

Assessment of IOP measurement skills in ophthalmology interns by direct observation of procedural skills (DOPS)

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Abstract

Background: Glaucoma is second largest cause of preventable blindness in the world. Early diagnosis and management of glaucoma decreases morbidity. Interns Proper training imbibes procedural skills. DOPS procedure gives opportunity for feedback and improvement. Objective of the study was to Analyse interns Pre and Post test knowledge, skills of Intra Ocular Pressure (IOP) measurement. **Methodology:** Study was done on 50 Ophthalmology interns from Nov – Feb 2016. Mentors, Assessors and Interns were sensitised, Pretest feedback was collected. Mentor taught IOP measurement procedure to interns by Peytons 4 step method. Intern practiced for 7 days and on 8th day I DOPS assessment was done followed by assessor feedback. After 7 days of practice, on 15th day second assessment was done and Post test feedback was taken from Intern and Assessor. **Results:** Pre and Post test Intern feedback analysis showed increase in *IOP knowledge* (2.0) to (4.1). *Tonometer Use* (1.0) to (4, 2). *Motivation* (3.32) to (4.42) p value was significant in all three parameters (<0.001). Assessors Pre and Post test feedback evaluation showed increase in *IOP knowledge* (2.02) to (4.06), use of *Tonometer* (1.78) to (4.2) p value was significant. DOPS assessment result analysis between I and II encounter showed increase in the level of achievement from 73% (37) level 3 to 98%(49) level 4. **Conclusion:** DOPS assessment increased the knowledge, confidence level of intern in measurement of IOP, It can be used as an assessment tool for improvement of intern skills.

Key Words: Glaucoma, Intraocular Pressure, Direct Observation of Procedural Skills.

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Received Date: 16/07/2017 Revised Date: 08/08/2017 Accepted Date: 02/09/2017

DOI: <https://doi.org/10.26611/1003331>

Access this article online

Quick Response Code:



Website:
www.medpulse.in

Accessed Date:
08 September 2017

optic neuropathy, visual field defects, and with or without raise in intraocular pressure (IOP). As per World Glaucoma Association raised IOP is the only modifiable risk factor. Early diagnosis and management of glaucoma leads to considerable decrease in morbidity and increase in patient quality of life. measurement of IOP forms a major factor in initiation of treatment, WHO has made IOP screening mandatory for patients above 40. For this we need health professionals to be trained thoroughly in measurement of IOP. Schiotz Tonometry is a portable device used for screening and can be carried to remote places.

Need for the Study: Interns are the future health care professionals working in outreach areas after their internship. If armed with the skills of IOP measurement and fundus examination they can prove to be weapon in glaucoma screening in the society. Proper training imbibes the procedural skills in an intern. Direct

INTRODUCTION

Glaucoma also known as silent thief of vision and is the second largest cause of preventable blindness in the world¹. As per RAAB (Rapid assessment of avoidable blindness) glaucoma is responsible for 5.8% cases of blindness in the 50+ population². Glaucoma is a triad of

How to cite this article: Sudhir Babu Padgul, Beatrice Choppala. Assessment of IOP measurement skills in ophthalmology interns by direct observation of procedural skills (DOPS). *MedPulse International Journal of Ophthalmology*. September 2017; 3(3): 48-50.
<https://www.medpulse.in/Ophthalmology/>

observation of procedural skills (DOPS) is a modified objective method of assessment in the field of medical sciences, (3,4). Main purpose of formative assessment in the simulated setting is to support student learning through the provision of feedback and debriefing(5,6) DOPS procedure was selected for this study as it gives a chance for assessor and mentor to give feedback on the skills attained and master the technique by concentrating on weaker areas of skill.

OBJECTIVE: At the end of the Ophthalmology postings an intern should be able to:

- Choose patients for IOP measurement based on clinical presentation.
- Demonstrate the procedure of IOP measurement.
- Perform independently IOP Measurement accurately in a given patient.

MATERIALS AND METHODS

Place of study: Department of Ophthalmology, KIMS, Narketpally

Period of study: Nov 1 st 2015 to Feb 28th 2016

Sample size: 50 Interns -10 Batches, 5 interns in each batch,15 Days/Batch

METHODOLOGY:

After getting IRB approval, Direct Observation of Procedural Skills (DOPS) forms were validated. Faculty

acting as mentors and assessors were sensitized for the procedure. On first day of ophthalmology postings, interns consent was taken and was sensitized for the program. Interns knowledge, attitude and motivation towards the procedure was recorded by a pre validated questionnaire. In each batch one mentor was allotted to each intern. Demonstration of IOP measurement using Shiotz Tonometer was done as per Peyton's four step approach. Intern practiced the procedure with mentor for 5 days and minimum of 25 cases. One assessor examined one intern in allotted batch. DOPS first encounter assessment was done after 8th day. Depending upon his performance feedback was given by assessor. Intern was allowed to practice again under supervision of mentor and concentrate on the weakness. 2nd encounter of DOPS assessment was done on 14th day and was followed by questionnaire Feedback from intern and Assessor. Global rating analysis was done and intern was certified for trained in the procedural skills of IOP measurement. There were 10 batches and In each Batch Intern: Mentor: Assessor ratio of 1:1:1 was maintained. Assessors were different for both encounters to avoid bias. During Whole project, each Mentor guided 10 interns (1:10)and each Assessor examined 10 Interns (1:10). Data collected was statistically analysed.

RESULTS

Gender Distribution: Female: - 33 (66%); Male:- 17 (34%)

Table 1: Intern Feedback

	#Pre mean (Mode)	#Post mean (Mode)	Difference of mean	*significance
IOP Knowledge	2 (2)	4.1 (4)	2.08 (Sd -0.92)	<0.001 significant
Ease and Use Of shiotz Tonometer	1.7 (2)	4.2 (4)	2.5 (Sd -0.67)	<0.001 significant
Motivation for IOP Measurement	3.32 (3)	4.42 (4)	1.1 (Sd -0.76)	<0.001 significant

* Wilcoxon ranked signed test , # LIKERT SCALE SCORE Mean score of intern feedback improved in all the parameters after DOPS

Table 2: Assessors feedback

	#Pre mean (Mode)	#Post mean (Mode)	Difference of mean	*significance
Has Knowledge of IOP	2.02 (2)	4.16 (4)	2.14 (sd -1.01)	<0.001 Significant
Can use Tonometer independently with accurate readings	1.78 (2)	4.2 (4)	2.42 (sd -0.88)	<0.001 Significant

* Wilcoxon ranked signed test , # LIKERT SCALE SCORE Mean score of intern feedback improved in all the parameters after DOPS

Interns Feedback: At the end of the postings 82% (41 / 50) of the interns had a positive inclination towards choosing Ophthalmology as one of their career option.

Table 3: Global summary

Achievement level	I encounter N=50	II encounter N=50	Significance
0	0	0	
1	1	0	
2	12	1	
3	34	3	Chi square test P< 0. 001 X2 = 74.02 Significant
4	3	46	

After 1st Encounter 74% of interns had achieved score of level 3 and above. After 2nd Encounter 98% of interns had achieved level 3 and above showing improvement in all areas.

DISCUSSION

Work based assessments are gaining more importance and relevance as these are the settings in which a qualifying Doctor is going to practice and deliver health care services to the society. Work place based assessment gives a formal and informal opportunity for mentor's and assessor's to give proper feedback on the areas of weakness and improvement. Direct Observation of Procedural Skills (DOPS) is one of the work based assessments where procedures of a resident can be monitored and corrected. Profanter C⁷ in his study on undergraduates skills stated that DOPS has higher performance rates of 90% and is an efficient way of teaching and assessing clinical skills. Roghieh N et al⁸ conducted DOPS study on undergraduate nursing students for their skills in ICU on Arterial Blood Sampling and Endo Tracheal Tube suctioning, and found that group that underwent DOPS encounter showed statistically significant high post test scores. Shahzad Hussain Waqar⁹ did study on students perception of DOPS in Surgery Residents, majority of students agreed that DOPS improved their surgical skills and is a better way of assessment. Sadeghigooghari, N.ka et al (10) in their study of satisfaction of DOPS assessment on Nursing Students and Assessors showed 70% of satisfaction among students and 75% of the assessors were satisfied with acceptability and validity. hence DOPS forms an important tool of assessment with high objectivity.

CONCLUSION

With this study we conclude that

- Direct Observation of Procedural Skills (DOPS) is a formative assessment which increases the students knowledge and helps mastering skill and perform independently and accurately.
- It is recommended that Direct Observation of Procedural Skills DOPS be used as an assessment tool for overall improvement of student skills.
- Limitation of this study was lack of inclination and motivation of the assessors.

Take Home Message: DOPS is an important assessment tool which also teaches while assessing, and instills positive performance effect in the learner

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Source of Support: None Declared

Conflict of Interest: None Declared