Study on Ocular Diseases in Ain Shams University New Medical Students and Its Value on Future Subspecialty

Thesis

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Esraa Ahmed Ramadan Mohamed

Dedication

To:

My parents

for their endless love, support,

and continuous care

My Husband

&

My Family

LIST OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF FIGURES cont...

LIST OF FIGURES cont...

LIST OF ABBREVIATIONS

Abb.	Full term
AAO PPP	*American Academy of Ophthalmology Preferred Practice Practice*
ATS	*Amblyopia Treatment Studies*
BCVA	*Best Corrected Visual Acuity*
CCVD	*Congenital Color Vision Deficiency*
CVD	*Color Vision Deficiency*
HRR	*Hardy Randy Rittler*
ICD	*International Classification of Diseases*
IOP	*Intraocular Pressure*
MALT	*Mucosa Associated Lymphoid Tissue*
MNFL	*Myelinated Nerve Fiber*
PEDIG	*Pediatric Eye Disease Investigator Group*
RAPD	*Relative afferent papillary defect*
RAPD	*Relative Afferent Papillary Defect*
RD	*Retinal Detachment*
RE	*Refractive Errors*
RPE	*Retinal Pigment Epithelium*
VA	*Visual Acuity*
WHO	*World Health Organization*
XT	*Exotropia*
Yrs	*Years*

INTRODUCTION

Visual impairment is a global public health challenge. In 2013, a Global Action Plan was formulated by the World Health Assembly with an overall goal to reduce the prevalence of avoidable visual impairment worldwide ***(Gupta et al., 2015).***

Visual impairment is that the best-corrected visual acuity (BCVA) less than 6/18 as defined in the International Statistical Classification of Diseases and related Health problems, tenth revision (ICD-10) ***(Bekibele and Gureje, 2008).***

According to the World Health Organization (WHO), refractive errors (RE) such as myopia, hypermetropia and Astigmatism are the second leading cause of visual impairment after cataract among all age, gender and ethnic groups ***(Resnikoff et al., 2008).***

In 1950, **Arthur and Virginia Keeney** published an article entitled "Bqlindness among Practicing Physicians" in which they reviewed the careers of 19 physicians and concluded that while visual loss was not incompatible with continued medical practice, it imposed considerable difficulties for the affected physicians ***(*Keeney and Keeney, *1950).***

Screening showed that 96% of the color-blind students attending middle school and 65% of the color- blind university students are not aware of their anomalous vision status. Thus,

screening would greatly help affected students to choose their future professional orientation ***(Tagarelli et al., 1999).***

Koningsberger et al. in 1994 reported that color vision deficiencies were detected in 8% of Dutch gastrointestinal endoscopists and affected their diagnostic skill ***(Koningsber et al., 1994).***

Not only the color vision deficiency but also loss of stereoscopic vision is another big problem may face medical students or medical practitioners in their work. Binocular vision was first demonstrated by Wheatstone in 1838 that the human visual system computes horizontal disparities in the two retinal images to help determine the solid shape and relative depths of objects in the environment ***(Parker, 2007).***

We selected this subject to study because we believe that the routine ocular examination for the new medical students needs reevaluation to detect and manage ametropia, detection and prevention of bad ocular habits, screening for binocular vision, muscle imbalance, color vision which are important for many subspecialties like general and special surgeries, histology, anatomy, microbiology, histopathology, forensic medicine, clinical pathology and surely the ophthalmic subspecialty.

AIM OF THE WORK

To study the prevalence of ocular diseases in symptomless and symptomatic newly admitted medical students in the faculty of medicine Ain Shams University and its value on future subspecialty and to review most widely used new medical students' ocular examinations.

ANATOMY OF THE EYE

Bony orbit:

Each eye lies within a bony orbit which is formed of seven bones: Frontal bone, Zygomatic bone, Maxilla (or maxillary bone), Ethmoid bone, Sphenoid bone, Lacrimal bone and Palatine bone as seen in **(Fig. 1)** ***(Gbert et al., 2000).***

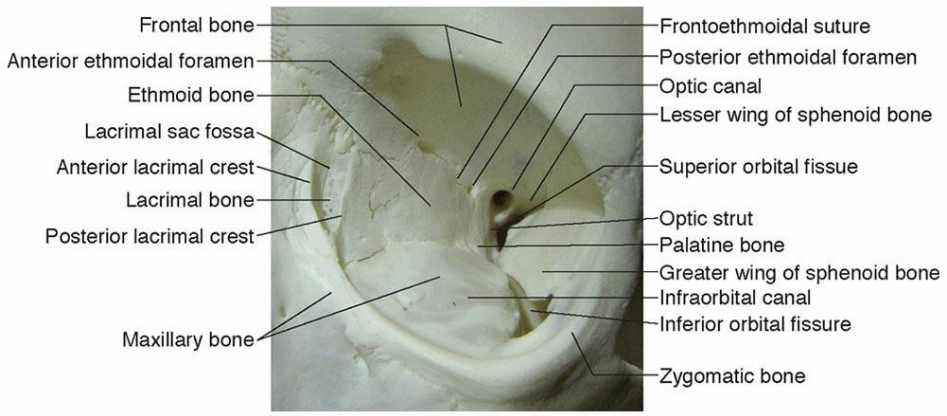

Fig. (1): Anatomy of the left orbit in a human skull ***(Cantor et al., 2015).***

Each eye is also surrounded by 7 extra ocular muscles which are medial rectus, Lateral rectus, Superior rectus, Inferior rectus, Superior oblique, Inferior oblique, Levator palpebrae superioris as seen in **(Fig 2)** and **(Fig 3)** respectively ***(Cantor et al., 2015).***