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RESEARCH ARTICLE

SELF PRESCRIPTION OF TOPICAL EYE MEDICATIONS AMONG NEW PATIENTS ATTENDING ADULT EYE CLINIC AT MUHIMBILI NATIONAL HOSPITAL

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ABSTRACT

Introduction: Self-medication can be harmful to patients, as safety of drug,dosageand duration may not reflect the proper diagnosis. Drugs need special instruction in usage and storage, which is likely to be missed in self-medication practices. In the course of self-medication patients are likely to delay in seeking medical attention as they will go to hospital only when the condition had worsens. ***Objective****:* To assess the practices self-prescription of topical eye medication among new patient attending the adult eye clinic at Muhimbili National Hospital. ***Methodology****:* This was a hospital based cross sectional study which employed both quantitative and qualitative methods. New patients attending the adult eye clinic at MNH from July 2022 to January 2023 were recruited in the study. Systematic random sampling technique and purposive sampling was done; questionnaire and interviews were used to obtain information. ***Results:*** A total of 377patients were recruited for quantitative data collection, of whom52.8% were male and 47.2% were female. Twelve patients were recruited for focus group discussion. These were6males and 6 females. Two female health workers (one ophthalmologist and ophthalmic nurse) were recruited for in-depth interviews. The magnitude of self-prescription of topical eye(s) medications was 168(44.6%). The eye pain (60.1%), eye itching (42.9%) and red eyes (39.3%) were the common ocular symptoms led to self-prescription of topical eye medications. Long distant from the health facilities (60.7%), advice from a friend/relative (57.8%) and using previous remained prescription (26.8%) were reasons given by thestudy subjects as the factors which lead them to practice self-prescription. Majority of the patients obtained their medicines from pharmacy/shops (58.9%).Reported reasons for self-medication included saving costs, lack of awareness, long distances to health facilities and saving time was mentioned in qualitative study. ***Conclusion****:* Self-medication of topical eye medicines is a commonpractice among patients with ocular problems in the study participants. Pain was most common eye symptom related to self-prescription. Reasons for self-medication with topical eye medications were long distances to health facilities with eye services, costs, lack of awareness and long waiting time for services were the reasons mentioned for self-eye medications.

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INTRODUCTION

Self-medication can be defined as the use of drugs to treat self-diagnosed disorders or symptoms or the intermittent or continued use of prescribed drug for chronic or recurrent disease or symptoms(1,2). Self-medication has also been defined as obtaining and consuming medication without professional supervision, which comprise acquiring medicine without a prescription, purchasing drugs by resubmitting or reutilization an old prescription, taking medicines on advice of relatives or others, or consuming leftover medicines already available at home. It is noted that a person pursuing self-medication drugs or other approaches to cope with illness conditions "which has the same meaning as a treatment of oneself without professional help, to alleviate an illness or a conditions"(3)(4).Apart from being a common phenomenon all over the world which account up to 92%. (5–7). The practice of self-treatment is a vital part of local medical traditions of African people, whereby people are used to take treatment into their own hands on regular basis. In various situations, familiar eye illnesses are dealt with by common people (with no medical background) on their own. It is only when the illness shift towards worsening/severe form then people seek expert advice (8). Several personal factors could influence self-medication, including sex, income, self-medication orientation, and medication knowledge. Self-care oriented people are those who undertake activities without professional assistance to promote their own health. The inadequacies of health care system with its misdistribution of drugs, rising cost and the issue of curative stance of drugs are also worth mentioning (9).

It has been noted that many non-prescribed medications and local herbal eye medications are sold over the counter/pharmacy/shops in developing countries due to laxity of existing regulations on the dispensing (12) . A major shortfall of self-eye medication is the lack of clinical assessment of the health situation by a medical eye professional, which resulting in misdiagnosis and delay in appropriate treatment. Indiscriminate practice of self-eye medication results in wastage of resources, increases resistance of pathogens, and generally entails serious health hazards such as adverse reaction and prolonged suffering even blindness may happen (13,14). The drug resistance may arise as a result of sub-dosage, treatment of none existing or misdiagnosed disease. Many symptoms and signs are similar for different diseases hence making it difficult, without health professional diagnosis or expert clinical examination, to come up with the exact diagnosis. Therefore, people end up using wrong drugs for different eye diseases. It is important for patients to be evaluated for eye diseases before administering any treatment to prevent occurrence of drug resistance. Therefore drugs should be taken only with prescription of health care provider (6). While first aid measures are being widely advocated for cuts, foreign particles, chemical splashes and physical trauma to the eye, the techniques of administrations should be well specified to lessen the risk of permanent damage caused by eye injuries. Pharmacists, trained primary eye care provider and general medical practitioners have key roles to play in providing patients with assistance, advice and information about medicines available (15).

In Tanzania, the problem of topical eye self-medication has been widely practiced but not much has been reported neither been documented nor quantified. Against this background, the factors pushing people to self-medication have not been investigated or not well understood. Therefore, the aim of this study was to assess the magnitude of topical eye self-medication and risk factors influencing this self-medication practice in patients attending general eye clinic at Muhimbili National Hospital.

MATERIALS AND METHODS

Study design: The study was a Hospital based Cross-sectional Descriptive study which employed both quantitative and qualitative method.

Study duration: This study was conducted from June 2022 to January 2023.

Study Area Description: The study was conducted at MNH adult eye clinic. This is a tertiary hospital located in Dar es Salaam; it serves as a referral hospital receiving patients from district and regional hospitals in the country. It is a teaching hospital for Muhimbili University of Health and Allied Sciences (MUHAS). It is also involved in carrying out researches in these health fields with a view of improving management of patients.

The adult eye clinic at MNH is a clinic for adult patients with different eye conditions/diseases. It is held from Monday to Friday with a minimum of 10 new patients being attended per day.

Study population: Target population: Adult patients attending eye clinic

Study population: were all new Patients attending adult eye clinic at MNH

Inclusion criteria: All new adult attending eye clinic during the period of study from June 2022 to February 2023.

Exclusion criteria: Patients with mental illness and Patients who were using other drugs apart from those applied directly to the eye.

Sample size: Total of 377 patients were recruited for quantitative and For qualitative study, two focus group discussions consist of 6 females and 6 males in each group and 2 in depth health provider interview.

Sampling technique: All new patients attending general eye clinic during study period meeting inclusion criteria were identified and requested to participate. Identified patients were chosen by using Systematic probability by numbering them and only even numbers were taken for the quantitative study. Purposive sampling was used to obtain focus group discussion and in depth interview for the qualitative study**.**

Data collection procedure: A Standard structured Swahili translated questionnaire was used for quantitative study. This questionnaire was pre-tested in new patients attending adult eye clinic at Muhimbili National Hospital to ensure its validity and reliability. The questionnaire was used to collect socio-demographic data; data on practices and factors influencing self-medication(25).For qualitative study, participants were selected by purposive sampling, the agreed participant signed consent and scheduled for the interview. The interview lasted between 45-60minutes and open-ended structured questions were used. Both FDGs and IDs were allowed to discuss their opinions, views and experiences in details. Audio tapes using smart phone in the focus group discussion and in-depth interview were used and each participant was coded with a number. One nurse was used as a research assistant for the quantitative study where she was trained to obtain baseline information from the patient by interview.

Data analysis: Raw data was captured on the questionnaire and recorded in Epidata Version 3.1 software. The dataset was exported in SPSS Version 20 for data cleaning and analysis. Descriptive statistics such as mean, median, minimum and maximum were calculated for continuous variables and percentages for categorical variables. The association between the use of ocular self-medication and other variables were established using P-value and Chi-square test. Univariate analysis for demographic characteristics was done for all respondents describing simple frequencies, and medians. Both univariate and multivariate odds of self-medication were studied using logistic regression analysis to determine predictors of self-medication practice among respondents. All data analysis was performed using SPSS version 20. *A P-value was* derived from Chi-square ($\chi 2$) tests and *P* value of < 0.05 was considered as evidence of a significant difference. Graphics and charts were drawn using Microsoft Excel. Transcripts were read and emerged issues were put into group to develop themes. The identified content of the text was

entered into memos which were eventually manually organized into patterns and themes.

Ethical considerations: This study was conducted after ethical clearance and permission from ethical committee of MUHAS. Individual consent was sought and confidentiality was guaranteed to all participants. No participant name were filled on the forms rather code numbers. The permission to conduct the study at MNH ophthalmology department was sought from the Director of research.

RESULTS

QUANTITATIVE RESULTS

Table 1. Socio-demographic characteristics of the study participants (N=377)

Characteristics	Male, n(%)	Female, n(%)	Total, n(%)
Age group			
18-33	67(33.7)	55(27.6)	122(32.4)
34-49	46(25.8)	60(30.2)	106(28.1)
50+	65(36.5)	84(42.2)	149(39.5)
Locality			
Dar es Salaam	59(33.1)	82(41.2)	141(37.4)
Others	119(66.9)	117(58.8)	236(62.6)
Marital status			
Single	46(25.8)	22(11.1)	68(18.0)
Married	96(53.9)	133(68.8)	229(60.7)
Widowed	29(16.3)	33(16.6)	62(16.4)
Divorced	3(1.7)	7(3.5)	10(2.7)
Cohabiting	4(2.2)	4(2.0)	8(2.1)
Education level			
None	14(7.9)	14(7.0)	28(7.4)
Primary	48(27.0)	48(24.1)	96(25.5)
Secondary	61(34.3)	87(43.7)	148(39.3)
Tertiary	55(30.9)	50(25.1)	105(27.9)
Occupation			
None	14(7.9)	14(7.0)	28(7.4)
Employed	41(23.0)	59(29.6)	100(26.5)
Business	53(29.8)	54(27.1)	107(28.4)
Peasant	37(20.8)	28(14.1)	65(17.2)
Housewife	2(1.1)	29(14.6)	31(8.2)
Student/pupil	19(10.7)	5(2.5)	24(6.4)
Retired	12(6.7)	10(5.0)	22(5.8)

A total of 377 new patients attended the adult eye clinic were involved in the study whreby199 (52.8%) were females. Most of the participants (39.5%) were aged 50+ years and (39.3%) had secondary level education. (Table 1).

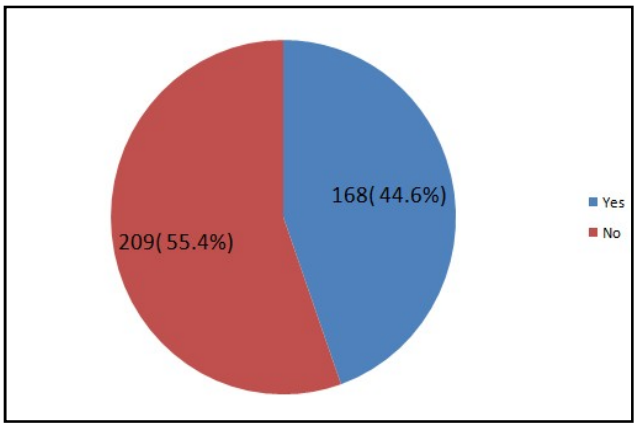

Figure 1. Magnitude of self-prescription of topical eyes medication (N=377)

Table 2. Reasons for self-medication reported by the study population

Reason	Number	Percentage%
Reasons for self-medications		
Long distance to the health facility	102	60.7
Not trusting/satisfied with health services providers	33	19.8
Shortage of eyes services in the Health Facilities	101	60.1
Too much time spent at Health Facilities	71	42.3
No health insurance	51	30.4
High cost of eye drops drugs in the Health Facilities	57	33.9
Similar illness or symptoms as previous	44	26.2
Advice from a friend/Relative	99	57.8
Advice from traditional healers	28	16.7

Table 3. Common ocular symptoms leading to and outcome of treatment by self-prescription of topical eye medication, (n=168)

Ocular symptom	Number	Percentage
Eye pain	101	60.1
Discharge from the eyes	54	32.1
Trauma to the eye(s)	24	14.3
Excessive tearing	51	30.4
Eye(s) itching	72	42.9
Red eye(s)	66	39.3
Poor vision	40	23.8
Eye swelling	16	9.5
Treatment outcomes		
Got relief	38	22.5
Worsened	25	14.6
Remain the same	105	62.2

The proportion of patients who reported that they practice self-prescription of topical eye medication were 168 (44.6%) (Figure 4). Long distance from the health facilities (60.7%) was the common factor for self-medication (Table 2).

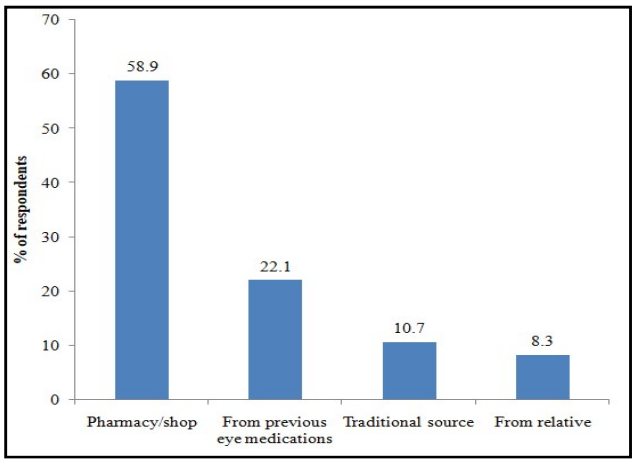

Figure 2. Sources of eye topical medication for self-prescription (n=168)

Eye pain was the commonest (60.1%) symptom reported. Majority (62.5%) of those who practiced self medication didn't get relief (Table 3). Of those who practiced self-medication, 58.9%reported pharmacy/shops as their source of medication. (Figure 5). The common forms of medicine used were eye drops (60.7%) (Figure 6).

RESULTS OF THE QUALITATIVEPART OF THE STUDY

Characteristic of participants: The participants comprised of three groups namely, two health care providers,6 female

patients and 6 male patients. Health care provider includes one ophthalmologist and one Nurse Officer who were both from Muhimbili National Hospital.

Major themes that emerged: The analysis of FGDs and in-depth interviews revealed much information about self prescription of eye topical medications. Three major themes that emerged from this FDGs were the practices of self-medication, reason/factors for using self-prescription, ocular symptoms leading for self-prescription, and the place where they obtained the medicine.

Using/practices of self- prescription medication/and place where to get medicine: Participants were asked to provide their opinion on where they go when they feel unwell; generally, most people do their own first aid before they take a step further. However, the first aid taken would depend on the type of disease. Most of them said that in a normal situation people would take some pain killers like Panadol and so forth some would use prescription from the previous condition to treat the present condition as one of the female participants said.

"most of the time they refer to the previous ocular condition that in the past same thing happened so he/she directly take the medicine used in the past" (FGD, female eye patient).

However, two participants reported that when they feel unwell, they would go to the heath facility to seek professional advice. As far as eye conditions are concerned similar opinion was reported; majority reported to do self-medication while other reported that they would go to the health facility as illustrated by the following quote.

"in short, he/she needs a first aid, for example an insect has entered your eye, put fresh milk, if there is a woman who is breastfeeding we know in our traditions she just put a drop" (*FGD, male, eye patient). "First of all he/she should go to the nearby health facility to get medical advice"(FGD, male eye patient.)*

Both male and female participants reported almost the same opinions. The common place mentioned where people would go before they seek medical opinion was the nearby "pharmacies." This was the frequently mentioned place people would go for their first aid. The other places were the neighbor who would have experience of that particular condition and the relative who had similar condition. However, they reported that Presence of laboratories have accelerated the pace of people seeking self-medication, because they trust those people they do not even go for further test.

Reasons for self-prescription for topical eye medications: When asked about the reasons for self-prescription, mentioned was that, it *savestime and cost***,** instead of going to hospital and a situation that will require you to close your business for the whole day.

"it serves time and cost, instead of going to the hospital and queues, they just go to the near pharmacy and buy medicine" (FGD, female patients).

This was confirmed by the health providers that, clients use self-medication to avoid the cost they would incur at the hospital. They calculate the consultation fee and see that it is better to buy the medicine instead of going to the hospital, pay consultation fee and then you are given the prescription and asked to buy the medicine, so to cut it short they go to nearby shops/pharmacy.

"Patients use self-medication, because of the cost, first they see that, when they come here at the hospital, there is a consultation fee, then, they are being prescribed, so the short cut is to just go to the pharmacy, it cut the costs" (IDI, Health provider)

"the other thing is money, economic situation, somebody would think of all the hassles at the hospital the queues, and then the cost at the hospital"(IDI, Health provider 2)

The other reason that was mentioned by participants, was "*distance from the health facility",* this contribute to the greater extent for self-medication, they revealed that, in villages, you do not have access even to those normal hospital, the dispensary is far, the only option is to go to those shops, therefore they do advise that eye health workers should be available even in lower level facilities.

"*If the health facility is available and reachable people would take their children to the hospital but if it is far, for example in the villages, it is far, you think of the fare to the hospital, it is hard, so the eye careservices should be available even at the village level" (FGD, Female patents)*

it was also confirmed by one participant from male group, who also reported on his personal experience of traditional self-medication.

"I just want to contribute on that, I have lived in village most of my life time, it is just recent when I left the village, I was not using medicine from the hospital, and life went well, you might be told, use this and this and you will be okay" (FGD, male patient).

The other reason regarding the self-medication, was mentioned by health providers, it was "**ignorance**" most of the patient who do the self -medication are ignorant, they do not know what they are doing is not right; one of the health provider said that.

"I met them, when they provide their history, you see that this person is so naïve, this is what he/she knows, they would tell you , I did this and this, so I decided to give this to my child, and when they are talking you see that they are so naïve"(IDI, Health providers)

Generally, from the above-mentioned reasons, interesting is that, some reasons were only mentioned by female participants for example the issue of time and cost, came only from females and was confirmed by the health care providers and was not mentioned by their male counterpart.

Ocular symptoms/Conditions that make people practice self-medication: The common condition that was mentioned in this regard was, when the eyes are red and the discharge from eyes "tongotongo" itching/ pain and the swelling eye.

"for example, when the eye are itching, or discharges, these kind of condition does not prohibit someone from seeing,

people go to the hospital when the condition is worse" (FGD, male patient).

This was also confirmed by the health providers who reported on the common symptoms that lead to self-medication.

"Symptoms are almost the same, you find that when they see their eyes becomes red, discharges, swellingeyes they opt to use self medications (IDI, Health provider).

DISCUSSION

The practices of self prescription of topical eye medications have been reported to be common in different places in the world with magnitude ranging 23.6%-92 %. This current study has shown magnitude of 44.6%which is within the range revealed in the previous studies. However the findings seem to be lower than what was reported in Sudan (81 %), Nigeria (73.6%), Kuwait (92%) and India (73%)(16,19,26). This difference can be explained probably by the difference in study designs, cultural set up, geographical location and availability of eye services in local health facilities. On the other hand, this rate is fairly high when compared to the study which was published by Carvalho *et al* in Argentina , who reported magnitude of self prescription of topical eye medication of 40.5%(18).The rate of self prescription in this study is fairly high to raise a concerned and reflect the results of FGDs where by the participant reported that long distance from the health facilities, long waiting time of services and financial problems stirred self prescription. This is the true picture of the situation in developing countries where there is severe shortage of both health workers and health facilities. This study found that there were more males reporting self-treatment/medication than females. This finding is in consistence with the studies done in Uganda and Malawi where higher self prescription rates were in men than females (8,13).This can be explained by the fact that men and women have unequal access to financial resources, men being the one who decide for the allocation and the uses of family money. More over since women attend antenatal clinic during child bearing, it is possible they get a lot of health education including side effects of self-prescription.

Previous study done in Ghana reported that the rate of self -prescription with topical eye medication decreased with increasing age. (3)This finding is contrary to the current study which reported more self -medication in people aged 50+years. This can be explain by the fact that the age groups between the two studies were different, in Ghana the study participants were between 18 and 34 years, while in this study all adult patients were recruited without age limit. Regarding occupation, the study found out that retirees, students and peasants patients were more likely to practice self-prescription of to picaleye medications as was shown in the multivariate analysis. Similar trend was reported in Nigeria(27) in which low income was linked to increased magnitude of self-prescription of topical eye medication. Additionally, self-prescription in these groups is probably associated with cultural influences as reported in a study in Malawi (28).

This study has reported different factors related to self-prescription of topical eye medication which include long distant from the health facilities, shortage of eye services in the health facilities, long waiting time at the hospital, high cost of the eye medication, lack of money and advice from family members. This finding was collaborated by result of the qualitative part where both FGDs and IDs mentioned the same factors. This signifies the problem in primary eye health care in developing countries that reflect weakness in the overall health system: inadequate of health facilities, few trained health personnel and lack of community outreach, which contribute to self-prescription of topical eye medication. This is in agreement with the study done in Malawi, Ghana and India which reported almost the same reasons for the self-prescription(9,17,29). There was no difference in self-medication practices among different classes of education as opposed to the Nigerian study which revealed more self-prescription practices among people who had low education status (19).It is not very clear for this contradicting finding but there is like hood that differences in social and economic status between Nigeria and Tanzania. Eye pain was the most common symptom which necessitated self-medication practices among studied patients. Pain can be a presentation of many diseases like corneal ulcer, closed angle glaucoma, uveitis, and trauma to mention few. Pain is a symptom which cannot be tolerated at any point given the threshold is enough to compromise normal life. Therefore it is obviously that pain will remain the main symptom which calls for seeking for eye care. This finding agreed with other studies which reported pain as the most reported symptom for eye self-medication(10,14.) However, studies in Latin America, Sudan, and Ghana reported eye redness and eye itching as the main symptoms for eye self-medication(3,10,13). In FDGs ocular symptoms which were mentioned were eye discharge, eye itching, eyes pain, eye swelling and poor vision. The same lists of symptoms were echoed by the eye health workers during in depth interview. It was found that most of respondents (58.9%) obtained their medicines from the pharmacies. This might be due to the fact that patients prefer pharmacies as sources of medicines because they are easily accessible, no consultation fee, not time consuming and almost every pharmacy/shops sells medicines without a prescription. This is likely to encourage patients to obtain the medicine in many areas of Tanzania. This was similar to other previous study that reported community/private pharmacies as the main source of medicines used for self-medication (13, 21).A study done in Argentina revealed that, 31% patients got their medicine from pharmacy which is slight lower compared to this study (15). The difference may be due to health facility distribution and the regulation on the pharmacies/shops drug dispensing which differ from our country. Moreover this was different with study done in Malawi were by majority (73%) used herbal medicine from traditional healers. This difference may be due to that study in Malawi was community based in villages which we expect more traditional healers and few health facilities, compared to our study which was done in hospital and located in city (3).In FGDs participant also reported pharmacies were the main places where medicines were obtained, but also from relatives or friends, tradition and those left over drugs from previous treatment. Traditional eye medicines used for self-prescription included milk from a breast feeding mother, tomatoes juice, milk juice of a plant called "Mnyaa" and the seed, people use when they play "bao". Modern medicines obtained from pharmacy were eye drops.

CONCLUSION

Self-medication with topical eye medicines was common in patients attending the eye clinics at Muhimbili National Hospital. Pain was the most reported eye symptom, long

distance, lack of eye services in health facilities, costs, ignorance, advice from relatives / friends and long waiting time for services were the reasons mentioned for self eye medications. Pharmacies were the major source of medicines for self-medication.

RECOMMENDATIONS

- Education should be given to patients on dangers of using eye medicines without professional advice /prescription.
- Eye health services should be incorporated at the primary health facilities to the referral level.
- Regulatory bodies should supervise the regulations set on pharmacy/shops regarding drugs dispensing.

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Availability of data and materials: Dataset that support this study's conclusion is available on request to the author.

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