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ORIGINAL ARTICLE

Patterns of Self-Medication with Ophthalmic Drugs and Associated Determinants among Patients Visiting Ophthalmology Clinics

FAYAZ AHMED SOOMRO[1], ABDUL QADEEM SOOMRO[2], ABDUL SATTAR[3], SYED SAIFULLAH SHAH[4], ALI MUJTABA SHAH[5], ABDULLAH LAGHARI[6], ANAS BIN TARIQ[7]

[1]*Consultant Ophthalmologist, Institute Al Ibrahim Eye Hospital, Isra Postgraduate Institute of Ophthalmology, Karachi*
[2]*Consultant Ophthalmologist, Alibrahim Eye Hospital, Isra Postgraduate Institution of Ophthalmology Malir, Karachi*
[3]*Consultant Ophthalmologist, Al-Ibrahim Eye Hospital Isra Postgraduate Institute of Ophthalmology, Karachi*
[4]*Consultant Ophthalmologist, Al-Ibrahim Eye Hospital Isra postgraduate institute Ophthalmology, Karachi*
[5]*Ophthalmologist, Al-Ibrahim Eye Hospital Isra Postgraduate Institute of Ophthalmology, Karachi*
[6]*Optometrist, Isra School of Optometry / Isra Postgraduate Institute of Ophthalmology, Karachi*
[7]*Lecturer, Department of Medical Education, Al TIBRI Medical College & Hospital, Isra University Karachi Campus*
Correspondence to: Dr Anas Bin Tariq, Email: anastariq93@gmail.com, Cell: 03000210289

ABSTRACT

Background: Worldwide, use of self-medication (SM) is highly common, leading to inappropriate use of medications.

Objectives: To determine the prevalence and pattern of self-medication and their associated determinants in patients attending Ophthalmology clinics

Methods: A cross sectional analytical research using non-probability consecutive sampling technique was carried out for six months (April 2023 to September 2023) at the out-patient department (OPD) of Ophthalmology department of a tertiary care hospital in Karachi, Pakistan. 195 patients >18 years of age, visiting the ophthalmology OPD during study time period and providing informed consent for participating in the research were included. SPSS v23.0 was used for data analysis. Association was reported between various factors and SM keeping p<M0.05 statistically significant.

Results: Among 195 ophthalmic patients, 45.1% (n=88) reported practicing self-medication with eye medications. Antibiotics were the most commonly used drugs, followed by corticosteroids. Eye redness and foreign body sensation were the main symptoms prompting self-treatment. Easy access to medications and previous experience were the leading reasons for this practice, while pharmacy professionals were the primary source of information guiding self-medication. Awareness and attitude both were significantly associated with SM.

Conclusion: Self-medication with ophthalmic drugs was common among patients, largely driven by easy access to medications and prior experience, highlighting the need for stricter regulation and increased patient awareness to promote safe use of eye medications.

Keywords: Drug accessibility, Self-Medication, Ocular Health, Ophthalmic Drugs.

INTRODUCTION

Worldwide, the usage of non-prescribed medicines or self-medication (SM) is highly common. This leads to inappropriate use of medications[1]. The World Health Organization (WHO) has refereed to SM "selecting and using medications by individuals for treating symptoms or illnesses that are self-recognized"[2]. This means purchasing medications without a clinician's prescription, using previously prescribed doses of medicines that were left over, sharing drugs of other social groups or family members[3]. It also includes misusing or medically prescribed drugs either by modifying, prolonging or interrupting time period of administration or dosages[4].

In majority of ophthalmological pathologies, be it acute or chronic; seldom require usage of ophthalmic medicine or even in some cases, systemic medications as well[5]. Although the clinician is regarded as authentic and official providers of treatment, many individuals experiencing eye symptoms or complains tend to treat themselves in advances, before seeking medical checkup by a medical professional[6]. In various eye conditions, like red eye, eye watering, sensation of foreign body in eye and itching in the eyes, self-medication is a very common practice[7]. Moreover, a previous history of ocular disease, challenges in accessibility to healthcare facilities, inadequate awareness of the negative impact of SM and thinking their symptoms are mild are some of the factors that people consider SM in ophthalmologic cases[8].

Additionally, individuals that buy SM for ophthalmic issues might use the drugs inappropriately and this might cause various consequences such as resistance to microbes, poor outcome of treatment, side effects, progression of actual condition, eventually leading to visual morbidity[9,10]. Even after all such facts, the incidence of SM in terms of ophthalmic medications ranges around 23.3 % to 73 .6 %[11,12]. The prevalence is more common in low and middle income populations[13].

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Published literature indicates high incidences of self-medication globally. Awareness programs must be laid out on a large, governmental scales preventing access to drugs other than over the counter medications, requiring prescription[14]. The objective of this study was to determine the prevalence and pattern of self-medication and their associated determinants in patients attending Ophthalmology clinics. The findings of this research are expected for creating awareness regarding misuse of drugs and usage of ophthalmic medications among the general population. Furthermore, the results will be helpful for educating the general community by orienting them for leading and practicing better medical practices and preventing use of unnecessary medications.

MATERIAL AND METHODS

This was a cross sectional analytical research using non-probability consecutive sampling technique was carried out for six months April 2023 to September 2023 at the out-patient department (OPD) of Ophthalmology department of a tertiary care hospital in Karachi, Pakistan. Individuals attending the ophthalmology OPD seeking ophthalmic care that might have used SM prior to consultation with an ophthalmologist was included. The sample size for the study was calculated using open epi online software for sample size calculation;. Keeping prevalence of SM in ophthalmic population at 14.9 % as reported in a research by Tesfay et al., with 95 % confidence level (CI), 5 % margin of error, the sample size came out to be 195. Therefore 195 individuals were included in this research[15].

Patients >18 years of age, visiting the ophthalmology OPD during study time period and providing informed consent for participating in the research were included, while severely ill patients, with cognitive impairment and health care professionals (for avoiding professional biasness) visiting OPD were excluded. A self-structured questionnaire was used for data collection after pilot-testing by 3 ophthalmologist consultant (having >5 years of consultation experience) and 3 layman patients (visiting the OPD). Purpose of pilot testing was to remove and unnecessary or complex

statements that would be confusing to the patients. Their data was not included in the final research.

The questionnaire was interview based and modified slightly after pilot testing for final use according to study objectives. It contained four sections including socio-demographic features (age, gender, residence, marital status, status of chronic disease, family history, status of pregnancy etc. Other sections included, questions regarding awareness of ophthalmic SM, attitude of individuals regarding ophthalmic SM and last section asked about health seeking behavior of patients. SPSS v23.0 was used for data analysis. After testing of normality, mean and standard deviation was reported for continuous variables. For categorical variables, frequency and percentages were reported. Magnitude and association both were analyzed by reporting crude odds ratio (COR) along with 95 % CI. A $p<0.05$ was taken as statistically significant.

RESULTS

From the total of 195 patients included in the study, 67 (34.4 %) of patients were between ages 18 to 39 years, 73 (37.4 %) between 40 to 59 years while 55 (28.2 %) were above 60 years of age. 93 (47.7%) of patients were females while 102 (52.3 %) were males. 60 (30.8 %) of patients had secondary education, followed by higher education by 47 (24.1 %), primary education by 41 (21 %) while 35 (17.9 %) were illiterate. 130 (66.77 %) patients were married while 65 (33.33 %) were single. 160 (82.1 %) of patients were residences of urban area while 35 (17.9 %) were from rural area. From 195 patients 84 (43.08 %) reported to suffer from chronic illness [Table I].

Table I- Socio-demographics of patients included (n=195)

Variable	Category	Frequency (%)
Age groups (years)	18-39	67 (34.40%)
	40-59	73 (37.40%)
	>60	55 (28.20%)
Gender	Female	93 (47.70%)
	Male	102 (52.30%)
Level of Education	None	35 (17.90%)
	Primary	41 (21%)
	Secondary	60 (30.80%)
	Higher Education	47 (24.10%)
	Other	12 (6.20%)
Marital Status	Single	65 (33.33%)
	Married	130 (66.77%)
Place of Residence	Rural	35 (17.90%)
	Urban	160 (82.10%)
Chronic Illness	Yes	84 (43.08%)
	No	111 (56.92%)

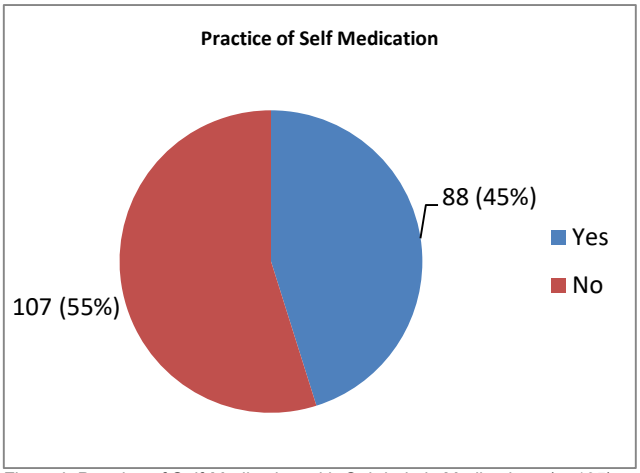

Figure I- Practice of Self-Medication with Ophthalmic Medications (n=195)

From the total of 195 patients included in the study, self-medication (SM) were found in 88 (45 %) of patients as recorded in figure I.

The pattern of SM in ophthalmic patients is reported in Table II. Category of ophthalmic drug, most common symptom leading to use of ophthalmic SM, reason for SM and most common source of SM for ophthalmic drug are reported below.

A significant association was observed between chronic illness, scores of awareness and attitude of patients with SM as reported in Table III.

Table II- Patterns of Self-Medication in Ophthalmic Patients (n=88)

Category	Frequency (%)
Category of Ophthalmic Drug	
Antibiotics	41 (46.60%)
Corticosteroids	22 (25%)
NSAIDs	14 (15.90%)
Lubricating eye drops	11 (12.50%)
Symptoms leading to SM of Ophthalmic Drugs	
Red Eye	32 (36.40%)
Foreign Body Sensation	28 (31.80%)
Eye Watering	20 (22.70%)
Eye Itching	08 (9.10%)
Reasons for SM Practice of Ophthalmic Drugs	
Easy Access to Medicines	40 (45.5%)
Experience with Medication Previously	22 (25%)
Very Mild or Mild Symptoms	17 (19.3%)
Long hospital waiting time	09 (10.20%)
Source of SM of Ophthalmic Drugs	
Pharmacy Professional / Chemist	35 (39.8%)
Personal Opinion	23 (26.1%)
Previous Prescription	13 (14.8%)
Relative/Friends	17 (19.3%)

Table III- Association of various factors with practice of SM (n=88)

Variables	Category	COR (95% CI)	p-value
Age	Continuous	1.01 (0.98–1.03)	0.74
Gender	Male	1.34 (0.69–2.60)	0.36
Residence	Urban	0.81 (0.34–1.92)	0.64
Level of Education	Higher Education	1.09 (0.94–1.28)	0.5
Chronic Illness	Yes	1.21 (0.58–2.54)	***0.031**
Score of Awareness	Continuous	1.17 (0.88–1.56)	***0.028**
Score of Attitude	Continuous	1.29 (1.11–1.49)	***<0.01**

DISCUSSION

The results of the study showed that from 195 patients included in the study, 45.1 % practiced SM. Among patterns of SM use, antibiotics were the most commonly used ophthalmic drug (in 46.6 %) of patients followed by corticosteroids (by 25 %) patients. Most common symptom that led to SM was due to red eye (in 36.4 %) patients, followed by foreign body sensation (in 31.8 %) patients. Easy accessibility to drugs without need for prescription was the main reason for SM (in 45.5 %) patients, followed by previous experience with same medication (in 25 %) patients. Main source of easy availability of SM were pharmacy professionals (39.8 %) while both lack of awareness and attitude towards SM were significant factors associated with SM.

The prevalence of SM among ophthalmic patients was 45.1 % which is in line with the published literature. A study reported the prevalence of SM ranging between 32 to 50 % while another research observed the incidence of SM in-between the ranges of 28 to 40 %[16,17]. Most of the literature has reported that most common drug of SM to be antibiotics followed by corticosteroids which is in line with the findings of our research[18,19].

The most frequently reported symptom for acquiring SM in our study was redness in eye, which is also in accordance with the most common symptom reported for SM to be red eye, followed by irritation and itching in eyes. In line with our study, easy access to drugs was the most common reason for using SM for not only ophthalmic purposes but also in general[20]. Some researchers also

reported history of previous prescription and milder symptoms to be the major cause of SM in ophthalmic cases[21]. Majority of researchers found that the main course of SM were pharmacists, providing drugs without prescription[22]. This is also in line with our study findings.

The high prevalence of SM increases the risk for inappropriate treatments, causing delay in diagnosis, leading to negative prognosis[23]. Anti-microbial resistance is another major factor with SM, coupled with adverse effects of ophthalmic drugs such as steroids, leading to risk of cataract, glaucoma and worsening of infections[24]. The general public along with healthcare professionals such as chemists and pharmacists ought to be made aware of safe medicinal practices using behavioral interventions on grass root level to decrease unsafe drug practices[25].

The adequate sample size of 195 in this study, may aid in improving reliability of this research, along with the chosen study design, structuring of questionnaire and focus on ophthalmic SMs were some of the strengths of this research. However the study was not free from limitations such as cross sectional study design (not being able to establish a causal relationship), possible reporting and recall biasness due to self-reporting of data, single-centered study (limiting generalizability) and limited assessment of type of ophthalmic drugs.

By strengthening the regulations of ophthalmic drug sales, awareness campaigns for the public on using safe eye medicines, educating pharmacy personnel regarding drug dispensing and encouraging ophthalmic consultations in the early phase of any ophthalmic condition would help to enlighten the findings reported in this research.

CONCLUSION

The findings of the present study showed that SM using ophthalmic medicines is a fairly common practice amongst the general public visiting ophthalmology outpatient department, with nearly half of patients reporting usage of SM without previous physician's consultation. Most frequently used SM drugs were antibiotics and corticosteroids eye drops, whilst redness in eyes, sensation of foreign body and itching in eyes were most common causes of SM. Easy accessibility to drugs were primary reason for obtaining ophthalmic drugs for SM. Increase in public awareness should be carried out regarding risks of SM, need for strengthening of regulatory control over ophthalmic drugs should be carried out to ensure safe usage of ophthalmic medications.

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