Medicine, Šoltanska 2,  
21000 Split, Croatia  
Tel +385 21 557 807  
Fax +385 21 557 811  
Email livia@mefst.hr

medication may also mask clinical presentation and severity of disease. Furthermore, this behavior may be associated with unexpected side effects, adverse drug interactions, addiction, teratogenicity, drug abuse, intentional and unintentional poisoning, and misshapen perception of ineffectiveness of medications.<sup>4,5,9,12–14</sup> Beyene et al in their systematic review concluded that there is insufficient data on reasons for medication sharing, how patients decide to engage in medication sharing, whether they are aware of the potential risk, and how to estimate that potential risk.<sup>10</sup>

In this qualitative study, we analyzed experiences and opinions of patients about sharing prescription analgesics, reasons for sharing prescription analgesics, the way in which patients choose to share medications, their awareness of risk regarding sharing prescription analgesics, and how they estimate the potential risk.

## Methods

### Ethics

After reviewing the submitted research protocol, the Ethics Committee of the University of Split School of Medicine approved the study. The study was conducted according to the principles expressed in the Declaration of Helsinki. Informed consent, written and verbal, was obtained from all of the participants.

### Participants

This qualitative study involved 40 participants in six focus groups. Number of participants and focus groups was determined based on medians reported in a study on methodological aspects of focus group studies, where the median was five focus groups. The sixth focus group was included to reach a point of saturation.<sup>15</sup>

Potential participants were prescreened by family physicians (DV, MP), and those who had received prescription analgesic at least once were invited to participate in the study.

Each focus group consisted of four to 12 participants. For the purpose of this manuscript, focus groups were coded with first six upper-case letters of the alphabet (A–F), and participants in each focus group were coded with first four to 12 lower-case letters of the alphabet (a–l). Potential participants received written information with details about research team, research protocol, guarantee of anonymity, and that the authors intended to publish study results in a research journal.

Participants included were adults aged  $\geq 18$  years who had received prescription analgesic at least once in a lifetime and spoke Croatian language. Exclusion criteria were mental health problems and an inability of verbal expression.

## Research team and reflexivity

There were four researchers in the team (LP, DV, MP, and FM). Prof. LP is MD, PhD, and employed at the University of Split School of Medicine in Split, Croatia, as a researcher in the Laboratory for Pain Research and a lecturer at the Department of Histology and Embryology. DV is MD, PhD and affiliated with the University of Split School of Medicine in Split, Croatia, as a lecturer at the Department of Family Medicine. She also works as a specialist of family medicine. MP is MD, and employed at the Health Centre Imotski, Croatia. FM is MD, MSc, and works at the University Clinical Hospital Mostar, Bosnia and Herzegovina, as a specialist of clinical pharmacology and toxicology, and is the Head of the Centre for Clinical Pharmacology.

Potential participants received invitation to participate in the study together with detailed information about the study via study researcher who recruited them. Participants were also informed that they were not obliged to answer all the questions if they did not want to.

## Questionnaires and focus group discussion

In addition to written information about the study that the participants received before consenting to participate, at the beginning of each focus group meeting, the same introduction about medication sharing was given by one study author (FM) to ensure that the participants understand the concept of prescription medication sharing.

Participants filled out two short questionnaires and participated in the discussion about sharing of prescription analgesics. First questionnaire was distributed before focus group discussion, and the second one after the discussion. In the first questionnaire, participants answered questions about their own behavior regarding medication sharing. In the second questionnaire, participants were asked to write their associations regarding multiple statements about medication sharing. We applied consolidated criteria for reporting qualitative research (COREQ) as an assistance tool for conducting and reporting the study.<sup>16</sup> For discussions, semi-structured interviews were conducted with patients in order to detect whether they considered that sharing drugs is risky and if they recognized potential negative consequences of prescription analgesics sharing. Use of semi-structured interviews enabled comparison of interviews, but also provided an option to include issues raised by participants that were not anticipated, but were regarded important.<sup>17</sup> Two questionnaires were used for triangulation purposes, to collect more data from the participants, and also to compare results of

anonymous questionnaires with information shared during the focus group. Previously published literature was used to develop the questionnaires.<sup>9,13,18,19</sup> A list of questions used in the study is presented in the Supplementary material.

## Focus group locations

The first focus group (A) discussion was conducted at the premises of the Society for Diabetes in Split, with two researchers (LP and FM). Interview was conducted in a room with an open door, but nobody else was present at the premises. Focus groups B and C were conducted at the University of Split School of Medicine, with two researchers (LP and FM). The focus group D was conducted in Mostar, with one researcher (FM). Focus groups E and F were conducted at the Health Centre Imotski, with one researcher (FM).

## Analysis

All discussions about medication sharing were audio-taped. Transcripts were then analyzed by using qualitative content analysis.<sup>20</sup> It is a method for analysis of semi-structured interviews with experts because it is used to encode the text to a predetermined systematic coding that can be matched and supplemented with new issues that may arise during the interview. Predefined encoding system for this study was based on risk categories that were identified in previously published literature about drug sharing.<sup>12</sup> Coding was done by two researchers (FM, LP) from the author team independently. Specific risks were divided into appropriate categories. Meaningful units (complete sentences or parts of sentences) were defined as the analysis unit. Results were compared among researchers. The frequency of risks mentioned in discussions and spontaneously mentioned risks were described using descriptive statistics to indicate their relative importance in individual risk categories. For questionnaires, answers were coded, and frequency of answers was presented using descriptive statistics. The data were interpreted by the study authors.

The study questionnaires and focus group discussions were in Croatian. The questions and the participants responses have been translated into English for inclusion in this paper.

## Results

The study included 40 participants (25 women and 15 men). The average age of participants was 56.3 years (range 20–83 years). The key finding of the study was that for the majority of the participants, sharing of prescription analgesics was normal, and they did not worry a lot about the possible negative consequences of such behavior. Patients were more

interested in reducing the suffering of pain and maintaining good interpersonal relationships than potential dangers.

## Participants' experiences and opinions about sharing analgesics

Almost all participants engaged in sharing of analgesics. Frequency of participants' sharing of analgesics and participants' awareness of risks related to sharing those drugs are shown in Table 1.

Lending prescription pain medication (n=22, 55%) was more common than lending nonprescription pain medications (n=20, 50%). There were 15 (38%) participants who indicated that they are lending both prescription and nonprescription analgesics. Less than half of the participants (n=17, 44%) borrowed pain medication from others. Lending of analgesics was more frequent than borrowing; 31% (n=12) of participants indicated that they were lending nonprescription analgesics and borrowing analgesics; 33% (n=13) of participants mentioned lending prescription analgesics and borrowing analgesics; and 28% (n=11) of participants stated lending both, nonprescription and prescription, analgesics and borrowing analgesics. There were 28% (n=11) of participants who indicated that they never lend and/or borrow pain medications.

Participants indicated that they shared analgesics usually with family/relatives and/or friends and/or neighbors, and less usually with work colleagues and/or acquaintances.

Through discussion in focus groups, more participants (76%) indicated that they personally shared prescription analgesics than they previously declared in the first questionnaire (55%). Probably, during discussions, some participants recalled a situation in which they shared analgesics, prompted by other participants' responses. Some participants later said they did not fully comprehend what does it mean to share medications, and for example, whether sharing medications with their wife or husband should also be reported. Participants indicated that medications prescribed to the spouse were considered a "common property" in the household. Two participants said that they shared analgesics only with their spouses (focus group participants [FGPs] Ae and Cd).

Some participants imparted their experiences and opinions about analgesic sharing.

I once gave my prescription medication Zaldiar [tramadol with paracetamol] to my sister, who is 93 years old. After a leg surgery she had severe pain. Because the first tablet of Zaldiar she took from me did not help her, she did not want to take another tablet. [FGP Bd]

**Table I** Frequency of participants' sharing of analgesics and their awareness of the risks related to sharing those drugs

Question*	Responses						
	Focus group A	Focus group B	Focus group C	Focus group D	Focus group E	Focus group F	Total
Have you ever given someone your pain medication that you did not get by prescription?	Yes: 0	Yes: 5	Yes: 0	Yes: 2	Yes: 10	Yes: 3	Yes: 20
	No: 6	No: 2	No: 4	No: 2	No: 2	No: 4	No: 20
	Ø: 0	Ø: 0	Ø: 0	Ø: 0	Ø: 0	Ø: 0	Ø: 0
Have you ever given someone your prescription pain medication?	Yes: 1	Yes: 2	Yes: 1	Yes: 2	Yes: 11	Yes: 5	Yes: 22
	No: 5	No: 5	No: 3	No: 2	No: 1	No: 2	No: 18
	Ø: 0	Ø: 0	Ø: 0	Ø: 0	Ø: 0	Ø: 0	Ø: 0
Have you ever taken pain medication from a person who is not a physician?	Yes: 1	Yes: 2	Yes: 0	Yes: 3	Yes: 9	Yes: 2	Yes: 17
	No: 5	No: 5	No: 4	No: 1	No: 2	No: 5	No: 22
	Ø: 0	Ø: 0	Ø: 0	Ø: 0	Ø: 0	Ø: 0	Ø: 1
When you took pain medication from another person, did you also take the accompanying package insert with information about the medication?	Yes: 0	Yes: 1	Yes: 0	Yes: 2	Yes: 5	Yes: 2	Yes: 10
	No: 4	No: 5	No: 4	No: 2	No: 7	No: 5	No: 27
	Ø: 2	Ø: 1	Ø: 0	Ø: 0	Ø: 0	Ø: 0	Ø: 3
When you took pain medication from another person did you think it might be risky?	Yes: 4	Yes: 4	Yes: 3	Yes: 3	Yes: 4	Yes: 5	Yes: 23
	No: 1	No: 2	No: 1	No: 1	No: 8	No: 2	No: 15
	Ø: 1	Ø: 1	Ø: 0	Ø: 0	Ø: 0	Ø: 0	Ø: 2

**Notes:** Ø = no answer. \*This is an English translation of the original version of these questions, which were presented in Croatian.

I am lending and borrowing analgesics. I shared them with my children, husband, neighbors and work colleagues. It was the Aspirin from Bayer (authors note – generic name: acetylsalicylic acid). With this drug I rescued people and they rescued me when it was needed. I was careful about the expiration date; when it runs out I throw them. [FGP Bf]

One participant from focus group F recounted story from his childhood, which happened about 50 years ago. At that time, a neighbor stole one tablet of analgesic from the participant's house. The analgesic was prescribed by a veterinarian for the participant's cow. The next day, the neighbor confessed that to the participant's mother. Since the neighbor claimed that the analgesic was effective, the participant's mother decided to give the neighbor two more tablets.

## Reasons for sharing prescription analgesics and the way in which patients choose to share medications

Distrust in physicians was indicated as one reason for engaging in medication sharing.

When it hurts, I could eat a snake if it will help. If there was no pain then I would not take anything. I trust more another patient than a doctor, honestly. I prefer an advice from a patient with the same experience than a doctor. [FGP Ac]

Inconvenience of contacting a physician and persons nearby having a drug available were reasons for medication sharing among some participants.

For me it is good to take a medication from someone because it allows me to skip a visit to the doctor and waiting in line. [FGP Dd]

Medication sharing may be fostered by unusual situations, such as when someone does not have access to a health care professional or accessibility of a drug in a pharmacy, for example, during the hiking (Bd) or working as a captain on a ship (FGP Cb). Some participants indicated willingness to share analgesics if someone has emergency situations such as “intensive pain”.

Only if someone really has a strong pain, then it is ok for me to share an analgesic. [FGP Cd]

Sometimes, prescription analgesics were shared reluctantly.

I gave ibuprofen, which I got via prescription, several times to my neighbor. I did not want to do this and I was trying to discourage her, but she insisted. [FGP Ca]

For many participants, medication sharing was something normal and the way to maintain good relations with individuals in their life. Participant Bg, who is doing a lot of fieldwork, stated that his coworkers often suffer from pain and that sharing analgesics occurs commonly among work colleagues. Participant Ec commented that in his surroundings, there exists an opinion that people who experience pain in the same location can use the same medication.

I engage in such behavior only to maintain good neighborly relations. [FGP Cc]

Medications are shared more out of necessity than for economic reasons. We are used to that. It is a habit, we do not even think about it. [FGP Da]

Two participants emphasized that they borrow only analgesics which they know well (FGPs Ee and Ek).

I think that is normal. People have always shared drugs and they always will be shared. [FGP Ea]

It is okay to help someone when it hurts him. We should not always question the situation when someone's in pain. [FGP Ed]

## Participants' awareness of risk regarding sharing prescription analgesics and how participants estimate the potential risk

Most of the participants considered it risky to borrow analgesics from another person. As possible harmful hazards and consequences, they mentioned side effects (FGPs Aa, Ab, Ae, Af, Ba, Bc, Bd, Cb, Cd, Ea, Ec, Fb, and Fe), allergies (FGPs Ae, Bd, Cb, Ee, and Ff), fear (FGP Da), threat to life (FGPs Eb and Fb), a possibility that given analgesic does not relieve the pain (FGP Fd), a possibility that dangerous combination of drugs may happen (FGPs Ed, Ee, and Ej), potential inappropriate use of medications (FGPs Ee and Ej), and a waste of time in treatment (FGP Cc). Three participants expressed that they did not know anything about risks related to borrowing medication (FGPs Ca, Fa, and Fc).

One participant described his experience when his neighbor had serious allergic reaction to acetylsalicylic acid and emphasized:

If someone asked for an analgesic and complained of severe pain I would have told him to take them on their own responsibility. It helped me, but I do not know if it would help you. [FGP Ae]

Some participants had specific advice about using medication.

Those who have problems with the stomach should take something based on acetaminophen. People should always estimate how long they can endure the pain, because there is a risk. [FGP Bf]

I know that medications for pain affect the digestive tract, so I always reduce the recommended dosage and duration of drug administration. [FGP Bd]

Three participants stated that they always read instructions for medications written on the package insert, and therefore, they do not want to give their drugs to others (FGPs Bb, Bd, and Cd). Although, one participant commented:

If I would read side effects in instructions for medications I would never take any medications, because they can have hundred side effects on the list. [FGP Ee]

One participant said that whoever is looking for medication should read instructions and decide on their own whether to take the medication (FGP Fc). Some participants said they think more about how to alleviate the pain than they think about risks (FGPs Bg, Db, Dc, Dd, and Ea).

A person lending his/her own medication may be exposed to the following risks, according to the participants: remorse/moral responsibility (FGPs Aa, Ab, Ae, Bc, Bd, Bg, Cb, Cc, Cd, Ca, Da, Db, Ec, Ee, Ef, Eh, Ei, Ej, Ek, El, Fb, and Ff), legal accountability (FGPs Dd, Ed, Ee, Ef, Ek, and El), remains without his/her own medications (FGPs Ca, Cc, Da, Eb, Ee, Eg, Ek, and El), imputation (FGP Ca), and regrets if the medication would not help (FGPs Fd and Fe). Two participants considered that a person lending his/her own medications could not be subject to any of risks indicated by other focus group members (FGPs Ea, Fc, and Fg). One participant stated:

The responsibility exists only if children are involved. [FGP Bf]

One participant commented:

I ran out of the medication when I give it. I do not like to give medication. That's why I often say that I do not have a medication, although I have it. I do not know how a drug will affect someone else. I do not want to be responsible if something happens and someone might say that I poisoned that person. I'm afraid that I will be charged if something bad happens. I do not want to hear something like – who knows whether the medicine was fresh, who knows what she gave her [...] I do not like to talk to others about medications that I am taking so that they would not ask me to give them some. Some other people like to list medications they are taking and they like to inquire about other people's medications. [FGP Ca]

One participant stated:

[...] I think it is a greater sin to not give someone an analgesic when it hurts, than the risk that something bad will happen if I give it [...] [FGP Db]

Similarly, a participant said:

Helping people should be the most important. [FGP Dc]

There were 45% of participants who indicated that sharing prescription analgesics is riskier than sharing nonprescription analgesics. Several participants expressed having more confidence in medications that were prescribed by their doctor



than in medication they bought themselves (FGPs Bb, Ca, Cb, Cc, Ea, Ec, Ed, and Eg). Their explanation was that their doctor knows “pains” better and which medicines are adequate.

In the second questionnaire, participants were asked to provide free associations and open-ended answers related to the risk of taking analgesics from other people (Table 2), to indicate how they would describe individuals who give their drugs to others (Table 3) and individuals who take drugs from others (Table 4). Most of the participants responded to these questions, indicating either approval of behaviors involving sharing prescription medications, or neutral position, or their disagreement and condemnation.

More than half of participants (n=22, 55%) had negative free associations related to risk of taking prescription pain medications from other people. Only seven respondents (18%) had positive and six respondents had neutral free associations related to that risk. Half of the respondents described individuals who give their prescription drugs to others positively, while 14 (35%) respondents described them negatively. Thus, individuals who took prescription drugs from others were described negatively by half of respondents.

The great majority of participants noted that physicians should take measures to prevent sharing of prescription analgesics among patients. They suggested that physicians should

**Table 2** Free associations related to the question: What comes to your mind first, in relation to a risk of taking pain medications from other people?

Focus group A	Focus group B	Focus group C	Focus group D	Focus group E	Focus group F
Irresponsibility toward your health	Fear	Side effects	I think I'll get	Nothing	Fear
Contraindications	That would hurt me	It is a great risk to	dizziness, nausea,	Nothing at all	That will be easier
I want the pain to go away as soon as possible	Gastric irritation	give another own	become panicked	Will it help me?	for me
I need to read twice the instructions for medication and I need to consider it carefully	Horror	medication	Fear of the	Before this discussion, I never thought about that	That will help me
Similar to me	Do not give it		consequences	Perhaps allergic reactions	Allergy
Contraindications, side effects	Solidarity		when I take the	First, it comes to my mind that I will help the person to alleviate pain	
	Contraindications		drug without	Drug interactions, allergic reactions	
			sufficient	Allergic reaction	
			information	Allergy	
			about it	Allergic reactions, incorrect dose of a drug, incorrect way of taking the drug, antagonistic effect of the drug	
			This is a boring topic, I believe that drugs which I take are not very harmful	Complications for own life	
			Side effects		

**Note:** The original responses were given in Croatian and have been translated to English.

**Table 3** Free associations related to the question: How would you describe people who give their drugs to others?

Focus group A	Focus group B	Focus group C	Focus group D	Focus group E	Focus group F
They are as careless as persons who take unnecessary medication	Good	Irresponsible	Like myself, “good people”, because	They primarily want to help, they think less about the consequences	Irresponsible, but good
Irresponsible	They are not nice people	Undesirable	we all want the pain to pass as soon as possible	Good people, helping	Human
Similar to me	That's life	Undesirable. I would not give	They share their experience with the drug with others	Philanthropists	Good
Irresponsible	Good people		Good people	Ok people	It would be better if nobody would give anything to anyone
No way	Irresponsible		They are willing to help people in need	They are generous and willing to help	One should not indulge in giving drugs without a professional, without the need, it can be very dangerous
	Thoughtless			They are willing to help	Benevolent
	Naive – irresponsible			Good	Humanely
				Both must be aware of the responsibilities and risks	
				Humanitarian	

**Note:** The original responses were given in Croatian and have been translated to English.

**Table 4** Free associations related to the question: How would you describe people who take drugs from others

Focus group A	Focus group B	Focus group C	Focus group D	Focus group E	Focus group F
A careless person	I do not know	Undesirable behavior	Maybe they ran out of	It hurts him and he is	Irresponsible
Irresponsible	Unstable person	Careless	a drug at a given time,	not thinking a lot	Rescuers
Crazy	Shrewd	Not good	although I think that	Shrewd	Ok
Not good	Needs	It is not good to take	people who use the	Advanced	In case they need it and
Reckless	Irresponsible	it from other person	therapy regularly obtain	I took drugs myself, too.	there are suitable drugs,
	Thoughtless		the new one as soon as	I cannot describe myself	let him take it
	Naive – irresponsible		possible	Careless	I could say irresponsible
			Lazy to go and get their	Good	They take a drug out of
			medication	If it hurts them, why not	need
			Does not bother me	I can describe them as	If he needs some, let him
			and I do not think	poor people, but they	take it
			that they are doing	will be good, after they	
			something wrong	take a pill	
			Desperate people	Both must be aware of	
				the responsibilities and	
				risks	
				People in need	

**Note:** The original responses were given in Croatian and have been translated to English.

warn, advise, instruct, inform, and educate patients about harmful consequences of sharing prescription medication. A participant from focus group D commented that it is “necessary to accelerate procedures at the family doctor and provide prescriptions for medications adapted to current needs and condition of a patient”.

As possible benefits of giving one’s analgesics to others, most frequent answers were pain relief and helping another person (21 participants). Financial savings and gratefulness were mentioned as potential benefits of medication sharing too. Five participants did not see any benefit in sharing prescription analgesics. Two respondents considered that the risk is greater than the benefit.

Thirteen participants considered that there are no harmful consequences in refusing to give someone an analgesic. Other participants mentioned the following as possible harmful consequences: pain/suffering (n=4), their own guilty conscience (n=5), and fear of the worsening of interpersonal relationships (n=5). One participant wrote that others might think she is a cheapskate if she refused them.

## Discussion

Participants expressed various opinions related to sharing prescription analgesics, ranging from approving, neutral, and disapproving. Certain risks, but also benefits of this behavior, were recognized. As potential reasons for sharing prescription analgesics, participants indicated unusual situations when professional help is not available, distrust in physicians, inconvenience of contacting a physician, availability of a drug with persons nearby, financial savings, and accessibility of a drug in a pharmacy.

Even though this study was of qualitative nature and involved 40 participants, due to nature of the focus group methodology, prevalence of medication-lending behavior was considerably higher compared to other studies, where reported rate for lending medication was 6%–23%.<sup>5,9,10,13,18,21–24</sup> However, our findings correlate with study of Ali et al which found that 54% of respondents admitted to sharing their medications with friends and family members.<sup>25</sup> Prevalence for borrowing pain medication among our participants was 43.6%. In other studies, the reported ratio was 5.0%–51.9%.<sup>4,5,9,10,13,18,19,21–23</sup> In one study, more than half of students took leftover medications from family or friends,<sup>25</sup> and borrowing was less prevalent than lending, like in two previous studies.<sup>18,24</sup> However, in five studies, borrowing was more prevalent than lending.<sup>5,9,13,21,22</sup> About one-third of participants reported both lending and borrowing analgesics. In two other studies, 12%–16% indicated both borrowing and sharing medications.<sup>5,22</sup>

During discussions, more patients indicated engaging in prescription medication-sharing behavior compared to the first questionnaire. This could be due to their lack of understanding that sharing involves any other person, and some of them said that they did not consider that giving or taking a drug from spouse was “sharing medications” because they live in the same household and they considered their medications as their joint ownership. Some participants may have forgotten about such experiences, but they were prompted after hearing others’ experiences. Participants’ opinions may be influenced by group norms and may lead to bias. This is why we gave two anonymous questionnaires to the participants. Furthermore, we encouraged them to be open and detailed in their responses.

Different behaviors may be associated with different types of medications. Our participants indicated that they share mostly paracetamol and nonsteroidal anti-inflammatory medications like in the previous studies.<sup>1–4,19,26</sup> Participants shared analgesics mostly with family, friends, and neighbors. In previous studies, it was found that medications were usually shared with family and friends.<sup>7,10,19,22,27–30</sup> In some cultures, sharing medications is a way of expressing care for family members when they are ill.<sup>26,31,32</sup> Desire to help others or oneself was the most reported explanation for sharing analgesics.

Borrowing medication for pain management was cited as an important reason in the study of Daniel et al.<sup>9</sup> In three earlier studies, the main situation in which borrowing occurred involved a person already taking a medicine but running out of it or having the similar medical problem as the person who had the medicine.<sup>5,13,25</sup> Such reasons are usually describing participants who share their medications with spouses. Some participants lent their leftover analgesics. In previous studies, primary explanations for lending behavior were having leftover medications.<sup>5,13</sup> Our participants reported the inconvenience of visiting a physician as a reason for sharing analgesics, like in the previous studies.<sup>18,22</sup>

Many of our participants (61%) were aware of risks related to the borrowing of analgesics, compared to 41% of borrowers aware of risks. Despite the possible risk, most of the participants considered that sharing analgesics is an acceptable behavior. These findings could suggest that those who are sharing and borrowing analgesics are underestimating potential health risks that are associated with this behavior. In an earlier study, many respondents were also aware of and worried about risk related to sharing of medications.<sup>32</sup> One study found that those who borrowed or shared medication considered they were at a lesser risk of side effects if they take other people's medicines.<sup>22</sup> Goldsworthy and Mayhorn in their study found that 37% of borrowers had experienced an adverse effect or an allergic reaction.<sup>18</sup> A study conducted in Australia found that people older than 65 years thought that sharing strong analgesics and the same prescription medication seemed to be acceptable.<sup>24</sup> In another study, adolescents assumed that medications would be shared if obtained from a family member or someone who "had the same problem" or someone who "knows something" about medicines, and in the case of pain.<sup>9</sup>

Written instructions for sharing analgesics were not taken by 65% of borrowers, which are worse than results of the study where half borrowers reported receiving written instructions as package inserts.<sup>18</sup> In one study, results

showed that more than 60% of participants did not try to read the package inserts of their medications.<sup>33</sup> Some of the participants in our study mentioned intentionally using a lower dose of prescribed medication. One study found that the noncompliance to pharmacological therapy was associated with sharing analgesics.<sup>34</sup>

Even though the focus of our study was to analyze sharing of prescription analgesics between human beings, one case about sharing a medication prescribed to an animal was also described by a participant. We decided to describe this too, because maybe this behavior should be separately investigated, in order to see how often people engage in using medications intended for animals.

Our study indicated that physicians should be aware about patients' benevolent opinions about sharing prescription analgesics. Physicians should educate patients about dangers of such behavior, but also about the fact that over-the-counter medications are not harmless. Our recent study about opinions of pain management physicians regarding sharing of prescription analgesics among patients showed that majority of them believe that this is a negative behavior and that patients should be educated about its dangers.<sup>35</sup>

## Limitations

Limitations of this study are those that are inherent for focus group discussions. There may be dominant persons in a group who can influence the conversation and tendencies toward socially acceptable and normative discourse. In this study, sample size was small due to study design.

Future large-scale quantitative studies can use these data for generating new hypothesis that may provide new insights about prevalence of sharing prescription medication and perceived risks. Additionally, we did not find any studies testing interventions for preventing such behavior, and therefore, such studies would be useful.

## Conclusion

The attitude that sharing prescription analgesics is a positive behavior is prevalent among patients, where potential benefits outweigh risks. Physicians should be aware of the existence of this phenomenon among patients and warn patients about dangers of such behavior. Future quantitative studies should explore these attitudes on a large scale. There is also a need for testing interventions for reducing sharing of prescription analgesics.

## Disclosure

The authors report no conflicts of interest in this work.



## References

- Shankar PR, Partha P, Shenoy N. Self-medication and non-doctor prescription practices in Pokhara valley, Western Nepal: a questionnaire-based study. *BMC Fam Pract*. 2002;3:17.
- Multicenter study on self-medication and self-prescription in six Latin American countries. Drug Utilization Research Group, Latin America. *Clin Pharmacol Ther*. 1997;61(4):488–493.
- Arrais PS, Coelho HL, Batista Mdo C, Carvalho ML, Righi RE, Arnau JM. Perfil da automedicação no Brasil [Profile of self-medication in Brazil]. *Rev Saude Publica*. 1997;31(1):71–77. Portuguese [with English abstract].
- Shaghaghi A, Asadi M, Allahverdi H. Predictors of self-medication behavior: a systematic review. *Iran J Public Health*. 2014;43(2):136–146.
- Goldsworthy RC, Schwartz NC, Mayhorn CB. Beyond abuse and exposure: framing the impact of prescription-medication sharing. *Am J Public Health*. 2008;98(6):1115–1121.
- Montastruc JL, Bagheri H, Geraud T, Lapeyre-Mestre M. Pharmacovigilance de l'Automédication [Pharmacovigilance of self-medication]. *Therapie*. 1997;52(2):105–110. French [with English abstract].
- Shehnaz SI, Agarwal AK, Khan N. A systematic review of self-medication practices among adolescents. *J Adolesc Health*. 2014;55(4):467–483.
- Jerez-Roig J, Medeiros LF, Silva VA, et al. Prevalence of self-medication and associated factors in an elderly population: a systematic review. *Drugs Aging*. 2014;31(12):883–896.
- Daniel KL, Honein MA, Moore CA. Sharing prescription medication among teenage girls: potential danger to unplanned/undiagnosed pregnancies. *Pediatrics*. 2003;111(5 Pt 2):1167–1170.
- Beyene KA, Sheridan J, Aspden T. Prescription medication sharing: a systematic review of the literature. *Am J Public Health*. 2014;104(4):e15–e26.
- Morasco BJ, Dobscha SK. Prescription medication misuse and substance use disorder in VA primary care patients with chronic pain. *Gen Hosp Psychiatry*. 2008;30(2):93–99.
- Ellis J, Mullan J. Prescription medication borrowing and sharing--risk factors and management. *Aust Fam Physician*. 2009;38(10):816–819.
- Petersen EE, Rasmussen SA, Daniel KL, Yazdy MM, Honein MA. Prescription medication borrowing and sharing among women of reproductive age. *J Womens Health (Larchmt)*. 2008;17(7):1073–1080.
- Ruiz ME. Risks of self-medication practices. *Curr Drug Saf*. 2010;5(4):315–323.
- Carlsen B, Glenton C. What about N? A methodological study of sample-size reporting in focus group studies. *BMC Med Res Methodol*. 2011;11:26.
- Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *Int J Qual Health Care*. 2007;19(6):349–357.
- Briner M, Manser T. Clinical risk management in mental health: a qualitative study of main risks and related organizational management practices. *BMC Health Serv Res*. 2013;13:44.
- Goldsworthy RC, Mayhorn CB. Prescription medication sharing among adolescents: prevalence, risks, and outcomes. *J Adolesc Health*. 2009;45(6):634–637.
- Ward L, Patel NM, Hanlon A, Eldakar-Hein S, Sherlinski K, Ward SH. Prescription medication borrowing among adult patients at an urban medical center. *J Urban Health*. 2011;88(6):997–1014.
- Elo S, Kyngäs H. The qualitative content analysis process. *J Adv Nurs*. 2008;62(1):107–115.
- Hogan DJ, Moreland A, Lane P, Lal S. Exchange of prescription medications by dermatology outpatients. *J Am Acad Dermatol*. 1990;23(5 Pt 1):953.
- Goulding E, Murphy M, Di Blasi Z. Sharing and borrowing prescription medication: a survey of Irish college students. *Ir J Med Sci*. 2011;180(3):687–690.
- Auta A, Omale S, Shalkur D, Abiodun AH. Unused medicines in Nigerian households: types and disposal practices. *J Pharmacol Pharmacother*. 2011;2(3):195–196.
- Ellis JC, Mullan J, Worsley T. Prescription medication hoarding and borrowing or sharing behaviours in older residents in the Illawarra, New South Wales, Australia. *Australas J Ageing*. 2011;30(3):119–123.
- Ali SE, Ibrahim MI, Palaian S. Medication storage and self-medication behaviour amongst female students in Malaysia. *Pharm Pract (Granada)*. 2010;8(4):226–232.
- Kamutingondo S, Groot S, Hodgetts D, Nikora LW. Understandings and social practices of medications for Zimbabwean households in New Zealand. *MAJ Rev*. 2011;3:1–17.
- Pedersen W, Lavik NJ. Adolescents and benzodiazepines: prescribed use, self-medication and intoxication. *Acta Psychiatr Scand*. 1991;84(1):94–98.
- McCabe SE, Boyd CJ. Sources of prescription drugs for illicit use. *Addict Behav*. 2005;30(7):1342–1350.
- Boyd CJ, McCabe SE, Cranford JA, Young A. Prescription drug abuse and diversion among adolescents in a southeast Michigan school district. *Arch Pediatr Adolesc Med*. 2007;161(3):276–281.
- Garnier LM, Arria AM, Caldeira KM, Vincent KB, O'Grady KE, Wish ED. Sharing and selling of prescription medications in a college student sample. *J Clin Psychiatry*. 2010;71(3):262–269.
- London JA, Guthridge S. Aboriginal perspectives of diabetes in a remote community in the Northern Territory. *Aust N Z J Public Health*. 1998;22(6):726–728.
- Hodgetts D, Nikora LW, Rua M. Māori men and the indirect procurement and sharing of prescription medications. *AlterNative*. 2011;7(2):152–162.
- Tawfik KA, Jabeen A. Pharmaceuticals safety practices-a comparative pilot study. *Int J Health Sci (Qassim)*. 2013;7(3):317–324.
- Markotic F, Cerni Obrdaj E, Zalihić A, et al. Adherence to pharmacological treatment of chronic nonmalignant pain in individuals aged 65 and older. *Pain Med*. 2013;14(2):247–256.
- Markotic F, Puljak L. Risks associated with borrowing and sharing of prescription analgesics among patients observed by pain management physicians in Croatia: a qualitative study. *J Pain Res*. 2016;9:1143–1151.

# Supplementary material

**Table S1** Questionnaires used during focus group discussions

## Questionnaire 1

1. Age: \_\_\_\_\_ years
2. Sex: M F
3. Have you ever given someone your pain medication that you did not get by prescription? Yes No
4. Have you ever given someone your prescription pain medication? Yes No
5. Have you ever taken prescription pain medication from a person who is not a physician? Yes No
6. When you took prescription pain medication from another person did you take also the accompanying package insert with information about a medication? Yes No
7. When you took prescription pain medication from another person did you think it might be risky? Yes No
8. From whom did you take prescription pain medication? \_\_\_\_\_
9. To whom did you give your prescription pain medication? \_\_\_\_\_

## Focus group discussion questions:

1. Does anyone have any questions before we start discussion?
2. Firstly, describe situations in which you have taken pain medication from other people or you gave your pain medication to another person.
3. Did you give to others, or take from somebody, pain medications which can be obtained only by prescription?
4. What are possible risks or possible harmful consequences and danger for persons who take prescription pain medication from a person who is not a physician/health professional?
5. What are possible risks or possible harmful consequences and danger for a person who gives his/her prescription pain medication to other people? Could that person be exposed to some risks or harmful effects and dangers?
6. Is there a difference between the risk of sharing pain medications depending on whether the pain medication is prescribed or can be purchased over-the-counter without a prescription?
7. Is there a higher risk associated with drug sharing if the pain medication is provided via prescription or if it can be bought over-the-counter; please explain your opinion.
8. Please share with us your attitudes or any other thoughts about sharing pain medications.
9. Do you have any other comments about sharing prescription analgesics?

## Questionnaire 2

Now, we kindly ask you to write any word that comes to your mind regarding sharing pain medications following these questions:

1. What comes to your mind first, in relation to a risk of taking pain medications from other people?
2. How would you describe people who give their prescription drugs to others?
3. How would you describe people who take prescription drugs from others?
4. Should health care workers do something to ensure that patients do not share their prescription drugs with others? If yes, what should they do?
5. What are the possible benefits of giving your prescription pain medications to others?
6. What are the possible harmful consequences if you refuse to give someone an analgesic who asks for it?

**Note:** This is an English translation of the original version of this questionnaire, which was presented in Croatian.

## Journal of Pain Research

## Publish your work in this journal

The Journal of Pain Research is an international, peer reviewed, open access, online journal that welcomes laboratory and clinical findings in the fields of pain research and the prevention and management of pain. Original research, reviews, symposium reports, hypothesis formation and commentaries are all considered for publication.

Submit your manuscript here: <https://www.dovepress.com/journal-of-pain-research-journal>

## Dovepress

The manuscript management system is completely online and includes a very quick and fair peer-review system, which is all easy to use. Visit <http://www.dovepress.com/testimonials.php> to read real quotes from published authors.