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RESEARCH ARTICLE

An assessment of pharmacist counselling on the patients' knowledge of ophthalmic medications

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Abstract

Background: Pharmacist counselling helps patients achieve their treatment goals by improving their medication knowledge, including ocular drugs. The visual system transmits 80% of sensory information; hence, eye health is crucial. Routine pharmacist counselling has been carried out to gain ophthalmic medication knowledge for every patient dispensed with a prescription in the outpatient pharmacy Surabaya eye clinic. However, the result of this counselling on patients' knowledge has not been evaluated. **Objective:** The aim of this study is to measure the level of patients' knowledge of ophthalmic medications. **Methods:** A cross-sectional study was carried out for one month by interviewing patients. A well-structured questionnaire of 15 questions was developed to assess the patient's knowledge. The level of knowledge was classified as high, moderate, or low. **Results:** This study involved a total of 80 patients. The study showed that patients with a high, moderate, or low level of knowledge were represented by 33(41.25%), 45(56.25%), and 2(2.5%) patients, respectively. Demographic characteristics (gender and educational level) did not affect patients' knowledge of ophthalmic medication ($p>0.05$). The knowledge of potential side effects of ophthalmic drugs was least understood. **Conclusion:** There is a need for improvement in the performance of pharmacist counselling since most patients have moderate to low knowledge of ophthalmic medications.

Introduction

Medication administration is effective when the patient obtains the proper drug at the optimum dose for their needs over time, at the optimal level, and affordable cost to them and the community. To this impact, the proficient abilities and encounters of pharmacists apportioning forms enormously impact how ambulatory patients utilise drugs. Similarly, patient education level and motivation are important factors (Hirko & Edessa, 2017).

The eyes play an essential role in having a good quality of life. Therefore, eye health must be maintained because damage or irritation to the eyes will hinder daily activities. Eye health can be disrupted, ranging from mild to severe, resulting in blindness and causing limitations in daily activities and patients' quality of life.

However, blindness and visual impairment can be prevented if treated earlier and promptly (CDC, 2023).

Moreover, pharmacist communication skills are vital technical skills required for the delivery process, and this is very important to get satisfactory advice that encourages patients to use drugs rationally (Demilew & Nigussie, 2014). On the other hand, patient knowledge regarding the topical eye medication skill, indication of using the ocular medicine, and side effects of the ocular drug is required to gain maximum therapeutic effects (AAO, 2023). Patient education and family support effectively promote patient involvement in care and better self-management (Suprapti *et al.*, 2022).

Evaluating pharmacists' counselling on patients' eye medication knowledge is essential for pharmacists' professional continuous performance improvement. Additionally, to improve patients' knowledge, it is

essential to understand which patients' characteristics will benefit from upgrading their knowledge of eye medications.

Methods

Study design

This prospective cross-sectional study was conducted among Surabaya eye clinic outpatients from March to April 2021. Patients were chosen based on inclusion criteria. Subjects were to be male or female, over 15 years old, taking topical eye drops, ointments, or both combinations and willing to participate with informed consent. The Faculty of Pharmacy ethical committee of Universitas Airlangga gave the researchers approval. Additionally, all study participants gave written informed consent upon recruiting.

Data collection

The data was maintained securely and confidentially. The patient information was anonymised. Demographic variables, including gender, age, education level, and occupation, were obtained by direct interviews using a validated questionnaire. The questionnaire comprises 15 questions designed to evaluate the essential knowledge that patients should possess regarding their drugs. The inquiries encompassed the following aspects: the specific brand name of the medication, its indications for use, the recommended duration of drug administration, the frequency of drug intake per day, the appropriate application technique for the topical eye medicine, the proper utilisation of the eyedrops bottle or eye drop mini dose, the sequence of medication administration. It is worth noting that in cases where multiple topical eye medicines are prescribed, the correct procedure for applying eye ointment, the appropriate method for consuming tablets or syrup, the recommended course of action in the event of medication omission, the appropriate storage conditions for the drug, the proper interpretation of the etiquette labels, the anticipated therapeutic outcome of the treatment, and the potential side effects associated with the medication remain very important.

Data analysis

The data obtained from the study were analysed using the statistical software SPSS version 26. The frequencies of participant attributes were calculated using descriptive statistics. The chi-square test was employed to examine the subjects' baseline characteristics and patients' knowledge.

Outcome measures

This study examined how pharmacist counselling affects patient knowledge. Routine pharmacist counselling has been implemented in this Surabaya eye clinic for several years. Participants were interviewed to assess their knowledge and received one point for each correct knowledge question. Therefore, participants' scores varied from 0 to 15. Scores above ten indicated a high level of knowledge, 6-9 points mean moderate, and fewer than six points mean a low level of knowledge, respectively. Furthermore, a correlation between patient demographics and knowledge will also be studied.

Results

Sociodemographic overview

The sociodemographic characteristics of the patients are presented in Table I. The study comprised 80 participants, of which the higher gender composition was female, accounting for 58%. The composition of educational levels was almost equal, with 55% of patients having a basic educational level. All participants in this study comprised first-time (new) and repeated visit patients to the outpatient pharmacy Surabaya eye clinic. Repeated visit patients were defined as patients coming to the outpatient pharmacy Surabaya eye clinic at least two times.

Table I: Demographic data

Demography	Number	%
Gender		
Female	46	58%
Male	34	43%
Educational level		
Basic	44	55%
Higher	36	45%

Table II shows that approximately 41% of the participants included in the study showed a high level of knowledge of ocular medications. In contrast, almost 56% had a moderate level of knowledge, while only about 3% demonstrated a low level of understanding in this domain. The assessment of knowledge level encompassed various factors, including the understanding of the medication's brand name, awareness of its indications, understanding of the recommended duration and frequency of use, proficiency in applying topical eye medication, competence in utilising eye drop bottles or mini-dose

containers, comprehension of the sequence for administering various topical eye medications, proficiency in applying eye ointment, competence in ingesting tablets or syrup, knowledge of the appropriate course of action in the event of medication omission, awareness of proper drug storage practices, ability to interpret prescription labels, awareness of expected treatment outcomes, and understanding of potential medication side effects.

Table II: Patients' level of knowledge about eye medication

Patients' knowledge	Number	%
High	33	41.25%
Moderate	45	56.25%
Low	2	2.5%

Furthermore, the data presented in Table III indicate no statistically significant difference between males and females regarding their knowledge level ($p = 0.977$). There was no apparent influence of education level and occupation on patients' knowledge of ophthalmic medications.

Table III: Correlation of patients' characteristics and level of knowledge

Demography	Level of knowledge			p-value
	High Number (%)	Moderate Number (%)	Poor Number (%)	
Gender				
Female	19 (24%)	26 (33%)	1 (1%)	0.977
Male	14 (18%)	19 (24%)	1 (1%)	
Educational level				
Basic	16 (20%)	28 (35%)	1 (1%)	0.662
Higher	17 (21%)	17 (21%)	1 (1%)	

Moreover, the quality of delivering messages within pharmacist counselling was measured by interviewing patients. Table IV shows the patients' perception during their interaction with the pharmacist in the outpatient pharmacy Surabaya eye clinic. The perception measured was the clearness of the pharmacist's instruction, the voice and tone, and the politeness of the pharmacist.

Table IV: Patients' perception toward the pharmacist's counselling process

Categories	Patients' perception		
	Clearness of instruction	Clearness of voice and tone	Politeness
Low	0	0	0
Moderate	0	6 (7.5%)	0
Good	72 (90%)	66 (82.5%)	46 (57.5%)
Best	8 (10%)	8 (10%)	34 (42.5%)

Discussion

Routine pharmacist counselling on eye medications for patients at this private eye clinic has been conducted for several years. The pharmacists in this clinic gave information on ophthalmic medication to patients who had visited the clinic for a new and repeated visit. However, the result of this pharmacist counselling on the level of patient knowledge has never been studied before. This study has demonstrated that routine pharmacist counselling for patients in the Surabaya eye clinic still needs the pharmacist's continuous professional improvement since almost 60% of patients had a moderate to low knowledge of ophthalmic medications. However, since this study is a first-time evaluation of pharmacist counselling performance toward patient knowledge, 40% of patients with high knowledge still show good results of pharmacy counselling. An analysis of the questionnaire showed that some of the important areas of the knowledge of ophthalmic medications have been widely covered with good results, such as how the ophthalmic drugs will be used either in eye drops or ointment, including mini doses or bottles. Also, patients mostly know the indication of eye drugs they use within lay language

terminology, such as eyedrops for dry eye or red eye. Moreover, most of the patients understood how ophthalmic medication should be stored. The area that was least understood in this study was the awareness of any potential side effects of ophthalmic medication. The positive impact of regular pharmacist counselling in this eye clinic corresponds to a separate investigation demonstrating pharmacists' contribution to enhancing patient outcomes related to asthma and elevating the overall quality of life (Zairina, 2022). The positive impact of pharmacist counselling was also found in another study on caregivers' knowledge of paediatric atopic dermatitis (Cheong *et al.*, 2019). Even though this study did not measure adherence, several studies showed that a higher level of knowledge is associated with better medication adherence (Okuyan *et al.*, 2013; Jankowska-Polańska *et al.*, 2016).

About 41.25%, 56.25%, and 2.5% of patients in this study had a high, moderate, and low level of knowledge, respectively. This figure was similar to the study done in Saudi Arabia, which showed that about 51.3%, 41.1%, and 7.6% had high, moderate, and low levels of knowledge, respectively (Alessa *et al.*, 2022). However, the Saudi-Arabian study focused on self-medication, while this study interviewed patients to measure their knowledge of physician-directed therapy.

Based on the socio-demographic profile of the participants, it was found that 58% of the participants who sought medication in this study were identified as female. Another study has also shown that the incidence of women seeking medicine was higher than men with increasing age (Pristianty *et al.*, 2023). In another meta-analysis study, it was revealed that two-thirds of individuals with visual impairments were women, a gender discrepancy that holds for developed and developing countries (Zetterberg, 2016). Interestingly, about 79% of individuals involved in the study on self-medication of ocular symptoms conducted in Saudi Arabia were female (Alessa *et al.*, 2022). Our study revealed a further finding showing no statistically significant correlation between demographic parameters (gender and level of education) and the patient's level of knowledge. Again, this result is similar to the Saudi Arabian study that showed no significant difference between patient demographics and level of knowledge (Alessa *et al.*, 2022). This finding emphasised the importance of pharmacist counselling to improve patients' eye care. A yearly or monthly evaluation may be needed to evaluate and give feedback on the continuous professional performance of pharmacist counselling. However, it is important to maintain the clarity of instruction, voice, tone, and politeness during communication with patients since this evaluation

showed that most patients had a very positive perception of the pharmacist.

Conclusion

This evaluation of routine pharmacist counselling regarding patient knowledge is the first of its kind. This study revealed that patients' knowledge of ophthalmic medications still needs to be improved, but an attitude of communication should be maintained.

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