

**Original Article****PROFICIENCY OF EYE DROP INSTILLATION BEFORE AND AFTER THE PRACTICE EDUCATION AMONG INTERNS POSTED TO DEPARTMENT OF OPHTHALMOLOGY**Shantala Arunkumar<sup>1</sup>, Rashmi Chittawadagi<sup>2</sup><sup>1</sup>Professor & Head, <sup>2</sup>Tutor

Department of Ophthalmology, S. S. Institute of Medical Sciences and Research Centre, NH-4, Bypass Road, Davangere-577005, Karnataka, INDIA

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**ABSTRACT:****Objectives**

To assess the knowledge and practice of instillation of eye drops among interns.

**Materials & Methods:**

This is a prospective, nonrandomized trial with an educational intervention conducted at a tertiary hospital with 100 interns posted to Dept of ophthalmology

**Results and conclusions**

Hand washing, correct eye, correct medication, technique improved after the training. Interest remained the same. This study concludes, the need to teach interns and enable them to practice the skill of eye drop instillation to overcome the methodological problems and increase efficacy.

**Keywords:** Eye drops, Instillation technique, Interns

**INTRODUCTION**

Multiple factors can influence patients' outcome to topical ophthalmic medications. An important factor that is often overlooked is the method of eye drop administration, including the handling, storing, and actual administering of eye drops. These aspects of patients' eye drop administration, which may be strongly related to the success of prescribed therapies and to determine whether such proficiency correlates with the prevalence and/or duration of illness<sup>1,2,3</sup>.

There have been few attempts to describe the practical aspects of patients' eye drop administration and to identify potential problems that may adversely affect effective therapy. A better understanding of the settings, circumstances, and methods adopted may be the first step toward improving patient education, compliance, and therapeutic efficacy. This study attempts to address this issue<sup>1,6</sup>.

Education regarding appropriate eye drop utilization is particularly important in areas with low literacy rates and limited formal education<sup>7</sup>. Kholdebarin et al<sup>8,9</sup> have reported that improper administration techniques were associated with the patients' formal education limited to elementary school. Muir et al<sup>10</sup> confirmed that subjects demonstrating low literacy levels were less adherent to their glaucoma medications than those with higher literacy levels.

**Address of Correspondence:****Dr. Rashmi Chittawadagi**Department of Ophthalmology, SSIMS&RC  
Davangere-577005, Karnataka, India

Email id : rashmichittawadagi@gmail.com

Mobile: 9740878993

## MATERIAL AND METHODS

### Participants:

The research protocol used in this study was approved by the Clinical Research Ethics Board of the college. This study was conducted in the Dept of ophthalmology, SSIMS&RC. Eligible study participants were 100 Interns posted to the dept of ophthalmology under compulsory rotatory internship program. Consent was obtained following a detailed explanation of the study by a native speaker in the language of choice.

Interns are evaluated on their ability to administer eye drops on their first attempt, and then are given an educational session that consisted of verbal instructions and an educational video. The outcome was observed at the end of 15 days.

The audio script that accompanied the video was as follows: This video will demonstrate how to apply eye drops properly. Pull down your lower eyelid to form a pouch that the drop should fall into. Apply a single drop to the eye and close both eyes for 30 seconds. Only one drop is needed; adding more drops will not make the medication work better, it will only waste the medication. Squeezing the bottle harder will make drops come out faster so be aware of how much force is needed to get only one drop out of the bottle. Make sure that the tip of the bottle doesn't touch your eyelashes, eyelids, or any other part of your eye<sup>4,8</sup>.

This is a prospective, nonrandomized trial with an educational intervention conducted at a tertiary hospital.

### RESULTS & DISCUSSION:

There was a distinct difference in the reported proficiency of eye drop instillation when compared with observed proficiency amongst study participants.

Hand washing was reported 0% at the beginning of study and improved to 93% at the end of 15 days of training. Choosing the correct eye drop improved from 91% to 95%.

There was drastic decrease in the incorrect technique like touching the periocular structures decreased from 75% to 15%, instillation on cornea by 70% to 5%, instillation in lower conjunctival sac increased from 30% TO 95%.

Interest among the interns remained the same throughout the study.

Of the criteria used to evaluate proficiency, it was observed that the inability to apply only one drop was the primary problem. For future studies, it may be beneficial to identify why this was the case, and to determine whether this was a result of subjects missing the eye completely, or administering more than one drop.

limitation to this study is the fact that the observation of a single session of eye drop instillation for only one eye may have resulted in an observation that differs from the subject's usual performance. Additionally, the presence of observers may also have influenced the subject's performance. A limitation to the study protocol was the observation stage of assessment.

As mentioned, the investigators did not find studies that focused on eye drop administration in interns to compare with this data

### CONCLUSION:

This study concludes, the need to teach interns and enable them to practice the skill of eye drop instillation to overcome the methodological problems and increase efficacy.

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**Disclosure**

The authors have no conflicts to declare with regards to financial interests or associations.

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**Table : 1: Proficiency of eye drop instillation compared with observed proficiency**

SI NO	PARAMETERS	BEFORE %	AFTER %
1	Hand washing	0	93
2	Correct eye	93	97
3	Correct Drop	91	95
4	Touching periocular structures	75	15
5	Instillation on Cornea	70	5
6	Instillation in lower conjunctival sac	30	95
7	Interest	92	92

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