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THE EFFECT OF ONE-DAY CLINICAL TRAINING ON THE CLINICAL OPHTHALMOLOGICAL SKILLS OF FIFTH YEAR MEDICAL STUDENTS

Muawyah Al-Bdour [1*], Taher Obaid Alshammri [2], Ziyad Qurayti Alanazi [3], Raied Noor Takroni [3], Aamer Mutlaq Alharbi [3], Faisal Muslih Alanazi [3], Albandari Muslih Alanazi [3]

[1] Professor of Ophthalmology, Faculty of Medicine, The University of Jordan, Amman, Jordan,
[2] Department of Ophthalmology, Jordan University Hospital, Amman, Jordan,
[3] College of Medicine, Jordan University of Science and Technology, Irbid, Jordan

Abstract:
The significant increase in the number of medical students poses a challenge to teaching ophthalmology within the two-week course period. The challenge is evident in the newly established medical college at the University of Jordan. Students are required to undertake a one-day clinical training in the hospital to familiarize themselves with essential clinical ophthalmologic skills. It is a requirement by the International Council of Ophthalmology that medical students are familiarized with clinical skills during their course work. An investigation was carried out to determine the effect of the one-day clinical training in clinical ophthalmologic skills, for fifth-year female students at the University of Jordan in 2018. The participants completed a self-assessment questionnaire before and after the training to assess the level of confidence in various skills acquired from the training. The outcome indicated effect on the students' familiarization with clinical ophthalmic skills. One-day training in the hospital is beneficial in developing clinical ophthalmic skills. The effect of one-day clinical training in clinical ophthalmology skills of fifth-year female medical students at the University of Jordan was statistically significant in most of the clinical skills they were supposed to be developed.

Keywords: *One-day clinical training, clinical ophthalmological skills.*

Corresponding author:
Dr. Muawyah Al-Bdour,
Professor of Ophthalmology,
Faculty of Medicine, The University of Jordan,
Amman, Jordan,
Mobile: +962795519977
Email: bdourjo@yahoo.com

QR code

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INTRODUCTION:

The field of ophthalmology has undergone significant changes in various clinical aspects with new advanced technology now available to aid in examination and diagnosis of eye conditions. Clinical training is vital in ensuring that essential skills are instilled in medical students so that they are familiar with new practices and technology. Limited exposure to clinical ophthalmologic skills in medical college reflects on the ophthalmology back grounds of interns [1], general practitioners and residents [2,3], and in eye-examination skills [4].

Adequate ophthalmic diagnostic and practical skills are essential in all areas of medicine [5]. Many systemic illnesses have ocular manifestations, some of which may be the first or only symptom alerting the physician of an underlying condition. It is estimated that up to 10 % of patients who visit general practitioners have eye-related conditions [6]. This is particularly germane given that eye complaints are among the most common symptoms in ambulatory care patients [7,8]. Additionally, a basic knowledge of ophthalmology is required in the management of patients with certain neurologic, endocrine, rheumatic, and infectious conditions [9]. This study purposes to investigate if one-day training is enough for fifth-year students.

The International Council of Ophthalmology [ICO] recognizes the importance of clinical ophthalmology training in improving eye care globally and has identified ophthalmic education as one of the pillars in its strategic plan to preserve and restore vision worldwide [9]. The Council has developed detailed guidelines that outline the core competencies essential for all medical students before completion of medical school so that as future primary care physicians they can proficiently handle ophthalmic pathologies [see Table 1] [9]. In adherence to the Council's requirements, the University of Jordan offers a one-day clinical training as part of its Tow -week ophthalmology course. A study was done in the US to show the effect of one-day ophthalmology experience of medical students [10-12]. This study aims to investigate if there is a significant effect of the one-day clinical ophthalmologic training on the female fifth-year student at university of Jordan.

List 1: international of ophthalmology core areas	**List 2: international council of ophthalmology core clinical skills**
Ophthalmology exposure areas Cornea and external diseases Lens and cataract Neuro-ophthalmology Vitreoretinal disease Glaucoma Pediatric ophthalmology and strabismus Diseases of the eyelid, lacrimal system, and orbit Ocular manifestations of systemic diseases Intraocular tumors Refraction and contact lens Refractive surgery Cornea and external diseases	Completion of an ocular history Visual acuity testing Visual field examination Extraocular motility examination Papillary light reflex assessment Papillary dilation Fundoscopy with direct ophthalmoscope Slit-lamp examination Examination of the cornea with fluorescein dye Intraocular pressure assessment Anterior chamber depth assessment Indications for referral to ophthalmology

Table 1: International council of

MATERIALS AND METHODS:

Fifth-year medicine students at the University of Jordan must complete a two-week ophthalmology course after which, they are expected to be familiar with different eye disorders and clinical ophthalmological skills, by the International Council of Ophthalmology [see table 1]. During the 2018 ophthalmology course, four outpatient ophthalmology clinics at Jordan University Hospital were used for a one-day clinical skills training of female medical students on the second week of their course education. A total number of 110 female students participated in the training. The students were divided into groups of twelve. Each group would spend thirty minutes with an ophthalmology staff for basic ophthalmological skills training, after which, each student was offered an opportunity to practice the taught skills.

A Likert scale questionnaire was administered to all female students one day before the clinical training and one day after the training. The same questionnaire was used for two days. of the 110 students, sixty-five students completed questionnaires pre-and-post training. the questionnaire consisted of close-ended questions containing the list of skills they were supposed to have acquired by the end of the training. The respondents were offered a five-point scale expressing their level of confidence. The options were strongly confident, confident, neutral, unconfident and strongly unconfident. The students were supposed to acquire thirteen skills [see Table 2]. The pre-training and post-training scores were collected and compared, and the results analyzed to determine the impact of the training. Statistical analysis was done using the Software Package for Social Sciences [SPSS] with a significance level of 0.05[$P < 0.05$].

RESULTS:

Sixty - five female students completed the survey by answering the questionnaire before and after the clinical training. The significance level for each skill was obtained [see Table 3]. The results show that 85 of the skills were significant. Only two out of thirteen skills were found to be insignificant. The P value of the eleven significant skills were less than 0. 05, while the Two insignificant skills P value was greater than 0.05.

No.	Clinical ophthalmological examination skill	Significance	P value
1.	Students' complete ophthalmic history taking	Significant	0.000
2.	Measuring visual acuity by using Snellen's chart	Significant	0.000
3.	Identifying the papillary direct light reflex	Significant	0.000
4.	Identifying the papillary indirect light reflex	Significant	0.000
5.	Measuring the visual field by confrontational methods	Significant	0.008
6.	Using slit lamp	Significant	0.000
7.	Using direct ophthalmoscope	Significant	0.000
8.	Recognizing optic disc on direct ophthalmoscopy	Significant	0.000
9.	Recognizing retinal blood vessels on direct ophthalmoscopy	Significant	0.000
10.	Performing corneal light reflex	Significant	0.000
11.	Performing the red reflex	Significant	0.000
12.	Knowing the innervations of the eye	Insignificant	0.525
13.	Identifying defects occurring due to third, fourth, and sixth nerve palsies	Insignificant	0.921

Table 3: significance level of skills according to student response

Table 2: list of skills students are supposed to acquire during clinical training

List 3 : training skills
1.Taking a complete ophthalmic history
2. Measuring visual acuity by using a Snellen's chart
3. Measuring pupil direct light reflex
4. assess pupil indirect light reflex
5. Innervation of eye
6. identifying defects occurring due to 3rd, fourth and sixth nerve palsy
7.Measuring visual field by a confrontational method
8. Using slit lamp
9. Using a direct ophthalmoscope
10. Recognize optic disk
11. Recognize retinal vessels
12. Performing corneal light reflex

DISCUSSION:

The students showed confidence in having acquired adequate experience in eleven out of thirteen skills. The eleven skills had significant levels of less than 0. 05, indicating that the training was adequate. The eleven skills acquired include: students' complete ophthalmic history taking, measuring visual acuity by using Snellen's Chart, identifying the papillary direct light reflex, identifying the papillary indirect light reflex, measuring the visual field by, confrontational methods, using slit lamp, using direct ophthalmoscope, recognizing optic disc on direct ophthalmoscopy, recognizing retinal blood vessels on direct ophthalmoscopy , performing corneal light reflex, and performing the red reflex. In the eleven skills, the P value is 0,000, except for the skill of measuring the visual field by confrontational Methods whose p value is 0,008.

It was expected that the effect of the one -day clinical ophthalmological training would be significant. However, The training in knowing the innervations of the eye, and identification of defect occurring due to third, fourth and sixth nerve palsies were found to be nonsignificant.

Both skills had significance levels greater than 0. 05. The P value for knowing the innervations of the eye was 0. 525 while that of identifying defects occurring due to third, fourth and sixth nerve palsies was 0. 921. The nonsignificant effect of the one - day clinical ophthalmological training was not expected. The observed results could be because the two skills tend to be related more to theoretical teaching than the practical skills. It could also be attributed to the fact that there were no real cases in the hospital during the training that the students could observe.

The qualitative study provides a rich insight into the impact of the one - day clinical ophthalmological training. In agreement with previous studies [10], participants in the study generally had confidence that they have acquired adequate training on clinical ophthalmological skills. The one - day experience was useful in providing ophthalmic skills to the medical students as depicted by the results of the questionnaire.

CONCLUSION:

The study shows that the effect of one - day clinical ophthalmology training of fifth year female students in the clinical ophthalmology skills at the University of Jordan was statistically significant in Most of the clinical skills they were supposed to obtain. Students showed that they are more confident in their clinical ophthalmological skills after the one - day clinical ophthalmological training. Although the duration of training was short, it was adequate for students to gain eleven out of the thirteen required skills confidently. The training is, therefore, an essential part of the ophthalmological course education because it has a significant effect on female fifth year students' clinical ophthalmological skills.

The strengths of the study include the voluntary participation of respondents. When respondents volunteer, they are likely to be committed to providing information. Additionally, the study uses a specially designed questionnaire, which the participants answered, before and after the training. The entry scores when compared reflect the effect of the one - day clinical ophthalmological training.

Several limitations of this study require that there is cautious use and interpretation of the results. First, the simple is self - selected and homogenous. The limitation with self-selection is that some students may be hesitant to participate in the research due to lack of confidence, resulting in a response from most participants who are confident in their learning ability.

The use of female respondents only excludes potential male participants that may influence the findings. The homogeneity of the sample limits the replicability of the findings. Another limitation is that the results will be difficult to replicate because the sample is limited to one institution. Different institutions may have varying training strategies with different training periods. Obtaining feedback from students only results in subjective self-assessment which may be corrupted with bias. Future replication of the study is recommended to address these limitations.

Further research should be carried out on heterogeneous sample size and include male participants and across various institutions to ensure the sample composition is representative of the general population. Additionally, future research should investigate the enough period required for students to gain skills in knowing the innervations of the eye and in identifying defects occurring due to third, fourth and sixth nerve palsies. Further research is necessary to determine if an objective assessment of the students by the clinical training staff will have similar results. It is important to note that the measure of students' confidence regarding skills gained during clinical training, does not necessarily mean the students will have good performance during practice. Further evaluation post-training performance is recommended to obtain a better assessment of the effect of the training.

Despite the limitations, the findings are clear: the one-day training is effective in improving student confidence in clinical ophthalmological skills. Training in clinical ophthalmological skill is essential for various reasons. First, it is essential as it adheres to the requirements of the International Council of Ophthalmology. Second, it ensures that students start their practice when adequately skilled. Lastly, ensuring that students are adequately skilled is important in avoiding misdiagnosis, and improper use of hospital equipment.

Competing interests

The authors declare that there are no competing interests regarding the study.

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REFERENCE LIST:

1. Clarkson, JG 2003, ' Training in ophthalmology is critical for all physicians' , Arch Ophthalmol, vol. 121, no. 9.
2. Cherry, DK, Woodwell, DA & Rechtsteiner, EA 2007, 'National Ambulatory Medical care survey : 2005 summary' , Adv Data, vol. 29 , pp.1-39.
3. Crombie , AL 1976, 'Ophthalmology in the undergraduate curriculum' , Trans Ophthalmol Soc UK, vol, 96, no. 1, pp. 33-34.
4. David, AQ, & William AC 2006, 'Impact of a 1-Day Ophthalmology Experience for Medical Students' , Elsevier Inc, Vol. 113, no. 12, 2307-2309.
5. Eze BI, Oguego NC, Uche JN, Shiwoebi JO &Mba, CN 2012, 'Assessing the Knowledge and skills in Clinical Ophthalmology of Medical Interns : Survey Results from Enugu, South-western Nigeria' , Middle East African Journal of Ophthalmology, vol. 19, No. 1, pp. 135-140.
6. International Council of Ophthalmology 2009, Principle and guidelines of a curriculum for ophthalmic education of medical students . A vailable from:
7. http://www.icoph.org/pdf/icocurricmed. [11 March 2009] .
8. Jacobs, DS 1998, 'Teaching doctors about the eye : trends in the education of medical students and primary care residents. Surv Ophthalmol, Vol. 42, no. 4, pp. 383-389.
9. Lippa LM , Boker J , Duke A & Amin, A 2003, ' A novel 3-year longitudinal pilot study of medical students' acquisition and retention of screening eye examination skills.
10. Ophthalmology, vol. 113, no. 1, pp. 133-139
11. Sheldrick, JH, Vernon, SA, Wilson, A & Read, SJ 1992, 'Demand incidence and episode rates of ophthalmic disease in a defined urban population' , BMJ, Vol. 17 , no. 305, pp. 933-936.
12. Spivey, BE 1978, ' Ophthalmology in medical student education. Philosophy, content, and process' , Ophthalmology, vol. 85, pp. 1299-1308.