



HOW OFTEN DO WE ENCOUNTER SELF-MEDICATED PATIENTS IN OPHTHALMOLOGY?

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ABSTRACT **Background:** Due to the countless easily accessible pharmacies, inadequate literacy of the population, lack of legislation for dispatching medications without a physician's prescription, disproportionate doctor-patient ratio, and now the ragging pandemic, the issue of self-medication is on the rise. In the field of ophthalmology, these self-medicated patients not only threaten their vision but are also at risk of developing other ailments due to the drugs used.

Objectives: To study how many patients among the general population are self-medicated, the drugs they have used, the method of procuring the drug, to assess their knowledge on the medications used, and to look for the harmful side effects caused by these drugs.

Method: An observational study was done on 200 patients from February - November 2021. All patients above 18 years were taken. A questionnaire based on the study was handed to the patient to fill. Results and statistical conclusions were drawn from it.

Result: 62 of the 200 patients were self-medicated. 51.61% were males and 48.39% were females. 32.26% belonged to 29 - 42 years. The most common symptoms which were self-treated were redness 35.48%, itching 16.13%, and foreign body sensation 19.35%. 35.48% received the drug from a pharmacy, 19.35% were self-prescribed and 19.35% used leftover medication from previous illnesses. 35.48% used a steroid and antibiotic combination eyedrop, 12.90% used artificial tears and 12.90% had used antibiotic eye ointments. 12.90% were not aware of the drug they had used. None of the patients were aware of the side effects of the drug or had read the leaflet of the drug they used. Five patients had developed complications because of the drug they had abused.

Conclusion: Currently around one-third of the studied population are self-medicated and this trend is on the rise requiring critical history taking.

KEYWORDS : Self-medication, eyedrops, questionnaire-based study

BACKGROUND:

As defined by the World Health Organization (WHO), self-medication means the selection and use of medicines by individuals to treat self-recognized illnesses or symptoms.¹

Self-medication is a form of self-care of our health.² Self-medication is a common phenomenon all over the world in both developed as well as developing countries and mirrors the quality of the country's health care. Even in developed nations, many medications are available for routine use and are sold without a medical prescription in pharmacies, drugstores, and even in supermarkets.³

Currently, eye diseases are considered as one of the major contributors to nonfatal but quality of life disabling conditions in both high and low-economy countries.³ The total global burden of eye diseases was estimated to be 61.4 million DALYs (DALY - Disability Adjusted Life Years).⁴

The reported prevalence of ocular self-medication ranges from 23% to 59% across various nationalities.^{5,6,7,8,9}

With numerous convenient pharmacies, the convention of over-the-counter medication, lax laws on dispatching medications without a prescription, the gullibility of people towards homemade and traditional cures, and easily accessible internet- the issue of self-medication is on the rise.¹⁰ The agonizing worldwide COVID-19 pandemic and its inconvenient lockdown measures have further worsened this convention.¹¹ It is not rare that we come across one or two of these patients every day, who have tried these remedies before presenting at the clinic. They are unaware of the dosage, purpose, frequency of instillation, duration, and harmful side effects of the drugs being used.¹²

Although responsible self-medication may help to reduce the cost of treatment, travelling time as well as doctor's consultation time, in practice we see that this foresight has caused more damage than benefit.¹³ Some of the major concerns related to self-medication are wastage of resources, increased resistance of pathogens, health

hazards such as adverse drug reactions, and prolonged course of the disease and suffering.¹⁴

Hence, the government should take the necessary steps to regulate responsible self-medication. One of the ways how this can be approached is by dispensing only the safe drugs without a prescription along with proper instructions on its use and reaction.¹⁵

This study aims to see how many patients among the general population are self-medicated, the drugs they have used, and to assess their knowledge of the medications they have used. The study also covers the socio-economic details of these patients.

It is useful in understanding the percentage of the population who are self-medicated, to look for their side effects, and to alter our management depending on the drug that has already been used.

Method:

A hospital-based cross-sectional study was done between February 2021 to November 2021. The study comprised of 200 patients who visited the Ophthalmology department, who volunteered and consented to be a part of the study. It is a questionnaire-based, prospective, analytical, and observational study in a tertiary care centre in South India.

Patients above the age of 18 years of both sexes were selected.

Patients on psychiatry medications, mentally challenged patients, disoriented patients, patients uncooperative for detailed ophthalmological examination, and patients who present with a medicolegal history were exempted from the study. Patients who have instilled topical homemade remedies were also exempted from this study.

Written consent was taken before the patient was enrolled for the study. A detailed questionnaire based on the study was handed to the patient to fill. The questionnaire was in English. A translator and orator were used when the patient could not understand English or was illiterate. All participants were explained in detail about the motive of the study,

voluntarism to participate, with no compensations, and were assured that they would receive complete medical aid even if they refused to participate in the survey. The same team of doctors, orators, and translators were present for all the 200 patients.

The questionnaire collected demographic data such as patient's age, gender, literacy status, occupation, income, socio-economic status, and also details concerning the use of the medication like the type of medication used, the reasons for which it was used, their knowledge about the components of the drug or its adverse reactions, whether they had read the leaflet which usually accompanies the drug package, method of procuring the drug and how old the drug was.

The particulars from the questionnaires were studied and entered into a data sheet for statistical analysis and comparative surveys to draw appropriate conclusions.

The types of medication used were classified into different groups. Those patients who do not remember the drug used or had not brought the medication with them were classified separately. Homemade topical medications were not included in the survey, because the patients do not know the components of the remedy used and adequate research on these local products is not available to differentiate between the natural course of the disease they have and a possible adverse reaction to the remedy used. Also, these homemade remedies usually have more than one isolate component in them which makes it difficult to identify the traumatic agent.

As the study population comprised of participants from a rural setup they were stratified based on their socio-economic status as per BG Prasad's latest socio-economic classification.¹⁶

All the patients were subjected to a detailed ophthalmic examination which comprises of visual acuity test (aided, unaided and pin-hole test) with Snellen's Chart, near vision recording, slit-lamp examination, intraocular pressure was measured using Goldmann's Applanation Tonometer, and dilated funduscopy was done using the direct ophthalmoscope, indirect ophthalmoscope and 90D lens along with a slit-lamp.

The data was entered into a spreadsheet and analysed using MS Excel. A p-value of ≤ 0.05 was taken as significant during statistical analysis. Percentages, mean, standard deviation, graphs, and charts were used to study and represent the data.

RESULT:

A total of 200 patients were included in the study of which 62 (31%) patients reported using medications before reporting in the Ophthalmology Department. Of those 62 patients, 32 (51.61%) were males and 30 (48.39%) were females. There is no significant prevalence of self-medication between males and females. (Figure 1)

Going over the age of the studied population, 22.58% belonged to 18 – 28 years, 32.26% (the majority of the population) to 29 – 42 years of age, 29.03% of the population to 43 – 60 years of age, and only 16.13% over 61 years. (Figure 2)

Taking a look at the religious denominations, 74.19% were Hindus, 22.58% were Muslims, 3.23% were Christians and 3.23% belonged to other domains.

Considering the literacy standards six patients (9.68%) were unable to read and write, twelve (19.35%) had a literacy up to primary education, 26 (41.94%) were schooled up to secondary education forming the bulk of the literacy standards in this population, and 14 participants (22.58%) were educated up to a college degree or beyond.

Viewing the occupation of the members fourteen (22.58%) were farmers, twelve (19.35%) welders, 26 (41.94%) homemakers, four (6.45%) daily wage labourers, four (6.45%) tailors, and two students (3.23%). (Figure 3)

The entire study population belonged to the rural area as the hospital where the survey was undertaken is in a rural area. Accordingly, the population was allocated into socioeconomic strata based on Modified BG Prasad's latest classification. The classification has five groups and takes into account the per capita income of a family wherein group I has the highest and group V has the lowest per capita income. Group I having a per capita income of ≥ 7533 INR included 9.68% of the

population, Group II with a per capita income of 3766 – 7532 INR enclosed 29.03%, Group III covering a per capita income of 2260 – 3765 INR contained the majority of the population 32.26%, Group IV has a per capita income of 1130 – 2259 INR comprised 29.03%, and lastly, no patient belonged to Group V with ≤ 1129 INR.

The symptoms for which self-medication was sorted were redness 35.48%, blurring of vision 3.23%, itching 16.13%, foreign body sensation 19.35%, eye pain 12.90%, and 16% had other symptoms like watering or discharge from the eye, eye swelling, and burning sensation in the eye. (Figure 4)

When questioned about the method of procuring the drug the following results were revealed – the largest proportion of 35.48% reported to have received the drug from a pharmacy upon consultation with the pharmacist, 19.35% were self-prescribed medications from previous ocular pathologies, 19.35% had used leftover medication which was lying around at their homes, 06.45% took medications after an internet search, and 19.35% had borrowed leftover medications from relatives, friends, and neighbors. (Figure 5)

None of the patients were aware of the components of the drug, their adverse effects, the correct use of it, or had read the pamphlet that comes along with the eyedrops.

Surveying the composition of the drugs which were used by these individuals – 6.45% of them had used non-steroid anti-inflammatory eyedrops, 35.48% used steroid and antibiotic combination eyedrops, 12.90% used artificial tears, 9.68% used steroid and antibiotic combination eye ointments, 12.90% used antibiotic eye ointments (colloquially called by the localities as eye tube), 6.45% had used antibiotic eyedrops, and 3.23% had used other drugs like antihistamine and mast cell stabilizer eyedrops, A good magnitude of 12.90% was neither aware nor carried the instilled eyedrop with them when they had come for consultation. They were unable to produce a photograph of the drug or an old prescription. (Figure 6)

50 patients (80.65%) of the 62 were using expired eyedrops. 32.26% had used the eyedrops only one time before our consultation, 38.71% had used it twice and 29.03% had instilled it three or more times. 22.58% of the population had used the drug for a day and then consulted the physician, 64.52% had waited for 2 - 5 days before seeking aid and only 12.90% waited six or more days to take a consultation.

On examination the following were the final diagnosis – Corneal foreign body 19.35%, refractive error 6.45%, allergic conjunctivitis 19.35%, anterior uveitis 6.45%, bacterial conjunctivitis 17.74%, episcleritis 3.23%, internal hordeolum 9.68%, external hordeolum 3.23%, meibomitis 6.45%, fungal corneal ulcer 1.61% and chronic dacryocystitis 6.45%.

90.32% of the individuals required a change in the drug.

Five patients (8.06%) had developed a complication due to the drug they had used. The complications included two patients having posterior subcapsular cataract, two having internal hordeolum, and one patient developing a fungal corneal ulcer. (Figure 6)

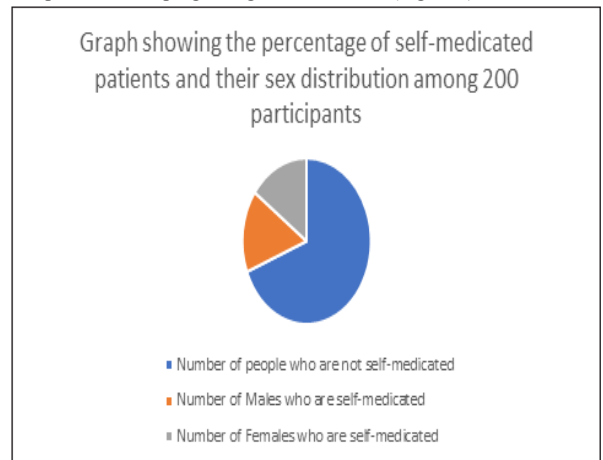


Figure 1

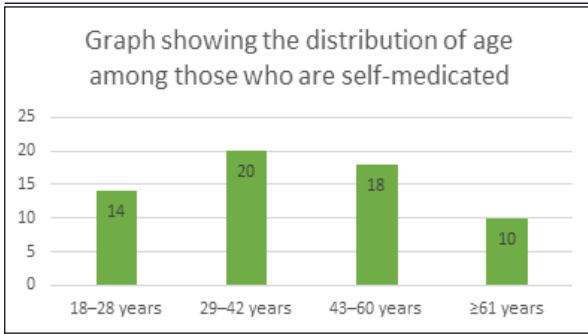


Figure 2

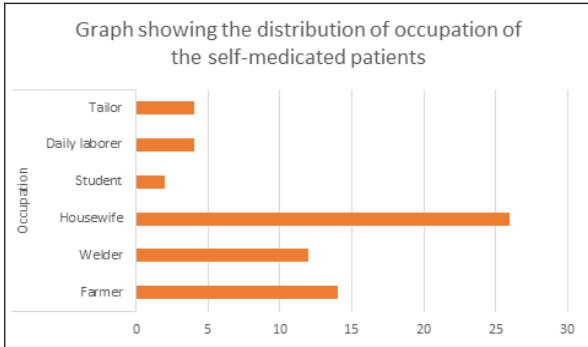


Figure 3

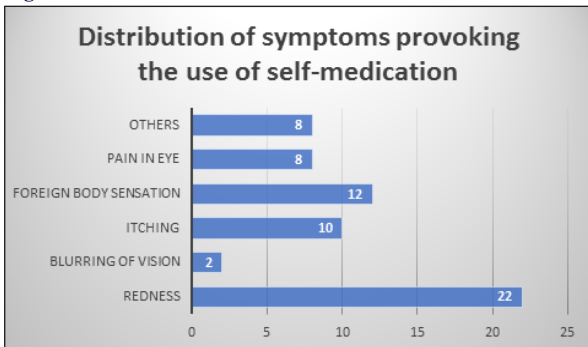


Figure 4

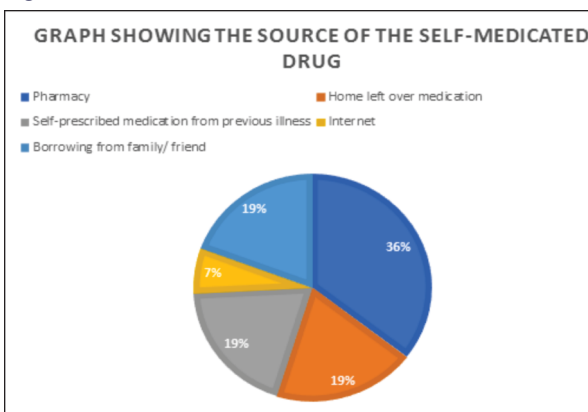


Figure 5

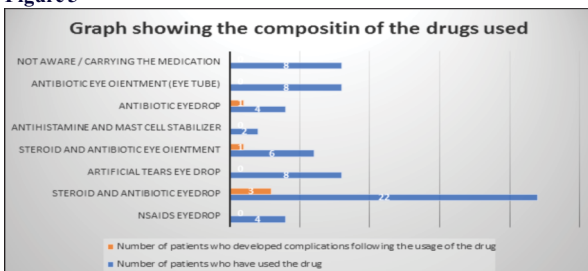
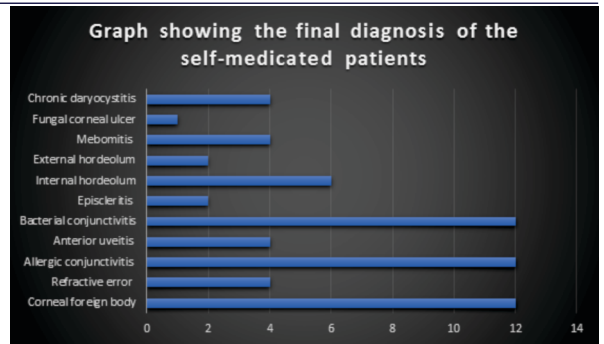


Figure 6



DISCUSSION:

Numerous studies done show varying proportions of self-medicated patients ranging from 23 to 59%.^{5,6,7,8,9} Our survey showed 31% of the patients are self-medicated which is around one-third of the total population. This proportion is quite high warranting an artful history taking and effective screening. A study by N. Gupta et al showed 18.2%¹⁷ and another study by Gupta Rohini showed 41.2% were self-medicated.¹²

This study does not have a significant difference between the proportions of males and females who were self-medicated which stands at 51.61% and 48.39% respectively. However, a study by Marquez et al showed 43% were males and 57% were males showing a significant difference.⁸

The entire study population belonged to the rural area as the hospital where the survey was undertaken is in a rural area. It includes maximum patients within 29 – 42 years of age (29.03%) and a drastic drop in the number over the age of 61 years (16.13%). This is probably because the age groups 29-42 years are the working members of the family and are unable to visit a doctor due to their busy schedules. Therefore, they tend to self-medicate and wait for their symptoms affect their day-to-day work before presenting. The older population tend to have more fear of developing cataract (there is raised awareness of cataract in this population due to multiple local campaigns) and report to a physician at the earliest. A study by N. Gupta et al showed 61.1% belonged to age 50 years and older which showed a slightly elderly self-medicated population compared to our study.¹⁷

74.19% of the studied population were Hindus. These ratios are consistent with all other studies as Hinduism is the chief religion of India A study by N. Gupta et al. is in agreement with ours.¹⁷

The population surveyed shows the literacy standards of the patients ranging from six patients (9.68%) who were unable to read and write and twenty-six patients (41.94%) were schooled up to secondary education. The self-medication pattern seems to be more in the schooled population than the illiterate. A study by Sutradhar et al showed that the patients no formal education (43.5%) were more self-medicated which is a higher value than this study.¹⁸

Viewing the occupation of the group, males were mostly welder (19.35%) and farmers (22.58%) and women were by majority homemakers and few were tailors. Men tend to self-medicate on accord of having a busy work schedule and cannot take a leave of absence to visit an Ophthalmologist. Homemakers claim that they do not have anyone to accompany them to the hospital or that they are busy with their children and household chores. Both sexes were reluctant to spend on the travel expenditure to visit the hospital.

Redness (35.48%) was the commonest symptom for which self-medication was sorted. This was probably because of the media-publicized presentation of the Coronavirus i.e., redness of the eye. The fear of COVID-19 has these patients running fearfully to the pharmacy or using any medication to treat the redness at the earliest. A study by Gupta Rohini et al whose values are in agreement with this study showed redness in 31.1% was the most common complaint followed by itching in eyes in 22.1% for which the patient's opted self-medication.¹²

35.48% reported having received the drug from a pharmacy upon consultation with the pharmacist. The locality proves fewer hospitals and plenty of pharmacies with no law binding these firms against dispense of these medications without a valid prescription making the pharmacy the most common modality of procuring the drugs. Firmer

legislation enforced in this area can trap this problem. 19.35% used left over medications from previous ocular pathologies. A common misconception these patients have is that an eyedrop which was used to treat a previous disease will help relieve the current illness as well. Most of the patients were not even aware that the eyedrops came with a pamphlet in the packaging. Self-education, campaigns, and community awareness programs will help tackle these hurdles. The study by Marquez et al showed similar values 31% of patients used drugs recommended by a pharmacist; 25% used drugs of their choosing and 24% followed suggestions from a friend or family member. Only 12% of patients knew the drug's components and only 3% were aware of any possible side effects which is inconsistent with our study.⁸

Most of the patients (35.48%) were using a steroid and antibiotic combination eyedrops and was the most common drug dispensed by the pharmacy without a prescription. The steroid component has proven to be harmful to the eye on prolonged usage- exacerbating infections, precipitating opportunistic infection in the eye, rising the intraocular pressure, and precipitating and progressing cataract. 80.65% were using expired eyedrops when they had come to us for the consultation. The study by Gupta Rohini et al shows antibiotics constituted the highest group of medications used in 39.7% followed by steroids in 23.2%. This is different our study which shows an antibiotic and steroid combination eyedrops is the commonest used drug.¹²

On reflecting over the final diagnosis of the patients it was noted that corneal foreign body the most common diagnoses. This was attributed to the high number of welders residing in this locality. This was followed by allergic and bacterial conjunctivitis. Allergic conjunctivitis patients were noted to be the ones who abused previously used medications as their disease tends to be recurrent. 90.32% required a change in the drug they were already instilling after the final diagnosis. A study by Carvalho et al showed viral conjunctivitis was the most frequent diagnosis (24.4%), followed by the presence of a corneal foreign body (7.4%).³

Five patients (8.06%) from the studied population had developed an adverse reaction to the drug they had used. Four of the five patients had used steroid eyedrops continuously, in a non-tapering fashion with no definite frequency of instilling it for a few months. Two of them had developed Posterior Subcapsular Cataract and two had recurrent internal hordeolum. The posterior subcapsular patients were given spectacle prescriptions and were counselled about cataract surgery proposed on a later date. The internal hordeolum was treated with topical antibiotics and warm compressions. One patient had abused antibiotic eyedrops for a prolonged period. Being a predisposed individual (uncontrolled diabetes mellitus), he developed a fungal corneal ulcer as a consequence. He required extensive treatment with topical and systemic antifungal and antibiotics with frequent ulcer debridement. Three of the five patients mentioned above had received an over-the-counter drug and two had used leftover medications from previous illnesses.

CONCLUSION:

Around a third of the population have been reported to have used self-medication before presenting to a medical professional. Hence, this history must always be elicited during routine history taking to effectively treat the patient and to choose the appropriate drug for the same. Almost all the conditions required accurate diagnosis and change in medications. There is therefore a need to educate the population on the same.

REFERENCES:

1. WHO Guidelines for the Regulatory Assessment of Medicinal Products for Use in Self-Medication [Internet]. Geneva: WHO; 2000. Available from: <http://apps.who.int/medicinedocs/pdf/s2218e/s2218e.pdf>
2. Vizhi SK, Senapathi R. Evaluation of the perception, attitude and practice of self-medication among business students in 3 select Cities, South India. *International Journal of Enterprise and Innovation Management Studies (IJEIMS)* July-December. 2010;1(3): 40-4. [Google Scholar]
3. Carvalho RS, Kara-José N, Temporini ER, Kara-Junior N, Noma-Campos R. Self-medication: initial treatments used by patients seen in an ophthalmologic emergency room. *Clinics (Sao Paulo)*. 2009;64(8):735-41. doi: 10.1590/S1807-59322009000800005.
4. Boyers LN, Karimkhani C, Hilton J, Richheimer W, Dellavalle RP. Global burden of eye and vision disease as reflected in the Cochrane Database of Systematic Reviews. *JAMA Ophthalmol*. 2015 Jan;133(1):25-31. doi: 10.1001/jamaophthalmol.2014.3527. PMID: 25232930.
5. Kyei S, Ocansey S, Abu EK, Gyedu BN. Appraisal of the practice of ocular self-medication in Cape Coast Metropolis, Ghana. *Optometry Reports* 2014; 4:2164.
6. Kadri R, Hegde S, Kudva AA, Achar A, Shenoy SP. Self medication with over the counter ophthalmic preparations: is it safe? *Int J Biol Med Res* 2011; 2:528-350.
7. Souza Carvalho R, Kara-José N, Noma-Campos R. Self medication: initial treatments

- used by patients seen in an ophthalmologic emergency room. *Clinics* 2009;64:735-741.
8. Marquez GE, Torres VE, Sanchez VM, Gramajo AL, Zelaya N et al. Self-medication in ophthalmology: a questionnaire-based study in an Argentinean population. *Ophthalmic Epidemiol* 2012; 19: 236-241.
9. Kagashe GAB, Msela B. Self-medication among patients seen at Ophthalmology Clinics at four hospitals in Dar Es Salaam Tanzania. *Journal of Pharmacy* 2012;2: 21-25.
10. Marquez GE, Piñeros-Heilbron H, Sanchez VM, Torres VE, Gramajo AL, et al. (2014) Eyedrop Self-medication: Comparative Questionnaire-based Study of Two Latin American Cities. *J Clin Exp Ophthalmol* 5: 330. doi: 10.4172/2155-9570.1000330
11. Malik M, Tahir MJ, Jabbar R, Ahmed A, Hussain R. Self-medication during Covid-19 pandemic: challenges and opportunities [published online ahead of print, 2020 Oct 3]. *Drugs Ther Perspect*. 2020;1-3. doi: 10.1007/s40267-020-00785-z
12. Gupta R, Malhotra P. Self medication in ophthalmology - a northern Indian tertiary hospital experience. *Int J Basic Clin Pharmacol* 2016;5:2556-60.
13. Porteous T, Bond C, Hannaford P, Sinclair H. How and why are non-prescription analgesics used in Scotland? *Fam Pract*. 2005;22:78-85.
14. Pagán JA, Ross S, Yau J, Polsky D. Self-medication and health insurance coverage in Mexico. *Health Policy*. 2006; 75:170-7. [PubMed] [Google Scholar]
15. World Health Organization: Report of the WHO Expert Committee on National Drug Policies. 1995. [Last accessed on 8-9-2010]. Available from: <http://www.who.int/medicines/library/dap/who-dap-95-9/who-dap-95-9.shtml>
16. Debnath DJ, Kakkar R. Modified BG Prasad Socio-economic Classification, Updated – 2020. *Indian J Comm Health*. 2020;32(1):124-125.
17. Gupta N, Vashist P, Tandon R, Gupta SK, Kalaivani M, Dwivedi SN. Use of traditional eye medicine and self-medication in rural India: A population-based study. *PLoS One*. 2017;12(8):e0183461. Published 2017 Aug 22. doi: 10.1371/journal.pone.0183461
18. Sutradhar, I., Gayen, P., Hasan, M. et al. Eye diseases: the neglected health condition among urban slum population of Dhaka, Bangladesh. *BMC Ophthalmol* 19, 38 (2019). <https://doi.org/10.1186/s12886-019-1043-z>