

# Knowledge, Attitudes, and Practices Toward Self-Medicating Eye Symptoms in Jazan Region

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## Abstract

**Background:** Self-medication with ophthalmic medications is a common practice; however, it raises concerns about the safety and appropriateness of treatment. Therefore, the current study aims to evaluate the knowledge, attitudes, and approaches toward self-medicating eye symptoms in the Jazan region.

**Methods:** An observational cross-sectional study on the population comprises all individuals (aged 18 and up) who can read and write who were now taking or had previously used ophthalmic medicines. Following IRB approval, the questionnaire was distributed on social media to evaluate the aim of the study.

**Results:** The majority of self-medicating ophthalmic medication users were male and aged between 18 and 29. 97.6% of self-medicators admitted to the practice; however, only 24.1% knew the specific type of medication they used. Lubricant eye drops were the most

used medication. Eye dryness and redness were the most common symptoms leading to self-medication, with repeated symptoms and the perception of a simple condition being the most common reasons.

**Conclusion:** Self-medication with ophthalmic medications is widespread in the studied population; nevertheless, there needs to be more knowledge about the specific medications used. Symptoms such as eye dryness and redness are common reasons for self-medication, driven by the perception of simplicity and repeated occurrence.

**Keywords:** Self-medication; Eye symptoms; Blurred vision; Eye redness; Eye pain ; Jazan

## Introduction

Self-medication (SM) is a common practice worldwide since most societies have multiple methods of dealing with various health conditions besides the official Western medicine [1]. WHO described SM as the individual decision to use certain medications or materials to relieve and treat specific illnesses or symptoms [2]. Simple medications that are commonly used are available without a medical prescription in pharmacies in some countries [3]. SM may include the use of herbal medicines [4]. There are many forms of SM, including using medications without a medical prescription, using previously prescribed medications, and prescribing medicines to other persons [5].

Most ophthalmic symptoms and signs, such as eye redness, watering of the eye, foreign body sensation, and itching, often indicate the use of topical or systemic eye medications. Many patients with eye symptoms use self-prescribed medication without seeking medical care. Multiple factors can enhance the phenomena of SM, such as an insufficient level of awareness, difficulty accessing health facilities, and previous history of ophthalmic diseases [6]. The inappropriate usage of ophthalmic drugs may lead to anti-microbial resistance, failure of treatment or poor treatment outcomes, adverse reactions, and visual impairment. Globally, in ophthalmology, the prevalence of SM ranges from 23.3% to 73.6%, and it is more common in low-income and middle-income countries [7-10].

In Saudi Arabia, in 1978, the Ministry of Health prevented selling prescription drugs without a medical prescription. However, the SM practice is still widespread [11]. In 2021, a cross-sectional study conducted in the Riyadh region aimed to investigate the patterns of SM in ophthalmology. The results of the study exhibited a high prevalence (37.2%) of SM [12]. Moreover, in 2020, in Taif City, a cross-sectional study assessed the prevalence of SM and attitude and practice regarding the use of Traditional Eye Medicine (TEM) for eye-related problems. The incidence of SM and TEM was 35% [13].

Therefore, The present study aims to assess the knowledge, attitudes, and practices (KAP) toward self-medication for eye symptoms in the Jazan region.

## Materials and Methods

### 1. Study Design, Setting, Population, and Sampling

This cross-sectional study utilized an online self-administered questionnaire. The study design involved a questionnaire-based cross-sectional approach using self-administered anonymous electronically distributed questionnaires to investigate the knowledge, attitudes, and practices (KAP) concerning self-medication for eye symptoms in the Jazan Region of Saudi Arabia. It was carried out in the Jazan Region, which has approximately two million residents.

The population studied consisted of individuals aged 18 and above who were residents of the Jazan region and had used or were currently using ophthalmic medications. Exclusion criteria included individuals under 18, healthcare providers, those who had never used ophthalmic medications, individuals with chronic debilitating diseases affecting communication or participation, and those who refused to participate or did not complete the questionnaires.

The sample size was determined using the Epi-Info calculator based on the estimated population of the Jazan region, which is approximately two million. With a 95% confidence interval, 5% margin of error, and 50% response distribution, the minimum sample size was established at 385. Convenience sampling was employed, accepting all participants who met the study criteria.

### 2. Data Collection, Management and Statistical Analysis

The questionnaire was obtained from previously published research with similar aims [12]. An online self-administered questionnaire was developed, face-validated, and pretested to align with the study objectives. The questionnaire consisted of five parts, covering demographics, knowledge, self-medication practices, drug installation and storage practices, and attitudes toward self-medication. Data collected through the questionnaire were securely stored in a password-protected cloud-based program and USB drive. The data were coded and entered into Excel software, with a double-check process to minimize entry errors. Statistical Package for the Social Sciences (SPSS) was used for data analysis, including descriptive statistics such as numbers, percentages, means, and standard deviations. The chi-square test ( $\chi^2$ ) assessed associations between categorical variables, with a significance level set at  $p < 0.05$ .

### 3. Ethical Considerations

The questionnaire was distributed via social media platforms (Telegram, WhatsApp, and Twitter) after obtaining approval from the Institutional Review Board (REC-45/03/755). Participants accessed the questionnaire through a survey URL delivered to them. Ethical considerations were addressed by ensuring participant privacy and anonymity through anonymous questionnaires. No identification data was collected. A waiver of the consent form was obtained as the data collection was conducted online, and participants had the freedom to decline participation without consequences. Data was securely stored and accessible only to the investigators involved in the study.

## Results

Table 1 presents the demographic factors of the participants (N=627). The majority of the participants were male (63.0%) and aged between 18 and 29 years (62.5%). Most of them resided in a village (56.1%) and had a college education (67.3%). In terms of occupation, a significant proportion were students (47.2%). The majority of participants did not have medical insurance coverage (80.5%), and a significant number had a monthly income of less than 5000 SR (Saudi Riyal) (50.4%).

**Table 1: Demographic factors of the participants (N=627)**

Parameter	Category	N	%
Gender	Male	395	63.0%
	Female	232	37.0%
Age	18-29	392	62.5%
	30-39	107	17.1%
	40-49	96	15.3%
	50 years or older	32	5.1%
Residency	Village	352	56.1%
	City	275	43.9%
Educational level	Illiterate	6	1.0%
	Primary school	6	1.0%
	Intermediate school	16	2.6%
	High school	159	25.4%
	College	422	67.3%
	Higher education	18	2.9%
Occupation	Not working	76	12.1%
	Students	296	47.2%
	Employee	255	40.7%
Medical insurance Coverage?	No	505	80.5%
	Yes	122	19.5%
Monthly income	< 5000 SR	316	50.4%
	5000-10000	130	20.7%
	10000-25000	157	25.0%
	> 25000	24	3.8%

Table 2 provides information on the prevalence of using ophthalmic medications without a prescription and the types of medications used. The majority of participants admitted to using ophthalmic medication without a prescription (97.6%). However, only a tiny proportion of them knew the specific type of medication or self-treatment they used (24.1%). The most commonly used type of eye drop was lubricant (83.4%), followed by vasoconstrictor (8.6%). Most participants reported an improvement in their symptoms (83.4%), and a majority did not experience any adverse effects (89.2%). For those who experienced adverse effects, the most common action taken was to stop the medication (65.3%).

<b>Parameter</b>	<b>Category</b>	<b>N</b>	<b>%</b>
Do use ophthalmic medication without a prescription?	Yes	612	97.6%
	No	15	2.4%
Do you know what type of medication or self-treatment you used for your eyes without a prescription or medical advice?	No	476	75.9%
	Yes	151	24.1%
Type of eye drop	Lubricant	126	83.4%
	Vasoconstrictor	13	8.6%
	Anti-biotic	5	3.3%
	Herbal/traditional medicine	5	3.3%
	Corticosteroid	1	0.7%
	Antibiotic+ corticosteroid	1	0.7%
Symptoms improvement	No	104	16.6%
	Yes	523	83.4%
Having adverse effects	No	559	89.2%
	Yes	68	10.8%
If yes, what did you do?	Stopping the medication	32	65.3%
	Ask pharmacist or physicians	7	14.3%
	Reduce the dose	5	10.2%
	Do not stop the medication	5	10.2%

Figure 1 illustrates the symptoms that led participants to engage in self-medication. The most prevalent symptoms were eye dryness (49.1%) and eye redness (44.7%). Eye itching (28.3%) and burning eyes (24.2%) were also frequently reported symptoms.

**Figure 1: Symptoms Leading the Participant to Self-Medication**

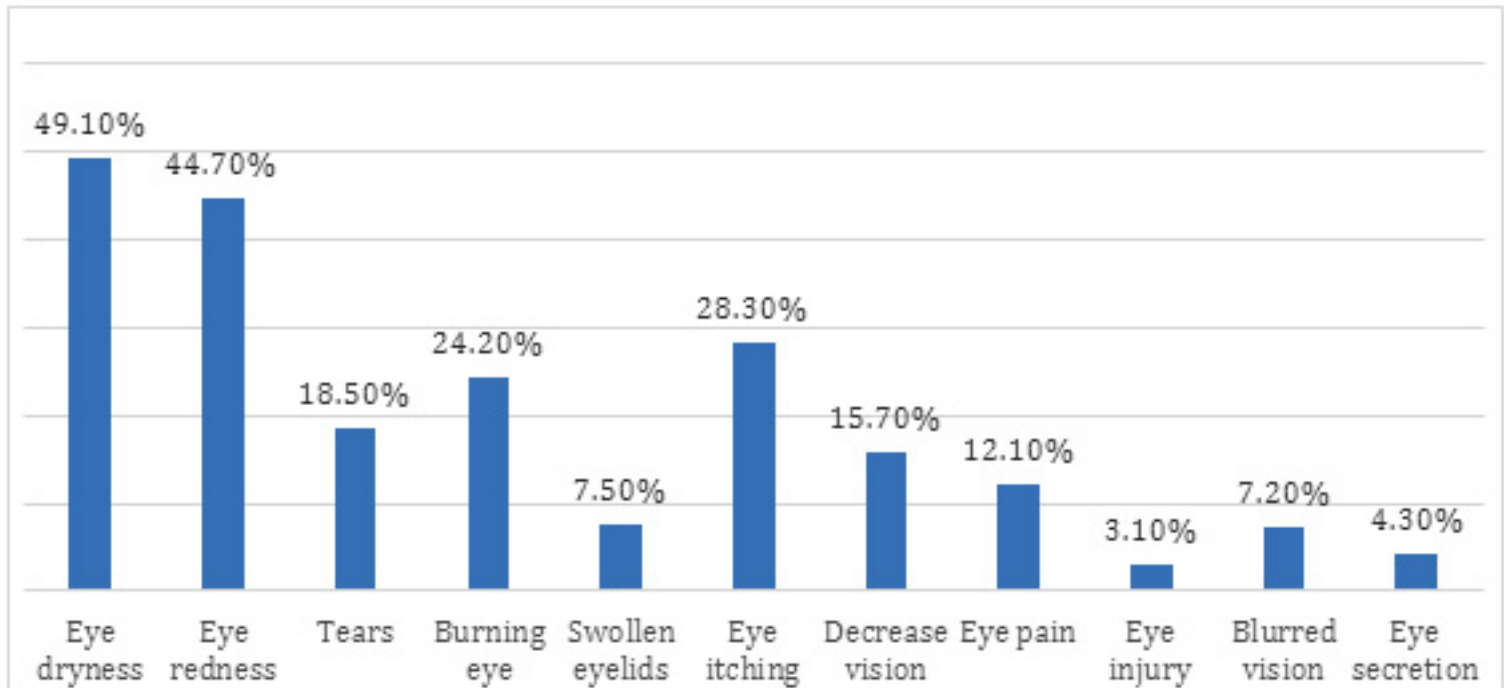


Figure 2 presents the reasons for self-medication among participants. The most common reasons were repeated symptoms (48.7%) and the perception that the symptom was simple (45.2%). Other reasons included long hospital waiting times (23.8%) and being busy (18.5%).

**Figure 2: Reasons for Self-Medication Among Participants**

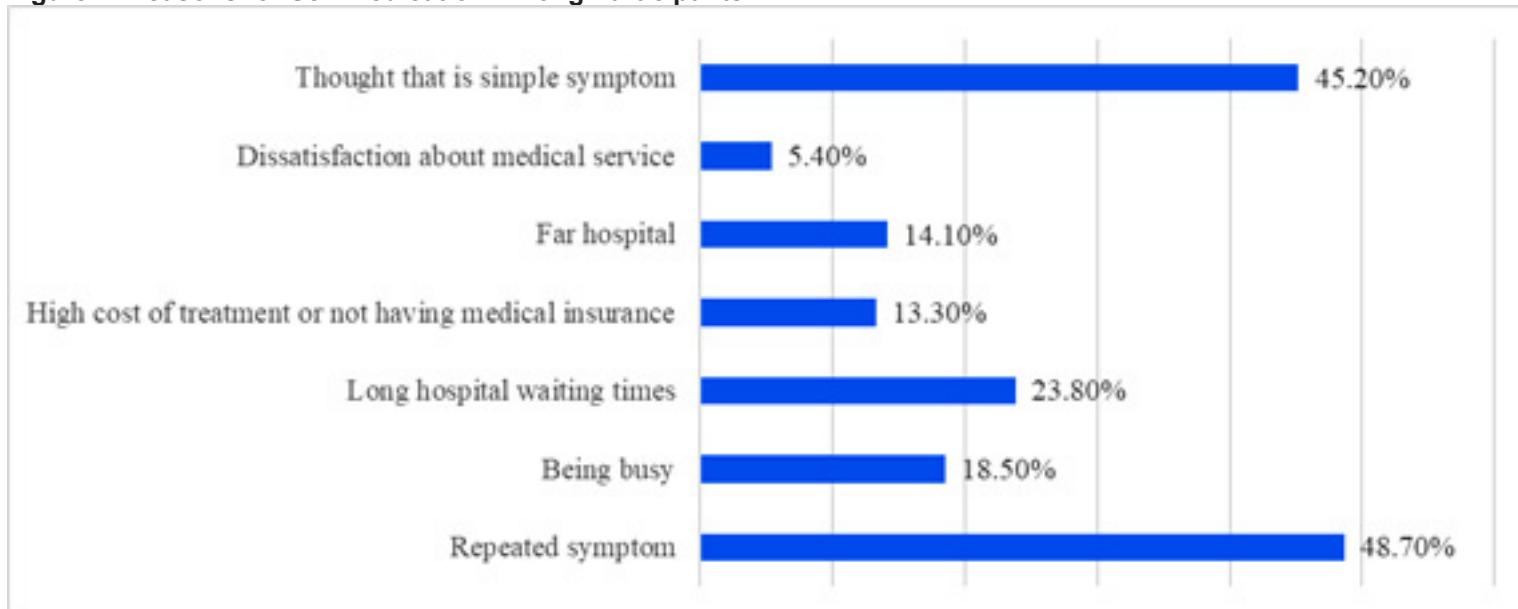




Table 3 provides information on eyedrop installation and storage practices. The results show the sources of advice for using self-eye medication. The most common source was a pharmacist (40.0%), followed by family members or friends (24.7%) and physicians (18.1%). A significant proportion of participants reported that the eyedrop bottle nozzle sometimes touched their eye while in use (50.6%), and most participants did not share their eyedrops with others (76.6%). Regarding the time spacing between different eyedrops, a substantial number of participants reported no time spacing (38.4%). Most participants used eyedrops first before eye ointment (79.7%). Only a minority reported reading medication pamphlets (40.5%), and handwashing before applying eyedrops was reported by 50.4% of participants. The most common place of storage for eyedrops was the refrigerator door (50.4%), and most participants checked the expiration date before use (65.1%). In general, it was found that 27.4 % of the participants had a high level of knowledge, while 14.5 % of them had poor information.

**Table 3: Eyedrop Installation and Storage Practices**

Parameter	Category	N	%
What are the sources of advice for using self-eye medication?	physicians	113	18.1%
	Pharmacist	251	40.0%
	family members or friends	155	24.7%
	others	108	17.2%
Does the eyedrop bottle nozzle touch your eye while using?	Never	266	42.4%
	Sometimes	317	50.6%
	Always	44	7.0%
Do you share your eye drop with others	No	480	76.6%
	Yes	147	23.4%
Time space between different eyedrops	5–10 minutes	199	31.7%
	5 minutes	187	29.8%
	No time spacing	241	38.4%
When using both, which do you use first; eyedrops or eye ointment?	Eyedrop first	500	79.7%
	Ointment first	127	20.3%
	Not matter	0	0.0%
Do you read medication pamphlets?	No	152	24.2%
	Yes	254	40.5%
	Sometimes	221	35.2%
Do you wash your hands before applying eyedrops?	No	150	23.9%
	Yes	316	50.4%
	Sometimes	161	25.7%
Place of storage of eyedrops	Refrigerator door	316	50.4%
	In warm rooms such as a bedroom	311	49.6%
Do you check the expiration date of medication before use	No	97	15.5%
	Yes	408	65.1%
	2.00	122	19.5%
Knowledge	Poor	91	14.5%
	Moderate	364	58.1%
	High	172	27.4%

The association between demographic factors and the level of knowledge about self-eye medication was examined in the study. The results revealed some significant associations. Age was found to have a statistically significant association with knowledge (p-value = 0.008). Participants aged 18-29 had the highest proportion of moderate knowledge (62.2%), while those aged 50 years or older had the highest proportion of high knowledge (43.8%).

Occupation also showed a significant association with knowledge (p-value = 0.014). Students had the highest proportion of moderate knowledge (63.9%), while employees had the highest proportion of poor knowledge (15.3%). Moreover, monthly income was found to have a significant association with knowledge (p-value = 0.015). Participants with a monthly income of less than 5000 SR had the highest proportion of moderate knowledge (63.3%). However, other demographic factors such as gender, residency, educational level, medical insurance coverage, and the use of ophthalmic medication without a prescription did not show significant associations with the level of knowledge (Table 4).

**Table 4: Association Between Demographic Factors and Level of Knowledge**

Parameter	Category	Knowledge						P-value
		Poor		Moderate		High		
		N	%	N	%	N	%	
Gender	Male	59	14.9%	223	56.5%	113	28.6%	0.566
	Female	32	13.8%	141	60.8%	59	25.4%	
Age	18-29	61	15.6%	244	62.2%	87	22.2%	0.008*
	30-39	12	11.2%	58	54.2%	37	34.6%	
	40-49	12	12.5%	50	52.1%	34	35.4%	
	50 years or older	6	18.8%	12	37.5%	14	43.8%	
Residency	Village	45	12.8%	218	61.9%	89	25.3%	0.079
	City	46	16.7%	146	53.1%	83	30.2%	
Educational level	Illiterate	2	33.3%	3	50.0%	1	16.7%	0.326
	Primary school	3	50.0%	2	33.3%	1	16.7%	
	Intermediate school	4	25.0%	9	56.3%	3	18.8%	
	High school	20	12.6%	96	60.4%	43	27.0%	
	College	61	14.5%	243	57.6%	118	28.0%	
Higher education	1	5.6%	11	61.1%	6	33.3%		
Occupation	Not working	8	10.5%	44	57.9%	24	31.6%	0.014*
	Students	44	14.9%	189	63.9%	63	21.3%	
	Employee	39	15.3%	131	51.4%	85	33.3%	
Medical insurance Coverage?	No	69	13.7%	291	57.6%	145	28.7%	0.231
	Yes	22	18.0%	73	59.8%	27	22.1%	
Monthly income	< 5000 SR	50	15.8%	200	63.3%	66	20.9%	0.015*
	5000-10000	18	13.8%	69	53.1%	43	33.1%	
	10000-25000	22	14.0%	80	51.0%	55	35.0%	
	> 25000	1	4.2%	15	62.5%	8	33.3%	
Use any ophthalmic medication without a prescription	Yes	91	14.9%	353	57.7%	168	27.5%	0.240
	No	0	0.0%	11	73.3%	4	26.7%	



## Discussion

The act of self-administering ophthalmic drugs, specifically eye drops, is a widely observed phenomenon within the Jazan region, Saudi Arabia. A significant proportion of respondents acknowledged engaging in the use of ophthalmic medication without obtaining a prescription, suggesting a notable prevalence of self-administration for the management of ocular symptoms. The present study's findings align with other research that has documented elevated levels of self-medication for ocular ailments [14-16]. The current study reveals a notable prevalence of self-medication with ocular drugs without a prescription, amounting to 97.6%. This figure surpasses the documented prevalence rates observed in Nigeria (73.6%) [17]. Furthermore, our results are higher than those reported in some different studies conducted in Saudi Arabia, including 54.1 % in the Riyadh region [18], 35 % in the Taif region [13], and 62.4 % in the general population in Saudi Arabia [12].

The observed discrepancies could perhaps be attributed to the implementation of diverse research methodologies and the inclusion of distinct demographic groups. The prevalent practice of self-medication may be influenced by the accessibility and availability of eye drops without the need for a prescription.

A noteworthy worry pertaining to self-medication, as revealed in the present study, is the participants' limited understanding regarding the precise nature of the medicine or self-treatment employed [19]. A limited percentage of participants knew the specific classification of eye drops they were utilizing. The absence of awareness of self-medication activities gives rise to apprehensions over their safety and efficacy [20]. In the absence of a basic understanding regarding the specific drug employed, individuals may unintentionally engage in the improper utilization or conflation of incompatible eye drops, hence potentially resulting in undesirable consequences or insufficient therapeutic outcomes.

In addition, the prevailing symptoms frequently cited by participants as triggers for self-medication were ocular dryness and ocular redness. The symptoms above are frequently linked to ocular disorders such as dry eye syndrome and conjunctivitis, both of which are prevalent afflictions of the eye [21]. Eye dryness has been identified in previous studies as a commonly reported symptom that motivates individuals to engage in self-medication [16,22]. The act of self-medication has the potential to impede the prompt treatment of more severe illnesses, such as infections that may manifest with comparable symptoms. It is imperative to provide individuals with education regarding the fundamental factors contributing to these symptoms and to advocate for the implementation of suitable measures for their management, which may involve obtaining guidance from healthcare professionals.

The individuals provided a range of reasons for engaging in self-medication, with the most prevalent being the recurrence of symptoms and the belief that the ailment

was uncomplicated. The results of this study suggested that individuals may engage in self-treatment as a result of symptom recurrence or the belief that the disease does not necessitate professional care. Previous research has identified similar rationales when investigating the phenomenon of self-medication [12,14,23,24]. It is imperative to acknowledge and rectify these misconceptions while raising awareness about the potential hazards and constraints associated with self-medication in order to foster appropriate utilization of ophthalmic drugs.

Moreover, the primary source of guidance for individuals practicing self-medication was pharmacists, followed by family members or friends and physicians. This discovery underscores the significance of pharmacists as readily available healthcare practitioners who may offer advice regarding the proper utilization of non-prescription eye drops [25,26]. The phenomenon of self-medication entails the utilization of medicinal substances without the guidance or prescription of a healthcare professional. It is worth noting that various eye drop solutions possess distinct storage prerequisites. When drugs are stored in conditions that are hot, moist, or intensely lighted, there is a risk of diminished effectiveness due to alterations in their chemical and physical characteristics. The majority of ophthalmic preparations are typically stored in a temperature-controlled environment, namely within the range of 2–8°C, to ensure optimal stability and preservation [27].

Certain medications may undergo irreversible degradation with even brief exposure to temperatures ranging from 25°C to 30°C. These temperatures have the potential to manifest in bedrooms located in nations characterized by hot climates, such as Saudi Arabia. The findings of our study indicate that 49.6 % of the participants stored their medication in warm environments. This result aligns with the findings of previous studies conducted by Curti et al. (35%) [28] and Alfawzan et al. (43%) [29]. Despite the presence of air conditioning in many places, it is essential to note that drugs might still be susceptible to the effects of hot weather.

The participants' knowledge level pertaining to self-administration of eye medication exhibited variability, with 27.4% demonstrating a high level of knowledge and 14.5% exhibiting a low level of knowledge. Significant associations were seen between the level of knowledge and variables such as age, occupation, and monthly income. The results of the study indicate that participants who were 50 years of age or older demonstrated more significant levels of knowledge. This finding suggests that older adults may possess a more incredible amount of experience and understanding regarding the proper practices for self-administering eye medication [30].

On the other hand, the observed correlations among age, occupation, and monthly income in relation to knowledge levels in this study underscore the significance of implementing focused educational interventions. There is a need to prioritize initiatives aimed at enhancing knowledge and awareness levels among younger individuals, students, and individuals with lower



socioeconomic status. The implementation of educational campaigns, both inside healthcare facilities and through community outreach initiatives, can effectively facilitate the dissemination of accurate information pertaining to self-administration of eye medication, potential hazards associated with it, and appropriate usage guidelines.

Overall, this study makes a valuable contribution to the current body of literature by providing insights into the prevalence of self-medication practices and the degrees of knowledge within the community under investigation. Nevertheless, it is imperative to recognize a number of restrictions. Initially, the investigation was dependent on data that was self-reported, potentially introducing recollection bias and social desirability bias. Additionally, it is essential to note that the study was conducted within a specific demographic, which limits the generalizability of the findings to other locations or populations. To strengthen the external validity of the findings, future research should consider incorporating a more extensive and more varied sample.

## Conclusions and Recommendations

In conclusion, the investigated population frequently engages in self-medication with ophthalmic drugs, displaying a notable prevalence of utilizing eye drops without obtaining a prescription. The limited understanding regarding the precise pharmaceuticals employed gives rise to apprehensions regarding the safety and suitability of self-administered medication practices. Efforts ought to be exerted in order to foster the promotion of responsible self-medication, enhance levels of knowledge, and instill a proactive inclination in individuals to seek professional help when necessary. Educational initiatives aimed towards younger demographics, students, and persons with lower socioeconomic status can have a substantial impact on enhancing knowledge and advocating for the adoption of safe methods in self-administering ocular medication.

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