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ORIGINAL RESEARCH

Awareness, Attitudes, and Practices Regarding OTC Drugs in Circassian and Chechen Communities in Jordan: A Cross-Sectional Study

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Purpose: Over-the-counter (OTC) medications are widely used for self-medication, yet their misuse can lead to adverse outcomes. This study aimed to assess the knowledge, awareness, and attitudes toward OTC drugs among Circassians and Chechens in Jordan.

Methods: A cross-sectional study was conducted in September 2022 using an online survey targeting Circassians and Chechens aged 18 and above. The questionnaire was validated by clinical researchers and consisted of demographic data and questions on OTC drug use, awareness, and attitudes. Data from 418 participants were analyzed using descriptive and inferential statistics, with a significant level of $p < 0.05$.

Results: The majority of participants were female (76.1%), married (78.5%), and almost half of the participants held a non-medical bachelor's degree (49.3%). Analgesics (73.9%) and vitamins (56.7%) were the most used OTC drugs. Headache (65.6%), musculoskeletal pain (33.7%), and the common cold (25.4%) were the primary reasons for self-medication. Most participants (53.8%) expressed strong interest in knowing the side effects and contraindications of OTC drugs, while 72.5% checked expiry dates before use. Notably, 50.2% disagreed with the statement that OTC products have no side effects. Age and educational level were significantly associated with self-medication practices ($p < 0.05$).

Conclusion: Circassians and Chechens in Jordan exhibit high awareness of the risks associated with OTC drug use, yet self-medication practices remain prevalent. Public health interventions should focus on education campaigns to mitigate potential misuse and promote safe practices.

Keywords: over-the-counter drugs, self-medication, circassians and chechens, awareness and attitudes, jordanian population

Introduction

Medication use indicates the consumption of drugs for the avoidance, detection, and management of diseases. Adherence to prescribed medicine must be maintained by healthcare professionals and patients.[1] Any adverse symptoms should be notified to the healthcare staff, who may then evaluate and provide the necessary medications to mitigate the undesirable symptoms.[2] Over-the-counter (OTC) medications are drugs that can be purchased without a prescription from a licensed healthcare professional.[3] OTC drugs are recognized as a critical component of Jordanian pharmacist,[4] and their usage in the pharmaceutical sector has consistently increased.[5] It significantly contributes to self-care, allowing individuals to make autonomous health decisions. The World Health Organization has indicated that appropriate self-medication can aid in preventing and managing disorders that do not necessitate a physician's appointment, offering a more economical option for treating common diseases.[6] The potential advantages of OTC medicine accessibility for the public involve increasing individual accountability, enhancing confidence in health management, and encouraging therapy self-

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Graphical Abstract

management. Moreover, it facilitates quick and convenient access to therapies, reducing the time spent awaiting a doctor's appointment.[7] Yet, an insufficient understanding of the dosage and administration frequency of medicine may result in undesirable pharmacological effects. There exists a potential for failing to get suitable medication for the disease, resulting in a delay in both diagnosis and treatment.[8]

Research on the utilization of OTC medicines across different populations indicates that approximately 25–75% of individuals consume OTC medications.[5–9] The most often consumed OTC medications are analgesics, antipyretics, antibiotics, cough treatments, and vitamins, frequently purchased from pharmacies.[9–11] The safety profile of OTC drugs is encouraging.[12] Nonetheless, OTC drugs may be exposed to abuse and misuse, which are considered clinically and ethically unacceptable The abuse of these OTC drugs relates to their utilization for undesired or non-medical objectives, such as weight loss or inducing psychoactive effects. The misuse of OTC medicines relates to the inappropriate utilization of these drugs for therapeutic reasons, particularly regarding the duration of usage or dose.[13,14]

Previous research studies in Jordan have significantly improved our understanding of self-medication practice among Jordanians.[15–18] However, an unexplored research gap exists concerning self-medication practices of OTC medications within the Circassians and Chechens patients in Jordan. Circassians and Chechens represent an integral and vibrant part of Jordanian society. With deep historical roots and a rich cultural heritage, these communities have contributed significantly to the social, economic, and cultural fabric of the country. Their traditions, values, and communal cohesion have allowed them to preserve their unique identities while actively participating in the broader development of Jordan. Understanding the health behaviors and practices of these groups is essential, not only to address their specific healthcare needs but also to ensure their inclusion in national health strategies. By focusing on these communities, this study highlights their importance and underscores the need for tailored interventions that resonate with their cultural context. Thus, this study aimed to assess Circassians and Chechens patients' knowledge, attitude, and practice regarding OTC medications in Jordan.

Materials and Method

Ethical Approval

Ethical approval for this study was obtained from Hashemite University, ensuring adherence to ethical standards for research involving human participants. Approval was granted on September 1, 2022, under reference number 21/9/2021/

2022. Participant confidentiality was strictly maintained, and informed consent was obtained from all participants before data collection. This work was conducted according to Declaration of Helsinki.

Study Design and Participants

This research used a descriptive cross-sectional design, and the aims were pursued using an online questionnaire in September 2022. The research was performed on Circassians and Chechens living in Jordan. The online survey was created and verified by clinical researchers to get anonymous replies, which were managed carefully. The participants who consented were males and females from Circassians and Chechens, aged 18 and older, who could read and fully understand Arabic. The questionnaire was developed after a study of the appropriate literature and written in Arabic by the author and then back-translated to English. Two independent academic members from The University of Jordan and The Hashemite University evaluated the questionnaire for its substance, resulting in revisions of the document according to their recommendations. The questionnaire was created using the "Google Forms" online survey platform. The survey included a cover page detailing the study's nature and goal, in addition to the consent form to participate in the study.

Survey Development, Validation, and Reliability

The online survey was created after examining relevant validated questionnaires in the literature. Various sources were used to create a set of questions related to the study's aims. Face and content validity testing of the questionnaire was performed. Face validity was established by having five expert clinical pharmacy and public health clinicians review the items for clarity, readability, and relevance. Content validity was assessed by two independent academic members who determined whether the questions sufficiently addressed the domains of awareness, attitudes, and practices on OTC drug use. Changes were made in accordance with their feedback to increase item clarity and suitability.

For quantitative validation, the Content validity index (CVI) was computed from experts' ratings. Each item was rated for relevance on a 4-point scale by 4 experts. The content validity of the scale was affirmed with an I-CVI ranging from 0.80 to 1.00, and S-CVI/Ave = 0.91. The individual item Modified Kappa (k*) values were also calculated to adjust for chance agreement, with values ranging from 0.75 to 1.00 (considered excellent). These metrics established the solid content validity of the questionnaire.

Moreover, the language validation was performed by forward-translation of the original English version into Arabic conducted by a bilingual pharmacist. This back-translation into English was performed for us independently by an independent expert bilingual who did not take part in the first translation. Semantic equivalence of the original and back-translated English versions was verified.

This survey was piloted on a small sample of 25 individuals from target communities for clarity, understanding, and duration of completion. Pilot study responses were not included in the final analysis. Based on feedback from participants, a few questions were slightly revised in wording.

The questionnaire consisted of many questions and was divided into two sections: demographic data and questions on the use of OTC products. The last section of the questionnaire addressed three topics: the awareness level toward OTC products, the use of OTC drugs among participants, and univariate attitudes about OTC medications. The sorts of questions and answers ranged from binary responses ("Yes", "No") to drop-down selections, and it was designed to be done within 7 to 10 minutes.

Awareness score was assessed using a Likert scale with a maximum of 5 (strongly agree) to a minimum of 1 (strongly disagree). Scores were categorized using Bloom's cut-off points: < 3 (<59%) was considered a low level of awareness, 3–3.9 (60.0–79.0%) as moderate and 4–5 (80.0–100.0%) as a high awareness toward OTC medications.[19] After calculating their scores, Bloom's cut-off points are considered a standard categorizing tool for KAP studies.[19] It helps to understand and analyze the scores' outcomes and then reveals the recommendations and conclusion of the study.[19]

Statistical Analysis

Statistical Package for Social Sciences (SPSS, version 23.0) was used to analyze the data. Descriptive analyses were performed to describe continuous and categorized data (mean ± SD, frequency, and percentages). The chi-square test (Yates continuity correction and Fisher's exact when appropriate) was done to explore the association, and the Phi (φ)

factor was used to examine the strength of the association. The statistical test was done by applying a confidence interval of 95% (P <0.05).

Result

Questionnaire Reliability

Cronbach's alpha was computed for the awareness and attitude items to evaluate the internal consistency of the survey. Cronbach's alpha was 0.81 for the awareness domain and 0.79 for the attitude domain showing the acceptable to good internal consistency of the questionnaire.

Demographic Characteristics

A total of 418 participants successfully completed the questionnaire with a 47.68 (SD ±12.025) mean age. Nearly half of the participants were over 50 years old (n=201, 48.1%), and only 7.9% were under the age group of 20–29. Most respondents were female (n=318, 76.1%) and were married (n=328, 78.5%). One-quarter of the sample preferred not to answer their monthly income, while the highest percentage (30.9%) was from those who incomed from 500 to 1000 JD. Almost half of the participants (49.3%) had a non-medical bachelor's degree, 71.5% of the study sample did not have family members working in the medical field, and 73.2% of them did not suffer from chronic pain. Moreover, more than half of respondents (n=249, 59.6%) do not have a chronic disease, however, the most prevalent disease was hypertension (n=67, 16%), followed by arthritis (n=39, 9.3%), then gastritis (n=33. 7.9%). Detailed demographic characteristics are presented in Table 1 and Figure 1.

Table 1 Sociodemographic Characteristics (N=418)

Characteristics	N (%)
Gender	
Female	318 (76.1%)
Male	100 (23.9%)
Age	**Mean** = 47.68, **SD** = ±12.025
20–29 years	33 (7.9%)
30–39 years	81 (19.4%)
40–49 years	103 (24.6%)
Over 50 years	201 (48.1%)
Marital status	
Single	54 (12.9%)
Married	328 (78.5%)
Divorced	21 (5%)
Widow	15 (3.6%)
Monthly income	
< 500	54 (12.9%)
500–1000	129 (30.9%)
1000–2000	86 (20.6%)
> 2000	44 (10.5%)
Prefer not to answer	105 (25.1%)
Educational level	
Primary education	74 (17.7%)
Secondary education	69 (16.5%)
BSC medical	22 (5.3%)
BSC not medical	206 (49.3%)
Master's degree	35 (8.4%)
PhD degree	12 (2.9%)

(*Continued*)

Table 1 (Continued).

Characteristics	N (%)
Job	
Retired	90 (21.5%)
Housewives	140 (33.5%)
Work in the medical field	22 (5.3%)
Work in a non-medical	152 (36.4%)
Do not work	14 (3.3%)
First-degree family members work in the medical field	
Yes	119 (28.5%)
No	299 (71.5%)
Suffering from chronic pain	
Yes	112 (26.8%)
No	306 (73.2%)

Awareness and Attitude Toward OTC Drugs

In terms of awareness level among Circassia or Chechen, the results showed moderate awareness toward OTC medications (mean±SD = 3.24 ±0.988). As around half of the participants (53.8%) strongly agreed that they were interested in knowing the side effects and contraindications of OTC drugs, and 51% were interested in reading the patient information leaflet. Moreover, 52.4% strongly agree that they care regarding the appropriate storage conditions of OTC products; however, only 0.5% of respondents agreed that self-medication with OTC drugs should be encouraged. The highest percentage (72.5%) was for the "agree" answer on the statement "Circassian or Chechen care regarding the production and expiry dates". Furthermore, half of the participants (50.2%) disagreed that OTC products have no side effects. A similar percentage of Circassian or Chechen (2.2%) agreed that they could specify self-medication doses and prefer to treat themselves rather than pay a visit to the nearest health facility, Table 2.

Our results showed that, most of Circassian or Chechen (76.1%) considered analgesics and vitamins as an example of OTC products. Furthermore, 72.2% of participants believed that antipyretics are over-the-counter drugs. More than half of respondents (67.4%), (56.5%), and (52.4%) answered that constipation, cough relief, and antacid drugs are OTC

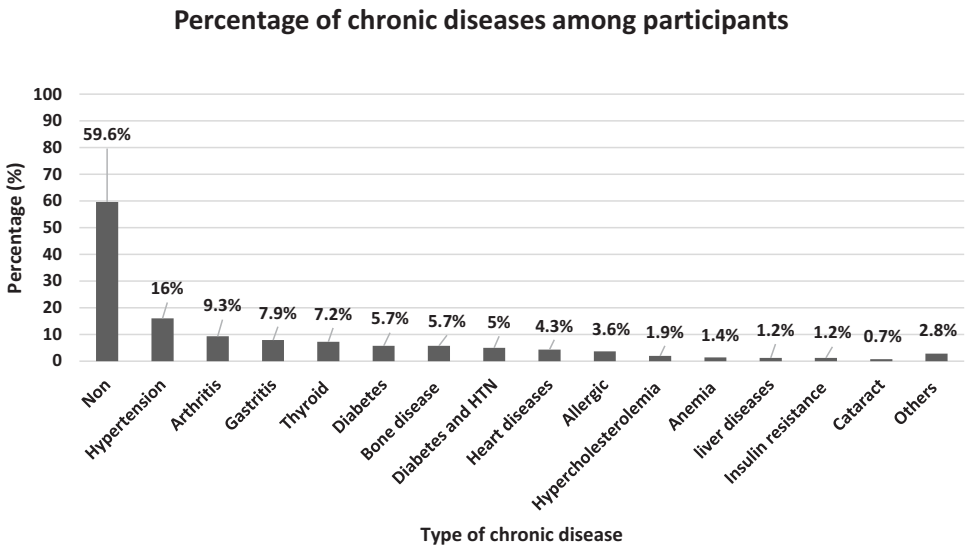

Figure 1 Percentage of chronic disease among participants (N = 418).

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Table 2 Participants Awareness Level Toward OTC Medications (N = 418)

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean, ± SD
• Self-medication with OTC drugs should be encouraged.	79 (18.9%)	172 (41.1%)	145 (34.7%)	2 (0.5%)	20 (4.8%)	2.31, ±0.944
• If ill, would you rather treat yourself than pay a visit to the nearest health facility?	56 (13.4%)	157 (37.6%)	125 (29.9%)	9 (2.2%)	71 (17%)	2.72, ±1.24
• Do you fear of hospitalization?	85 (20.3%)	172 (41.1%)	71 (17%)	14 (3.3%)	76 (18.2%)	2.58, ±1.346
• OTC has no side effects.	73 (17.5%)	210 (50.2%)	93 (22.2%)	7 (1.7%)	35 (8.4%)	2.33, ±1.053
• Circassian or Chechen can specify self-medication dose	53 (12.7%)	185 (44.3%)	80 (19.1%)	9 (2.2%)	91 (21.8%)	2.76, ±1.338
• Antibiotics have no side effects.	141 (33.7%)	201 (48.1%)	53 (12.7%)	7 (1.7%)	16 (3.8%)	1.94, ±0.935
• Do you think that the "over the counter" drug sellers are well equipped to prescribe OTC drugs and give correct information to consumers who purchase self-medication products	12 (2.9%)	77 (18.4%)	136 (32.5%)	20 (4.8%)	173 (41.4%)	3.63, ±1.267
• Circassian or Chechen are interested in reading the patient information leaflet	4 (1%)	18 (4.3%)	50 (12%)	133 (31.8%)	213 (51%)	4.28, ±0.902
• Circassian or Chechen are interested in knowing the side effects and contraindications of OTC?	1 (0.2%)	10 (2.4%)	22 (5.3%)	160 (38.3%)	225 (53.8%)	4.43, ±0.724
• Circassian or Chechen care regarding the appropriate storage conditions of OTC products	1 (0.2%)	5 (1.2%)	11 (2.6%)	182 (43.5%)	219 (52.4%)	4.47, ±0.635
• Circassian or Chechen care regarding the production and expiry dates	-	2 (0.5%)	7 (1.7%)	303 (72.5%)	106 (25.4%)	4.23, ±0.488
Overall Mean score		**3.24 ±0.988**				

Notes: Scores were categorized using Bloom's cut-off points: < 3 (<59%) was considered a low level of awareness, 3–3.9 (60.0–79.0%) as moderate and 4–5 (80.0–100.0%) as a high awareness toward OTC medications.

products respectively. Only 11.7% thought that hypertension and diabetes drugs are one of OTC products. Figure 2 illustrates the participants' points of view regarding the example of OTC drugs.

The most prevalent used OTC drug was analgesics (73.9%), as 243 of females and 66 of males used analgesics in the last 6 months without a physician's prescription, followed by vitamins (56.7%), where 192 of female and 45 of male used them in the last 6 months. None of the participants used epinephrine drugs without a physician's prescription. The lowest use frequency was for antifungal drugs (2.9%) where only two males and twelve females used them in the last 6 months without a physician's prescription, Table 3.

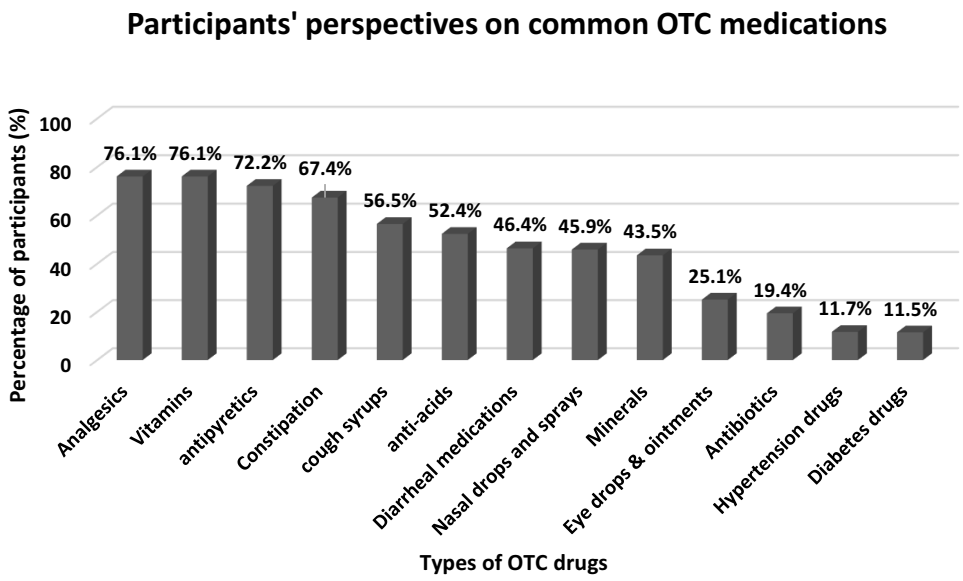

Figure 2 Participants' points of view regarding the example of OTC drugs (N = 418).

Table 3 The Use of OTC Drugs Among Participants (N = 418). More Than One Answer Was Allowed

	Female N (%of 318)	Male N (% 100)	Total N (%of 418)
Have you used any of these medications without a physician's prescription in the last 6 months?			
Antibiotic	86 (74.1%)	30 (25.9%)	116 (27.8%)
Antipyretics	79 (74.5%)	27 (25.5%)	106 (25.4%)
Analgesics	243 (78.6%)	66 (21.4%)	309 (73.9%)
Aspirin	32 (59.3%)	22 (40.7%)	54 (12.9%)
Cold medication	39 (68.4%)	18 (31.6%)	57 (13.6%)
Epinephrine	–	–	–
Cough medication	56 (73.7%)	20 (26.3%)	76 (18.2%)
Antifungal	10 (83.3%)	2 (16.7%)	12 (2.9%)
Antacids	51 (72.9%)	19 (27.1%)	70 (16.7%)
laxative	13 (81.3%)	3 (18.8%)	16 (3.8%)
Vitamins	192 (81.0%)	45 (19%)	237 (56.7%)
Constipation drugs	22 (81.5%)	5 (18.5%)	27 (6.5%)
Hypnotics	29 (85.3%)	5 (14.7%)	34 (8.1%)
For which of these complaints/symptoms have, you used drugs without a physician's prescription in the last 6 months.			
Constipation	30 (71.4%)	12 (28.6%)	42 (10%)
Headache	204 (74.5%)	70 (25.5%)	274 (65.6%)
Fever	78 (78.8%)	21 (21.2%)	99 (23.7%)
Abdominal discomfort	47 (87%)	7 (13%)	54 (12.9%)
Digestive problems	29 (72.5%)	11 (27.5%)	40 (9.6%)
Nausea	27 (96.4%)	1 (3.6%)	28 (6.7%)
Vomiting	13 (100%)	–	13 (3.1%)
Diarrhea	20 (76.9%)	6 (23.1%)	26 (6.2%)
Common cold	73 (68.9%)	33 (31.1%)	106 (25.4%)
Respiratory problem	30 (83.3%)	6 (16.7%)	36 (8.6%)
Musculoskeletal pain	112 (79.4%)	29 (20.6%)	141 (33.7%)
Oral / dental problem	40 (80%)	10 (20%)	50 (12%)
Skin condition	21 (91.3%)	2 (8.7%)	23 (5.5%)
Urinary tract infection	17 (81%)	4 (19%)	21 (5%)
Insomnia	37 (82.2%)	8 (17.8%)	45 (10.8%)

Headache was considered the most common cause for using OTC drugs without a medical prescription (274, 65.6%), followed by musculoskeletal pain (141, 33.7%), and then common cold (106, 25.4%). As shown in Table 3, vomiting was the lowest symptom frequency that led to the use of OTC products (13, 3.1%), in addition, only females consider vomiting as a complaint for using OTC drugs in the last 6 months without a physician prescription. More detailed information regarding the frequency and the causes of using OTC medications without a physician's prescription in the last 6 months is demonstrated in Table 3.

Regression Analyses Regarding the Attitude Toward OTC Drugs

The chi-square test was used to investigate the presence of a correlation between the attitude level and sociodemographic characteristics, Phi (φ) factor was used to examine the strength of association (and is a measure of effect size), where the value of "1" represents a complete association, "0" no association, "0.1" small association, "0.3" medium association and "0.5" large association. Data analysis revealed that there is a significant correlation between suffering from chronic pain and marital status (p=0.039; φ = 0.142), educational level (p=0.018; φ = 0.181), and job (p=0.013, φ =0.174). Using medication without a physician's prescription was positively correlated with educational level and job, where Circassian

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or Chechen who have non-medical bachelor's degrees using the medication without a physician's prescription more than other educational levels (p=0.002, φ = 0.215).

Participants who aged over 50 years significantly tended not to repeat the use of liquid OTC from the same package after more than a 1-month post opening (p<0.000, φ = 0.256), similar to this result, people who have a non-medical bachelor's degree significantly do not repeat the use of liquid OTC after more than 1-month post opening (p = 0.003, φ = 0.207). The frequency of using OTC drugs was statistically positively correlated with age (p = 0.01, φ = 0.246), as well as with the presence of family members in the medical field (p = 0.002, φ = 0.198). In addition, seeking help for determining the dosage was statistically associated with age (0.005, φ = 0.272), for example, respondents who aged above 50 years significantly asked the pharmacist for help more than others, Table 4. Reasons for self-medication with OTC drugs without a physician's prescription were statistically correlated with monthly income (p= 0.01, φ = 0.397), as

Table 4 Regression Analyses Regarding the Attitude Toward OTC Drugs (N = 418)

			P-value, Phi (φ)						
Questions		**N (%)**	**Age**	**Gender**	**Marital Status**	**Income**	**Education**	**Family Members in Medical Field**	**Job**
Do you suffer from chronic pain?	Yes	112 (26.88%)	0.093	0.079	0.039*a φ =0.142	0.256	0.018*a φ =0.181	0.645	0.013*a φ =0.174
	No	306 (73.2%)							
Did you know that some medications require a prescription, and some do not	Yes	425 (99.3%)	0.113b	0.561b	1b	1b	0.473b	0.561b	0.842b
	No	3 (0.7%)							
Do you use medication without a physician's prescription	Yes	319 (76.3%)	0.177	0.071	0.295b	0.801	0.002a* φ = 0.215	0.473	0.019a* φ = 0.168
	No	99 (23.7%)							
Do you determine the dose of your drug	Yes	59 (14.1%)	0.076	0.535	0.289b	0.097	0.111	0.95	0.841
	No	359 (85.9%)							
Do you have a regular health facility or physician you visit	Yes	101 (24.2%)	0.056	0.129c	0.777	0.314	0.055	0.410c	0.185
	No	317 (75.8%)							
Do you repeat the use of liquid OTC from the same package after more than 1-month post opening?	Yes	312 (74.6%)	0.000*a φ =0.256	0.451c	0.402	0.608	0.003a* φ =0.207	0.505c	0.105
	No	106 (25.4%)							
How often do you use OTC products	Daily	24 (5.7%)	0.01*b φ = 0.246	0.214	0.688	0.098b	0.598b	0.002b* φ = 0.198	0.157a
	Weekly	12 (2.9%)							
	Every 2 weeks	4 (1%)							
	Monthly	6 (1/4%)							
	As needed	372 (89%)							
Source of information	Physicians	96 (23%)	0.574b	0.373b	0.703b	0.172b	0.718b	0.098b	0.120b
	Pharmacist	183 (43.8%)							
	Family member/ relative	28 (6.7%)							
	Drug leaflet	47 (11.2%)							
	Internet	51 (12.2%)							
	Self-experience	13 (3.2%)							

(*Continued*)

Table 4 (Continued).

			P-value, Phi (φ)						
Questions		**N (%)**	**Age**	**Gender**	**Marital Status**	**Income**	**Education**	**Family Members in Medical Field**	**Job**
Do you read drug leaflets when you buy medication for use	Never	12 (2.9%)	0.629[b]	0.093[b]	0.464[b]	0.471[b]	0.376[b]	0.174	0.864[b]
	Rarely	28 (6.7%)							
	Sometimes	92 (33%)							
	Often	145 (34.7%)							
	Always	141(33.7%)							
Who will help you with dosage of the drug if it is without a prescription	Pharmacist	209 (50%)	0.005[b*] φ = 0.272	0.900[b]	0.110[b]	0.103[b]	0.34[b]	0.273[b]	0.584[b]
	Friends	5 (1.2%)							
	Nurse	1 (0.2%)							
	Leaflet	112 (26.8%)							
	Internet	7 (1.7%)							
	Physicians	84 (20.1%)							
Do you think that your OTC medications are enough to treat you without the need to visit the doctor?	Yes	19 (4.5%)	0.392[b]	0.506	0.404[b]	0.876[b]	0.433[b]	0.763	0.711[b]
	No	73 (17.5%)							
	It depends on the case	326 (78%)							
Reasons for self-medication with OTC drugs without a physician's prescription	I had a previous experience of treating the similar ailment	175 (41.9%)	0.416[b]	0.227[b]	0.474[b]	0.01[b*] φ = 0.397	0.856[b]	0.95[b]	0.633[b]
	Getting quick relief	2 (0.5%)							
	It was a minor ailment	160 (38.3%)							
	Ease of accessibility	10 (2.4%)							
	The ailment required rapid emergency care	27 (6.5%)							
	It was for the purpose of prevention	13 (3.1%)							
	I had no time to go to the doctor (timesaving)	9 (2.2%)							
	Financial constraints	10 (2.4%)							
	I do not trust medical services	5 (1.2%)							
	Fear of hospitalization	7 (1.7%)							

Notes: [a]chi-square. [b]fisher exact test. [c]contingency table.*Indicates significance *P-value*<0.05.

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those who incomed from 500 to 1000 tend to medicate themselves because they have previous experience of treating a similar ailment.

Discussion

This cross-sectional study reveals trends in self-medication practices among the Circassian and Chechen populations in Jordan: individuals aged 40–49 years and those aged 50 years and older, as well as married individuals, non-medical professionals, and those without chronic conditions, had a greater tendency for self-medication compared to others. Looking at gender, females were more likely to use OTC drugs than male. This investigation was similar to what seen in a research conducted in Ethiopia.[20] This is likely due to gender specific preferences of females, who like having conversations and interacting with each other more regularly than men, which may have pushed them to use OTC drugs.[20]

While assessing the attitudes and practices regarding self-medication it was observed that 51% of the study participants read the instructions given on the product label and over 52.4% of the participants checking the expiry date of the drug before using the drug and 50% of participants acknowledged that OTC medications might have adverse effects. This result suggests that the majority of the Circassian or Chechen population in Jordan has a good understanding of the potential risks linked to OTC self-medication practices. A few studies has shown that patients acknowledge the relevance of taking these drugs wisely and are aware of their potential negative consequences.[21,22] This increased understanding is essential since some patients see OTC drugs as completely safe medication, resulting in a misunderstanding of the related dangers.[23]

The most widespread OTC market in the world is for analgesics.[24] Our findings indicated that analgesics are the most frequently mentioned (73.9%) group of drugs used for self-medication. In accordance with this fact, further studies done in Jordan have shown that analgesics are the most frequently utilized self-medication drugs.[8,18,25] Moreover, in Jeddah and Makkah, Saudi Arabia, analgesics were the predominant group of medications used by the general population, representing 65.6% of self-medication behaviors.[26] Similarly, in the Western Region of Saudi Arabia, analgesics represented the most commonly used medicine, accounting for 44.0% of self-medication cases among the general population.[27] Other research investigations have shown similar trends in which analgesics were frequently utilized for self-medication.[28,29] Nonetheless, analgesics may negatively influence patients' health. Particular analgesics, such as non-steroidal anti-inflammatory drugs, are associated with an increased chance of stomach ulcers and kidney failure.[30] Considering that analgesics can adversely affect a patient's health, it is necessary to enhance public understanding of the potential risks linked to their excessive usage via health education campaigns. Headache, musculoskeletal pain, and the common cold are common mild disorders seen in daily life. Consequently, the aforementioned clinical disorders were the most prevalent for which self-medication was pursued. This finding has been confirmed by other studies.[31,32] Participants with non-medical bachelor's degrees ($p=0.002$, $\varphi = 0.215$) and those who do not work in the medical field ($p=0.019$, $\varphi = 0.168$) shown a higher rate for using OTC medications compared to participants with medical bachelor's degrees or those with family members in the medical field. This may be associated with a reduced understanding of the adverse effects of OTC medications among those with a lower educational background.[33]

This research had a few limitations. Additional characteristics that may have influenced respondents to select for OTC medications were not included in the questionnaire, such as health behavior (smoking, and physical activity) and the quality of health services (perceived quality of treatment). Furthermore, the data was collected online, which is considered one of the important limitations.

Conclusion

This study highlights the high prevalence of self-medication with OTC drugs among Circassians and Chechens in Jordan. While the majority of participants demonstrated awareness of potential risks, such as adverse effects and the importance of reading drug leaflets, self-medication practices remain widespread. Analgesics and vitamins were the most frequently used OTC drugs, with headaches and musculoskeletal pain being the leading reasons for use.

The findings emphasize the need for targeted public health interventions to promote the safe and informed use of OTC medications. Educational campaigns should focus on enhancing awareness of appropriate self-medication practices

while addressing misconceptions about OTC drug safety. Engaging healthcare professionals, particularly pharmacists, to provide accurate guidance is essential to mitigate potential misuse. By addressing these areas, health authorities can support safer self-medication behaviors, contributing to improved health outcomes in these vital communities within Jordanian society.

Data Sharing Statement

Data will be available from the corresponding author upon reasonable request.

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Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

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