In conjunction with the World Optometry Day

"Embracing new paradigm in optometry"

25TH & 26TH MARCH 2021

e-IOVIC

International Optometry & Vision Science Conference

CO-ORGANIZED BY

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ABOUT e-IOVIC 2021

The International Optometry and Vision Science Conference (e-IOVIC) 2021 is the first international conference on optometry and vision science subject organized in the east coast region of Malaysia. e-IOVIC 2021 is co-organized by the Department of Optometry and Visual Science, Kulliyyah of Allied Health Sciences IIUM, the Optometry Unit from the Department of Ophthalmology Hospital Tengku Ampuan Afzan and the Association of Malaysian Optometrists.

e-IOVIC 2021 welcomes all participants for enlightening sessions.

Professor Dr. Suzanah Abdul Rahman
Dean,
Kulliyyah of Allied Health Sciences, IIUM.

With great pleasure, I would like to welcome everyone to the International Optometry and Vision Science Conference, e-IOVIC 2021. This inaugural conference is a special one as it is co-organized by the Department of Optometry and Visual Science, Kulliyyah of Allied Health Sciences, IIUM; the Optometry Unit, Department of Ophthalmology, Hospital Tengku Ampuan Afzan (HTAA) and Association of Malaysian Optometrists (AMO).

I am confident that with the theme "Embracing New Paradigm In Optometry" participants of this conference will definitely gain an abundance of contemporary and state-of-the-art information with regards to the optometry field.

Lastly, I wish everyone a fruitful and fulfilling conference!

Asst. Prof. Dr. Norsham Ahmad
Head, Department of Optometry and Visual Science, KAHS, IIUM.

I am deeply honored with the opportunity to welcome all the participants to the prestigious International Optometry and Vision Science Conference, (e-IOVIC) 2021. Today, optometry is stronger than it has ever been and with this expanded recognition and role, comes greater responsibilities.

As such, I personally think that this conference could not have been conducted at a better time as it epitomizes the urgent needs for us optometrist to always keep on updating our knowledge so that we can serve the community more efficiently.

I was made aware that the organizing committee had worked hard in ensuring that this conference is a success and for that, I applaud all of them for their diligence and effort. Experts from the field of Optometry and Ophthalmology, both local and international had been brought together to present their latest findings on the field of vision care at this illustrious conference. Thus, I am confident that this conference will indeed be very beneficial to all that participate.

Lastly, I humbly and vehemently urge the participants to really imbibe all the new ideas and knowledges from this conference and really benefit from it.

Dr. Naqibah Ghazali
Optometry Unit, Ophthalmology Clinic, Hospital Tengku Ampuan Afzan, Kuantan Pahang.

Assalamualaikum and very good day to one and all present here and thank you for joining us today on the 'e-IOVIC conference 2021'. This is the first conference in the history co-organized by HTAA and IIUM optometry department and completely conducted on digital platforms due to the COVID-19 pandemic.

It is our pleasure to introduce you to the esteemed guests in this 2-day conference who have come from various subspeciality in Optometry.

I would like to thank and acknowledge all the delegates and the support team who have worked hard to make this conference a truly successful one. Lastly, I wish everyone a successful and fruitful conference.

Mr. Ahmad Fadhullah Fuzai
President,
The Association of Malaysian Optometrists (AMO).

It gives the Association of Malaysian Optometrists great pleasure to partner with IIUM and HTAA for the International Optometry and Vision Science Conference, (e-IOVIC) 2021.

As optometrists continue to hunger to bring best practices in optometry to their patients, e-IOVIC is an oasis where knowledge is exchanged between the best.

We thank the dedicated IIUM and HTAA team as well as all our sponsors for all the hard work towards success in bringing e-IOVIC 2021 to a reality.

Asst. Prof. Dr. Firdaus Yusof @ Alias

Director, International Optometry and Vision Science Conference 2021 (e-IOVIC 2021).

Dear e-IOVIC 2021 attendees,

I would like to welcome everyone to the first International Optometry and Visual Science Conference (IOVIC). This conference is an inaugural tri-collaboration effort between the Department of Optometry, Kulliyyah of Allied Health Science, International Islamic University Malaysia; the Optometry Unit of the Ophthalmology Department in Hospital Tengku Ampuan Afzan; and the Association of Malaysian Optometrists. This "unconventional" conference, of a remote online, approach, is hoped to pave the paths for more IOVIC sessions in the future.

The theme for e-IOVIC 2021, "Embracing new paradigm in optometry", embodies our current situation during this pandemic. As physical distancing prohibits participants for a face-to-face type of conference, the organizing committee firmly believes that the pursuit of knowledge is unrestrainable, and thus, e-IOVIC are held online. We are resolute that e-IOVIC will reach a much larger participant during these challenging times. In addition, we believe that this new paradigm signifies the new norm that one must embrace to propel life at best, given these current situations.

e-IOVIC aims to provide optometry practitioners with an avenue to discuss current issues, optometric intervention, and new technologies in optometry and vision science. This international online conference also serves as a platform for clinicians and scientists to present their research and clinical findings. Moreover, e-IOVIC proudly brings various experts from all over the world to fill our exciting itinerary, together with oral and poster presentations of interesting scientific works. Additionally, for the local optometry participants, a perfect 2-day attendance will ensure 15 CPD points from the Malaysian Optical Council.

Lastly, we look forward to your participation in all the sessions that have been planned for e-IOVIC. We wish you the warmest welcome and earnestly congratulate everyone for being a part of e-IOVIC 2021. Have fun embracing the new paradigm in learning.

e-IOVIC
International Optometry & Vision Science Conference

PROGRAM ITINERARY

DAY 1
25 MARCH 2021

0800-0815	Delegates enter the e-platform.
0815-0900	Opening Ceremony • Dua recitation. • Welcoming remark by the Programme Director (Asst. Prof. Dr. Firdaus Yusof @ Alias). • Welcoming speech by the Rector of IIUM (Prof. Emeritus Tan Sri Dato' Dzulkifli Abdul Razak). • Officiating speech and Launching of e-IOVIC 2021 by the Director of Pahang State Health Department (Dato' Dr. Haji Bahari bin Dato' Tok Muda Haji Che Awang Ngah).
0900-0930	**Keynote Lecture 1: Diagnosing and Managing Dry Eye** ***by Prof. Dr. James Wolffsohn (Aston Research, United Kingdom).***
0930-0935	*Break & Sponsored Advertisement.*
0935-1020	Plenary Session 1 – Myopia: A global public health issue. Topic 1: International Myopia Institute – a global perspective *by Dr. Monica Jong (University of Canberra, Australia).* Topic 2: Simplifying Myopia Control: Expediting the explanation process *by Asst. Prof. Dr. Muhammad Afzam Shah Abdul Rahim (IIUM, Malaysia).* Topic 3: Myopia prevention initiatives in the Western Pacific Region: Malaysia *by Dr. Duratul 'Ain Hussin (BSKB, KKM, Malaysia).*
1025-1055	Symposium: Discovering Lifestyle Incorporated Technology for Modern Urbanites *by Ms. Karen Leong and Ms. Candice Choo [Frames 'N' Lenses (2008) Sdn. Bhd.].*

DAY 1
25 MARCH 2021

1055-1100	*Break & Sponsored Advertisement.*
1100-1145	Plenary Session 2 – The rejuvenation of ocular surface. Topic 4: Demystifying Artificial Tears: The Arts of Prescribing *by Asst. Prof. Dr. Mohd Radzi Hilmi (IIUM, Malaysia).* Topic 5: Effects of Silicon Hydrogel Contact Lens on Changes of Tear Film Lipid Layer, Visual Functions, Ocular Integrity and Comfort Among Silicone Hydrogel Contact Lens Wearers *by Dr. Asmah Ahmad (Hospital Melaka, Malaysia).* Topic 6: Dry eye sensation among COVID-19 patients: A review *by Asst. Prof. Dr. Noor Ezailina Badarudin (IIUM, Malaysia).*
1145-1150	*Break & Sponsored Advertisement.*
1150-1235	Plenary Session 3 –Ocular measurement and investigations. Topic 7: The chronicles of eye tracking: The What? The Why? The How? *by Dr. Mizhanim M. Shahimin (UKM, Malaysia).* Topic 8: Eye movement behaviour in reading: Does text size matter? *by Ms. Noor Halilah Buari (UiTM, Malaysia).* Topic 9: Machine Learning in Optometry *by Assoc. Prof. Dr. Mohd Zulfaezal Che Azemin (IIUM, Malaysia).*
Onwards to 1600	Oral presentation and poster viewing.

DAY 2
26 MARCH 2021

0830-0900	Delegate enter the e-platform.
0900-0930	**Keynote Lecture 2: Pediatric Vision Care: Doing the right things vs Doing things right** ***by Prof. Dr. Chen Ai Hong (UiTM).***
0930-0935	*Break & Sponsored Advertisement.*
0935-1020	Plenary Session 4 - Technological advances in optometry. Topic 10: Implementing digital faculty portfolio by intervention mapping model *by Dr. Taghreed Abdulrahman Alnahedh (KSAU-HS, Saudi Arabia).* Topic 11: The use of OCT enhances optometric care *by Dr. Foo Say Kiang (SEGi University, Malaysia).* Topic 12: OCT Angiography (OCTA) *by Asst. Prof. Dr. Aidila Jesmin Jabbari (IIUM, Malaysia).*
1020-1025	*Break & Sponsored Advertisement.*
1025-1040	The Importance of Optometry Services during Movement Control Order *by Asst. Prof. Dr. Md Muziman Syah Md Mustafa, representing the Association of Malaysian Optometrists (AMO).*
1040-1110	**Keynote Lecture 3: Modern intraocular lens designs** ***by Prof. Dr. Phillip Buckhurst (Plymouth University, United Kingdom).***

DAY 2
26 MARCH 2021

1110-1145	Closing Ceremony ● Closing remark by the Organizer Representatives: o *Dr. Naqibah Ghazali (Head of Optometry Unit, HTAA).* o *Mr. Ahmad Fadhullah Fuzai (President, AMO).* o *Prof. Dr. Suzanah Abd Rahman (Dean of Kulliyyah Allied Health Sciences, IIUM).* ● Online photography session.
1145-1155	Presentation of the Winners.
1155-1200	Closing dua recitation.
Onwards to 1600	Oral presentation and poster viewing. End of e-IOVIC 2021.

e-IOVIC
International Optometry & Vision Science Conference

KEY NOTE SPEAKER

Day 1: 25 March 2021
Time: 0900 - 0930

Prof. James Wolffsohn (Aston Research, United Kingdom)

BSc(Hons) PgCertHE PgDipAdvClinOptom MBA PhD PFHEA FSB FAAO FCOptom FIACLE FBCLA

- Following a 1st class Optometry degree from Manchester, a pre-registration year at Moorfield's Eye Hospital, London, a PhD at Cardiff University and a clinical/research fellowship at the University of Melbourne, Australia, Professor Wolffsohn was appointed by Aston University in 2000, where he was Head of Optometry 2004-9 and Deputy Executive Dean for Life and Health Sciences 2009-16, being awarded a personal Chair in 2007. He is now associate Pro-Vice Chancellor. James has published over 215 peer reviewed academic papers and given numerous international presentations. His main research areas are the development and evaluation of ophthalmic instrumentation, contact lenses, intraocular lenses and the tear film. He is the academic Chair of the British Contact Lens Association, having been a past president, was a harmoniser and sub-committee chair for TFOS DEWS II and joint-Chair of the International Myopia Institute reports, and is a chair of BCLA Contact Lens Evidence-based Academic Reports(CLEAR).

ABSTRACT

PROFESSOR WOLFFSON

Diagnosing and Managing Dry Eye

The Tear Film and Ocular Surface Society Dry Eye Workshop (TFOS DEWS II) was a consensus of over 150 global expert clinicians and scientists on dry eye disease, who updated the clinical definition, subclassification, diagnosis and management of the disease as well as updating the related scientific aspects. This presentation will review their findings and subsequent research on how to diagnose and manage dry eye disease. How to incorporate new technology into practice for this purpose to benefit patients will be discussed.

KEY NOTE SPEAKER

Day 2: 26 March 2021
Time: 0900 - 0930

Prof. Dr. Chen Ai Hong
PhD (UNSW, Australia), B.Optom(Hons)(UKMalaysia)
Professor,
Faculty of Health, School of Optometry and Vision Science

- Dr. Chen Ai Hong is a Professor of Optometry at the Universiti Teknologi MARA. She currently holds positions as the Head, Center of Excellence for Research in Optometry & Vision Sciences (iROViS) and the Director, Health & Wellbeing Communities of Research in UiTM. She is Fellow American Academy of Optometry and a Fellow College of Vision Development. She is instrumental in establishing the paediatric optometry practice in Malaysia. She is very involved in the development of the optometry program and has played many different roles in the eye care community in Malaysia through former positions as First elected Chairman for the Head of Optometry Programs Council, council member for the Malaysian Optical Council, committee member for the Joint Technical Committee under Ministry of Higher Education, the expert panel for program accreditation under the Malaysian Qualification Agency, Chairman for the National Contact Lens Exam Questions Formulate Committee, Chairman for the National Contact Lens Practical Exam Committee; as well as Deputy Chairman for the Optometry Way forward Committee under Ministry of Higher Education.

ABSTRACT

PROFESSOR CHEN

Paediatric Vision Care: Doing the right things vs Doing things right

Research thinking mind enhance paediatric vision care practice. Current challenges in paediatric vision care practice will be included. The importance of professional learning in paediatric vision care will be discussed. The difference between doing the right things and doing things right in shaping the future of paediatric vision care will be elaborated. Also incorporate personal sharing of paediatric optometry research development and direction.

e-IOVIC
International Optometry & Vision Science Conference

KEY NOTE SPEAKER

Day 2: 26 March 2021
Time: 1040 -1110

Prof. Dr. Phillip Buckhurst (Plymouth University, United Kingdom)
Professor Of Optometry
School of Health Professions (Faculty of Health)

- Prof. Phillip Buckhurst graduated from Aston University in 2003 with a Degree in Optometry. Following this he practiced in the Northwest region before returning to Aston University in 2007 to complete a PhD in advanced intraocular lens design. After completing his PhD he was appointed as Lecturer in Optometry in Plymouth University where he was a member of a team of academics tasked with developing the new undergraduate Optometry programme. As well as developing the new programme he is actively involved with research examining intraocular lens designs, the mechanism of accommodation and the effect of ocular aberrations.

ABSTRACT

PROF. BUCKHURST

Modern intraocular lens designs

Since the implantation of the first intraocular lens (IOL) in 1949, there have been significant improvements in their design transforming cataract surgery into a precise refractive surgical technique.

In recent years accommodating, multifocal, EDoF and toric IOLs have been developed to reduce spectacle dependence following cataract surgery. With the growing popularity of these IOLs, Optometrists need to be familiar with the optical properties of each lens design in order to address the challenges posed when assessing patients implanted with such IOLs. This presentation will provide an overview of what an optometrist needs to know when assessing a patient implanted with these advanced IOL designs.

PLENARY SESSION 1-
MYOPIA: A GLOBAL PUBLIC HEALTH ISSUE

e-IOVIC
International Optometry & Vision Science Conference

Day 1: 25 March 2021
Time: 0935 -1020

Dr. Monica Jong
B. Optom, PhD
Assistant Professor, Discipline of Optometry, University of Canberra, Australia
Visiting Fellow, School of Optometry and Vision Science, University of New South Wales, Sydney
Secretary of the Refractive Error Working Group, International Agency for the Prevention of Blindness.

- Monica is the Executive Director of the International Myopia Institute (IMI), a working group established after the first WHO-BHVI Meeting on Myopia in 2015. The IMI's mission is to advance myopia research, education and patient management to prevent future vision impairment and blindness from high myopia related complications. Monica has authored numerous peer reviewed publications in the area of myopia and high myopia risk factors, pathology and epidemiology. She co-authored the WHO report on the Impact of Myopia and High Myopia, and was the co-creator of the first global online myopia management education program, and speaks regularly at key international meetings. Monica also enjoys lecturing and mentoring students.

ABSTRACT

DR. JONG

International Myopia Institute – a global perspective

- This talk will provide an overview of the International Myopia Institute (IMI), a global expert group of myopia researchers, and its work in the advocacy of myopia and high myopia as a public health issue. The IMI published landmark white papers in 2019 providing the first evidence-based guidance to practitioners, researchers and policy makers, with a mission to prevent vision impairment and blindness associated with higher levels of myopia. The future directions will also be presented.

Asst. Prof. Dr. Muhammad Afzam Shah Abdul Rahim

PhD (University of Plymouth, UK),
MHSc (Optom)(UKMalaysia),
B.Optom (Hons)(UKMalaysia).

- Dr. Muhammad Afzam Shah is an Assistant Professor at the Department of Optometry and Visual Science, Kulliyyah of Allied Health Science, International Islamic University Malaysia. He previously holds the post of Head, for the Department of Optometry and Visual Science, IIUM and was Chairman for the Head of Optometry Program Council. Although he is not currently holding any administrative post, he is still involved in the Conjoint Contact Lens Committee, Malaysian Optical Council and is a panel for the program accreditation for the Malaysian Qualification Agency. He is very keen in the management of myopia and with the support of DOVS, he established the Myopia Clinic at IIUM. His PhD was in the areas of smart devices and VDT. As part of his PhD training, he invented the Open Field Tear Film Analyzer (OFTA). His current research interests include contact lenses and dry eye, myopia control, the impact of smart devices on visual system and anterior surface of the eye.

ABSTRACT

DR. ABDUL RAHIM

Simplifying Myopia Control: Expediting the explanation process

- Myopia is a pandemic and studies have shown that high myopia increases the risk of serious ocular pathologies such as retinal detachment, cataract, glaucoma and myopic macular degeneration. As such, optometrists had started to incorporate myopia control into their practice repertoire. However, explaining myopia control to parents can be a daunting task. Thus, this talk will emphasize and explain how optometrists can deliver myopia control treatment information effortlessly and efficiently to the parents of myopic children.

Dr. Duratul Ain Hussin
PhD (Queensland University of Technology, Australia),
MHSc (Optom)(UKMalaysia),
B.Optom (Hons)(UKMalaysia).

- Dr. Duratul is an optometrist at the Hospital Sultanah Nur Zahirah Kuala Terengganu. Duratul has a immense interest in Public Health Optometry since she completed her Bachelor Degree. She later pursued Masters Degree in 2005 on research related to pre-school vision screening using Lea Symbols chart. In 2016, she completed PhD at the Queensland University of Technology, Australia where she developed and evaluated two optometric service pathways at the primary and tertiary care levels for effectiveness. Duratul is currently leads the Primary Eye Care Committee of the Ministry of Health Malaysia and the Vice Chairperson for the Amblyopia and Visual Impairment Screening (AVISKKM) program. In 2017, Duratul also established the Cerebral Visual Impairment Clinic at the Hospital Kuala Lumpur, the first of its kind in Malaysia.

ABSTRACT

DR. HUSSIN

Myopia prevention initiatives in the Western Pacific Region: Malaysia

- Prevalence of myopia in Malaysia is 9.8% (7 years old) to 34.4% (15 years old) with substantial proportion of unmet need for refractive error (55%).1 Myopia is expected to affect half of the world's population by 2050, which giving them a higher risk for more serious eye conditions such as glaucoma, cataracts, macular degenerations and retina detachment. Malaysia has been involved in the Global Action Plan for prevention of blindness and vision impairment, in line with Towards Universal Eye Health: A Regional Action Plan for the Western Pacific (2014–2019). In 2018, Malaysia was also included in the joint WHO/International Agency for the Prevention of Blindness (IAPB) Meeting on Developing Myopia Control Strategies to discuss and propose policy development within the region through i) updating existing strategies and approaches to reduce the burden of uncorrected myopia ii) identifying effective activities to address the burden of myopia in countries; and iii) creating partnerships for implementation myopia control and prevention. The outcomes of the meeting were focused in addressing prevention, detection and management of myopia. China, Hong Kong, Singapore and Australia are much advanced than Malaysia as their initiatives are towards controlling progression of myopia through prescription of a breakthrough optical lens and outdoor activities integration into the school's curriculum. In Malaysia however, despite vision screening has been in place since 1967 established under the School Health Team (SHT) program 2 inclusion of Optometrists both at public and private sector is non-structured. Challenges identified include lacking of recent data on myopia, access to cycloplegic refraction and financial barrier to spectacle. Consequently following screening and refraction a child may not get a spectacle, thus uncorrected refractive error remains as hindrance to the effectiveness of the SHT program. In summary whilst Malaysia has incorporated vision screening program for 5 decades, there are still significant gaps in the provision of vision screening, correction of myopia and myopia control. Strategic planning and advocacy work are fundamental in the effort to improve the current program through improving role of optometrists in the refractive services and optical provision.

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International Optometry & Vision Science Conference

PLENARY SESSION 2-

THE REJUVENATION OF OCULAR SURFACE

Day 1: 25 March 2021
Time: 1100 -1145

Asst. Prof. Dr. Mohd Radzi Bin Hilmi
PhD (International Islamic University Malaysia),
M.Optom (UNSW, Australia),
B.Optom (Hons)(International Islamic University Malaysia).

- Dr. Mohd Radzi Hilmi obtained his first degree from International Islamic University Malaysia (IIUM) in 2010 and obtained his Master's degree in Optometry (2011) from University of New South Wales (UNSW), Sydney, Australia. He starts his academia journey as an academic trainee under Department of Optometry and Visual Sciences in 2013 and pursued his PhD in Optometry at IIUM in June 2013 under supervision of Assoc. Prof. Dr. Khairidzan Mohd Kamal. He officially joined the IIUM in June 2016 after completed his PhD and awarded Best Student for PhD in IIUM Convocation 2017. Currently, he is a reviewer for several international indexed journals *Clinical Ophthalmology, International Medical case report Journal* and *Journal of Therapeutics and Clinical Risk Management*. He also has authored and co-authored 20 publications, and awarded *Young Scientist in Optometry* award 2019 by Venus International Foundation. He and his supervisory team successfully develop software for prediction of changes in oculovisual function in pterygium patients based on various pterygium morphology which had won the Silver Medal in International Innovation and Research Exhibition in 2015 which was held at IIUM. His research interest is mainly on the cornea, ocular surface and anterior segment imaging. Presently, He is an Assistant Professor at Department of Optometry and Visual Science of IIUM.

ABSTRACT

DR. HILMI

Demystifying Artificial Tears: The Arts of Prescribing

- Our previous works have shown the importance of clinical application of artificial tears in rejuvenating the ocular surface. This includes aiding optometrists in diagnosing, managing and clinical decision-making based on valid scientific evidence, not based on marketing hype or personal instinct. We have demonstrated with the right concept of selection of artificial tears, it can benefits both patients and optometrists. The aim of this presentations to provide basic knowledge to the audience on what needs to be understand and important criteria in prescribing artificial tears. The concept of application of artificial tears will be briefly demonstrated based on author's own research and scientific evidences.

Dr. Asmah Ahmad
PhD in Optometry (Universiti Kebangsaan Malaysia)
Master Health Sciences Clinical Optometry (Universiti Kebangsaan Malaysia)
B.Optom (Universiti Kebangsaan Malaysia).

- Dr. Asmah Ahmad received her Bachelor Optometry (Hons) at Universiti Kebangsaan Malaysia (UKM) in 2000. She pursued a Master in Optometry degree (UKM) in 2010. Completed PhD (UKM) in 2020. Currently working in Hospital Melaka. Clinical interest in Tears, Cornea and Contact lens management. Like gardening, reading and teaching.

ABSTRACT

DR. AHMAD

Effects Of Silicone Hydrogel Contact Lens On Changes Of Tear Film Lipid Layer, Visual Functions, Ocular Integrity And Comfort Among Silicone Hydrogel Contact Lens Wearers

- Silicone hydrogel contact lenses (SiH CL) are often suggested by Optometrist because of its ability to resolve ocular complications due to hypoxia. Nevertheless, due to hydrophobicity of SiH materials may cause deposition of TFLL on the lens surface that may affected the visual functions and comfort of the wearers that may result symptom dry eye. The purpose of this study is to investigate the effects of SiH on changes of TFLL, visual functions, ocular integrity and comfort in SiH wearers for 12 months. The morphology of the corneal endothelial cells and epithelial cells of the upper tarsal conjunctiva were also examined.

Asst. Prof. Dr. Noor Ezailina Badarudin
PhD (UNSW, Australia),
MHSc (Optom)(UKMalaysia),
B.Optom (Hons)(UKMalaysia).

- Dr. Noor Ezailina obtained her BSc (Hon) and MSc (Health Science), both in Optometry, from UKM and a PhD (UNSW Australia, 2015). She is an Assistant Professor at the Kulliyyah of Allied Health Sciences and currently teaching courses related to contact lens. She supervised two IIUM Masters in Health Science students who graduated in 2016 and 2018. She is a member of the Conjoint Contact Lens Committee of the Malaysian Optical Council of Ministry of Health. She is appointed as an internal auditor for ISO 9001:2015 (2018 &2019) for IIUM.

Dry eye sensation among COVID-19 patients: A review

ABSTRACT

DR. BADARUDIN

- Long duration of online interaction and incorrect fitting of facemask may contribute to dry eye symptoms. Most of the medical personnels as frontliners in combating COVID-19 did not experience DES, while the symptoms of those who experienced DES might be improved by wearing protective glasses. Ocular symptoms are relatively common in COVID-19 disease and may appear just before the onset of respiratory symptoms. Suggested actions to be taken in dealing with medical pathologies of the ocular surface during the COVID-19 epidemic include to postpone the mild to moderate forms of dry eye.

  Ocular symptoms are comparatively common in COVID-19 patients. Appropriate personal protective equipment (PPE) is essential as safeguard against the virus in the clinical setting. Further prospective investigations are important to achieve a better understanding of the effects of COVID-19 on our ocular surface.

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PLENARY SESSION 3-

OCULAR MEASUREMENT AND INVESTIGATIONS

Day 1: 25 March 2021
Time: 1150 -1235

Dr. Mizhanim Mohamad Shahimin
PhD (Cardiff University, Wales, UK)
MHSc (Optom)(UKMalaysia),
B.Optom (Hons)(UKMalaysia).

- Dr. Mizhanim is a Senior Lecturer/Optometrist at Optometry and Vision Sciences Program, Faculty of Health Sciences, Universiti Kebangsaan Malaysia. Apart from her day-to-day clinical and teaching responsibilities, she is passionate in her research on eye tracking and has been appointed as an executive committee member of the Asia Pacific Association for Research on Eye Movements (APAREM). She has strong inter-faculties research collaboration ties (Faculty of Social Sciences & Humanities and Faculty of Engineering & Built Environment (UKM)) as well as with a government agency (MIMOS Berhad). She has also published with Springer International Publishing.

The chronicles of eye tracking: The What? The Why? The How?

ABSTRACT

DR. MOHAMAD SHAHIMIN

- Eye trackers have been widely used to detect, record and study human visual behaviour. The eye tracking technology has decades of history in various research areas such as psychology, ophthalmology and neurology. The early phase of its advent only confined in laboratory usage but has since been implemented for clinical and commercial use. However, the complexity of the instrument and limitation of the technology makes the researchers confounded by its research potentials. Acknowledging these challenges, this talk will give you a walkthrough in planning eye movement research tailored to suit your needs. The issues involving the technical aspects of eye trackers, eye movement parameters to be measured, data recording and data analysis will be discussed. Clinical applications will be briefly presented.

Ms. Noor Halilah Buari
MHSc (Optom)(UKMalaysia),
B.Optom (Hons)(UKMalaysia).

- Ms. Halilah is the Head of Program at Centre for Optometry Studies Faculty of Health Sciences of UiTM where she served for the past 11 years. Her research interest including topics on quality of life, vision rehabilitation, reading and eye movement. She developed Buari-Chen Malay reading chart and SAH Reading passage compendium to be used in assessing reading performance in the clinical setting for various age groups and vision conditions.

ABSTRACT

DR. BUARI

Eye movement behaviour in reading: Does text size matter?

- Reading efficiency is not only of the main concerns among the teachers, publishers, but also eye care practitioners. It gives indirect information on the visual capability to recognise letters and words, undergoes complex cognitive processing and synthesis into speech reading. The size of the text was among factors that might affect the quality of reading. In the investigation of the effect of text legibility, the eye movement behaviour in terms of saccades and fixation were recorded, tracked and analysed. Significant changes in eye movements behaviour in terms of saccades and fixations occurred not only among young readers but also in older readers. The eye movements behaviour showed an adaption to the changes in shape, and size of presented reading materials for better understanding of reading.

Assoc. Prof. Dr. Mohd Zulfaezal Che Azemin

PhD (Royal Melbourne Institute of Technology University),
M.Biomed.Eng. (Monash University),
B.Eng. (Hons)(Multimedia University).

- Associate Prof. Dr. Mohd Zulfaezal Che Azemin received his bachelor's degree in Computer Engineering from Multimedia University and his Master of Biomedical Engineering from Monash University, Clayton Campus. He completed his Ph.D in Biomedical Engineering at RMIT University, Melbourne. His thesis project was on the analysis of retina images at grayscale level using Fourier Fractal Dimension technique for 10-year stroke risk prediction. He is an Associate Professor at the Kulliyyah of Allied Health Sciences teaching Optics, Visual Optics, Ophthalmic Instruments, Health Informatics and Digital Image Processing. He had published works on mimicking clinician's blood vessel tracings and developing a novel fibrovascular grading system based on different color space other than RGB. He is also involved in the development of mobile apps for characterization of blue-blocking lenses and image processing techniques for VOI-based analysis on MRI images. He has authored and co-authored ISI Q1 journals which include IEEE Transaction on Medical Imaging, Neurology, Neurobiology of Aging, Investigative Ophthalmology and Vision Science and Experimental Eye Research. He has also served as a reviewer for numerous indexed journals and international conferences. In 2011, he was appointed as a grant reviewer for the Government of Romania.

ABSTRACT

A/P DR. CHE AZEMIN

Machine Learning in Optometry

- Our previous works have shown the importance of incorporating mathematical models to provide objective quantification in clinical settings. This includes aiding optometrists to make clinical decision based on validated scientific data, not by mere hunches or instincts. We have demonstrated that with the right tool, the application of machine learning – a branch of artificial intelligence – can be leveraged to benefit areas in healthcare including optometry. The aim of this presentation is to provide introductory knowledge to the audience who have little or no knowledge of machine learning with examples of its applications in optometry. To better understand the machine learning concept, hypothetical data of glaucoma cases will be presented. The applications of machine learning in clinical and biomedical domains will be briefly demonstrated based on author's own research and recent examples available from the literature.

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International Optometry & Vision Science Conference

PLENARY SESSION 4-

TECHNOLOGICAL ADVANCES IN OPTOMETRY

Day 2: 26 March 2021
Time: 0935 -1020

Dr. Taghreed Abdulrahman Alnahedh
PhD. (UNSW, Australia),
M.Optom (UNSW, Australia),
BSc.Optom (KSAU, Saudi Arabia).

- Dr Taghreed Alnahedh is a graduate of King Saud University in Riyadh, Saudi Arabia, obtaining a Bachelor of Science in Optometry in 1999. She joined King Khalid Eye Specialist Hospital in Riyadh, Saudi Arabia from (1999-2008) as following: Acting Chief of Optometry Department, member in medical staff meetings, Senior Optometry Specialist, Refraction Instructor for resident ophthalmologists, and Coordinator of optometry intern students training program. In pursuit of her postgraduate education, she obtained a Master of Optometry (2009-2010) and a Doctor of Philosophy (PhD) in evidence based practice in optometry (2010-2014) both from the University of New South Wales in Sydney, Australia. In addition, she obtained a Master of Medical Education (2016-2018) from King Saud bin Abdulaziz University for Health Science (KSAU-HS) in Riyadh, Saudi Arabia. She was appointed as Assistant Professor in optometry (2016 - to present) and to Assistant Dean of Academic Affairs in College of Medicine (2019 - to present) in KSAU-HS in Riyadh, Saudi Arabia. She has been active in teaching, participating in all academic and research activities, and she is currently a member of many committees at KSAU-HS.

ABSTRACT

DR. ALNAHEDH

Implementing digital faculty portfolio by intervention mapping model.

- The Digital Faculty Portfolio (DFP) is an extension of the traditional teaching portfolio. Where teaching portfolios focus solely on teaching and classroom responsibilities, a DFP also includes information on other areas of professional responsibility such as, research, administration, mentorship, committee service, community outreach, etc. The DFP therefore represents a more comprehensive view even than a teaching portfolio, enabling faculty members to document and coordinate all their activities and expanding the scope of the evaluation and promotion process used by administrators. The aims of this project are threefold: first, to test the DFP concept and determine whether faculty find it useful; second, to provide a platform for integrating faculty activities including both teaching and extracurricular activities; and third, to identify key technical details that need to be addressed before a larger-scale DFP platform can be created. We employed a six-phase process through an intervention mapping protocol to address these aims.

Dr. Foo Say Kiang
D.Optom (Aston University),
MHSc Optom (UKMalaysia),
B.Optom (Hons)(UKMalaysia).

- Dr. Foo Say Kiang is the Deputy Dean (Clinical) of Faculty of Optometry and Vision Sciences, SEGi University and also the Chief of General Clinic at SEGi EyeCare Sdn Bhd. With his years of working experience involving co-management with ophthalmologist and undertaking research in post-LASIK patients and glaucoma patients for his master and doctorate degree respectively, Dr Foo has shown a great passion and research interest in glaucoma and ocular surface diseases.

ABSTRACT

DR. FOO

The use of OCT enhances optometric care

- Assessment of ocular health is an essential part of the primary eye examination. The evolvement of optical imaging system such as optical coherence tomography improves the capabilities of optometrist in the detection of eye diseases and minimizes false positive referrals. Optical coherence tomographer is a non-invasive instrument and easily operated. Should OCT imaging be used during optometric examination? Some cases detected during routine optometric examination with the help of OCT are shared in this presentation.

Asst. Prof. Dr. Aidila Jesmin Jabbari
Master in Surgery (Ophthalmology) (UKMalaysia),
M.D (Doctor of Medicine)(UKMalaysia).

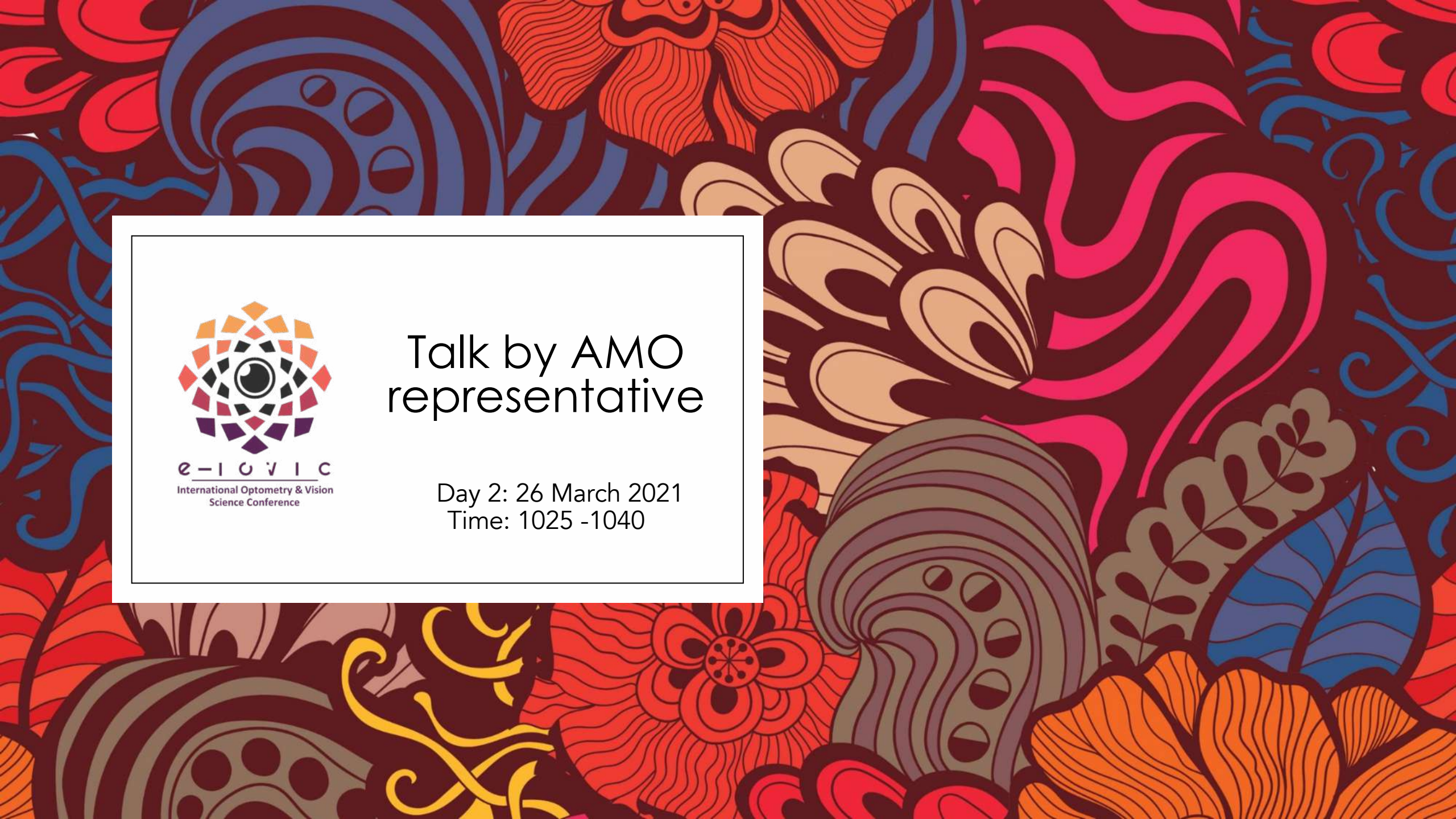
- Dr Aidila graduated with MD from National University of Malaysia in 1996. After completing her Housemanship in Taiping Hospital, she served as Medical Officer in Hospital Kemaman for 3 years. She was conferred her Masters of Surgery in Ophthalmology in 2004. Since then she has worked in multiple hospitals in Malaysia. She successfully completed 3 years subspeciality program in Vitreo-Retina ending with her Vitreo Retinal Fellowship in Singapore. She has been delivering VitreoRetina services to the state of Pahang since 2010. In 2013, she joined IIUM and has provided the bridge between ophthalmology services of Pahang and IIUM. Although she is working in IIUM, she is still servicing vitreo retinal patients at Hospital Tengku Ampuan Afzan (HTAA). In 2014, Department of Ophthalmology of IIUM and HTAA collectively started National Ocular Biometry Course which became a compulsory course for all Masters in Ophthalmology students.

ABSTRACT

DR. JABBARI

OCT Angiography (OCTA)

- OCT Angiography(OCTA) allows us to visualize the retinal and choroidal structures as well the blood flow. It is a fast, non invasive imaging system. As such it has multiple uses in terms of research, diagnosis and monitoring of patients. OCTA allows for early detection of macula ischaemia in the presence of good vision. This would otherwise be missed even with the OCT.



Talk by AMO representative

Day 2: 26 March 2021
Time: 1025 -1040

Asst. Prof. Dr. Md Muziman Syah Md Mustafa
PhD, MHScOptom, BOptom (UKMalaysia)

- Dr. Md Muziman Syah is an Assistant Professor and Postgraduate Coordinator at the Department of Optometry and Visual Science, Kulliyyah of Allied Health Sciences, International Islamic University Malaysia and also a lifetime member of the Association of Malaysian Optometrists (AMO). He is currently one of the Malaysian Qualification Agency panel of assessors for several Optometry programmes in Malaysia. He has authored and co-authored more than 20 publications in academic journals, optometry bulletin, newspapers and magazines. He has also served as reviewer for Elsevier and Dove Medical Press Journals and numerous other indexed journals. His research team successfully developed a formula to determine corneal power for post laser refractive surgery and copyrighted a questionnaire to evaluate surgeon techniques in non-femtosecond laser-assisted cataract surgery. His research interest mainly on ocular surface and quality of vision in refractive surgery. Besides, he flew the *Jalur Gemilang* at Everest BC and Kalapathar Mt. in conjunction with the IIUM Kuantan Silver Jubilee celebration in 2018.

ABSTRACT

DR. MD MUSTAFA

The Importance of Optometry Services during Movement Control Order

On 11 March 2020, the World Health Organization (WHO) announced COVID-19 as a pandemic, continuing the possibility of further global outbreak. Malaysia's government reacted with the implementation of the movement control order (MCO) 1.0 starting from 18 March 2020 as an effort to flatten the curve of COVID-19 cases in the country. Most of the economic sectors have been suspended except for essential services which include healthcare. Although optometrist is one of the healthcare professionals, optometry services in the private sector are ordered to remain closed to the public. The Association of Malaysian Optometrists (AMO) took a prompt initiative by conducting a quick survey on public perspective towards the importance of optometrist roles. This presentation will share the outcome of the survey including vision and eye problems encountered by the public during the MCO.

e-IOVIC
International Optometry & Vision Science Conference

Symposium:

Discovering Lifestyle Incorporated Technology for Modern Urbanites

Frames 'N' Lenses (2008) Sdn. Bhd.

Day 1: 25 March 2021
Time: 1025 -1055

Karen Leong
Registered Optometrist O-01802
BSc in Optometry, National Institute of Ophthalmic Sciences 2015

- Karen Leong is the Professional Services Executive for Frames 'N' Lenses (2008) Sdn Bhd, an ophthalmic lenses distributor company based in Malaysia. She has been working in the optical industry for 5 years, with retail optometry background. Prior to joining FNL, she was a licensed optometrist in optical retail for 4 years after completing Bachelor of Science in Optometry from National Institute of Ophthalmic Sciences(NIOS). Her primary responsibility within FNL is to provide trainings, technical services and support for BBGR and Kodak Lens products. In this position, based on her skills and personal experiences from the past, she has been able to translate these services and supports to the practitioners and consumers.

Candice Choo
Registered Optometrist O-01711
BSc in Optometry, National Institute of Ophthalmic Sciences 2015

- Candice Choo is the Professional Services Executive for Frames 'N' Lenses (2008) Sdn Bhd, an ophthalmic lenses distributor company based in Malaysia. She received her Bachelor of Science in Optometry from National Institute of Ophthalmic Sciences(NIOS). She has been working as a registered optometrist in optical retail for 5 years before joining FNL. Unlike job scopes in optical retail, in FNL, she is providing trainings, technical support and also services to eye care practitioners for BBGR and Kodak Lens products.

ORAL & POSTER PRESENTATION

Day 1 : 25 March 2021

Time : Onwards to 1600

Day 2 : 26 March 2021

Time : Onwards to 1600

POSTER PRESENTATION
TIME: Onwards to 1600 (DAY 1 & DAY 2)

No.	Name	Title	Authors	Affiliation
P001	Asst. Prof. Dr. Md Muziman Syah Md Mustafa	**Axial Length In Keratoconus: Does It Matter?**	Norhafizah Abdul Razak, Syahidatul-Akmal Mohammad Sapian, Rahayu Abdul Hadi, Rossaidah Mustapa, Md Mustafa Md-Muziman-Syah	International Islamic University Malaysia
P002	Asst. Prof. Dr. Md Muziman Syah Md Mustafa	**Accommodative insufficiency management: Does +2.00D ADD work for all?**	Tengku Aida Tengku Abdul Aziz, Najmah Che Abdullah, Nurmizan Hanaffi, Nor Fadilawati Mohd Yusof, Hussein Waheeda-Azwa, Md Mustafa Md-Muziman-Syah	International Islamic University Malaysia
P003	Asst. Prof. Dr. Md Muziman Syah Md Mustafa	**Surgeon Techniques in Non-Femtosecond Laser-Assisted Cataract Surgery (TechNoFLACS) Questionnaire: Face and Content Validation**	Md Mustafa Md-Muziman-Syah, Ahmad Amiruddin Azman, Muhammad Faiz Hakim Zamzuri, Noorhazayti Ab. Halim, Nazaryna Marzuki, Khairidzan Mohd Kamal	International Islamic University Malaysia

POSTER PRESENTATION
TIME: Onwards to 1600 (DAY 1 & DAY 2)

No.	Name	Title	Authors	Affiliation
P004	Mohd Zharif MN	**Retinoscopy Method: On-Axis Versus Off-Axis**	Mohd Zharif MN, Chia YS, Lim SN, Md Mustafa Md-Muziman-Syah	UCSI University
P005	Dr. Wan Syafira Ishak	**Visual Impairment, Hearing Loss and Cognitive Function in a Community-Dwelling Older Adults**	Wan Syafira Ishak, Mah Ho Yan, Mohd Harimi Abd Rahman, Md Mustafa Md-Muziman-Syah	Universiti Kebangsaan Malaysia
P006	Asst. Prof. Dr. Md Muziman Syah Md Mustafa	**Surgically Induced Astigmatism Calculator: Holladay versus Alpins Methods**	Md Mustafa Md-Muziman-Syah, Ahmad Amiruddin Azman, Muhammad Faiz Hakim Zamzuri, Nur Nazihah Md Shakhih, Noorhazayti Ab. Halim	International Islamic University Malaysia

POSTER PRESENTATION
TIME: Onwards to 1600 (DAY 1 & DAY 2)

No.	Name	Title	Authors	Affiliation
P007	Asst. Prof. Dr. Md Muziman Syah Md Mustafa	**Relationship of Variation in Surgeon Phacoemulsification Techniques and Surgically Induced Astigmatism Consistency**	Md Mustafa Md-Muziman-Syah, Ahmad Amiruddin Azman, Muhammad Faiz Hakim Zamzuri, Nur Nazihah Md Shakhih, Noorhazayti Ab. Halim	International Islamic University Malaysia
P008	Asst. Prof. Dr. Md Muziman Syah Md Mustafa	**Intraocular Lens (IOL) Power Selection Pattern Of Two Different Toric IOL Calculators**	Md Mustafa Md-Muziman-Syah, Nur Nazihah Md Shakhih, Ahmad Amiruddin Azman, Muhammad Faiz Hakim Zamzuri, Noorhazayti Ab. Halim	International Islamic University Malaysia
P009	Nur Syahirah Abdul Rahman	**The Mechanical Effect Of Valsalva Maneuver (Vm) On Anterior Lamina Cribrosa: An Analysis Using Swept Source Optical Coherence Tomography (SS-OCT)**	Nur Syahirah Abdul Rahman, Nur Diyana Mohamad Ares, Aina Afiqah Ayob, Firdaus Yusof @ Alias	International Islamic University Malaysia

POSTER PRESENTATION
TIME: Onwards to 1600 (DAY 1 & DAY 2)

No.	Name	Title	Authors	Affiliation
P010	Nur Raihan Esa	**An Exploratory Study Of Optic Nerve Head Vascular Fractal Dimension (Df) And Its Association With Diabetes Mellitus Risk Factors**	Nur Raihan Esa, Nor Azwani Mohd Shukri, Mohd Zulfaezal Che Azemin, Norsham Ahmad, Firdaus Yusof @ Alias	International Islamic University Malaysia
P011	Asst. Prof. Dr. Norsham Ahmad	**Job Satisfaction Among Malaysian Optometrist: Are We In Dilemma?**	Norsham Ahmad, Fatimah Az-Zahra Syukran Jamil	International Islamic University Malaysia
P012	Dr. Mizhanim Mohamad Shahimin	**Unlocking Optical Shop Customers' Shopping Behaviours: Insights from an Eye Tracking Study**	Mizhanim Mohamad Shahimin, Kang Chooi Cheun	Universiti Kebangsaan Malaysia

POSTER PRESENTATION
TIME: Onwards to 1600 (DAY 1 & DAY 2)

No.	Name	Title	Authors	Affiliation
P013	Nor Aishah A Wahab	**Association of Health-Related Quality of Life (HRQoL) with the Severity of Intermittent Exotropia (IXT) in Children and Their Parents**	Nor Aishah A Wahab, Nur Hafiza Mokhtar, Jamalia Rahmat	Hospital Kuala Lumpur
P014	Fatin Amalina Che Arif	**The Effects of Different Physical Properties of Artificial Tears on Subjective Ocular Sensation**	Fatin Amalina Che Arif	International Islamic University Malaysia
P015	Nur Hafiza Mokhtar	**Ocular Alignment After Bilateral Rectus Muscle Recession For Intermittent Exotropia**	Nur Hafiza Mokhtar, Khatijah Mustapa, Fiona LM Chew	Hospital Kuala Lumpur

POSTER PRESENTATION
TIME: Onwards to 1600 (DAY 1 & DAY 2)

No.	Name	Title	Authors	Affiliation
P016	Asst. Prof. Dr. Md Muziman Syah Md Mustafa	The technique of impression cytology in dry eye disease: A review	Md Mustafa Md-Muziman-Syah, Nor Sabrina Sulaiman, Khairidzan Mohd Kamal	International Islamic University Malaysia
P017	Dr. Norlaila Mat Daud	Down Syndrome: What are the possible risk factors of ocular anomalies?	M.D. Norlaila, Faridah Syazwani Mohamad Isa, Juriza Ismail, Nor Azlin Kamal Nor, Adibah Yahya, I. Bashirah	Universiti Kebangsaan Malaysia
P018	Asst. Prof. Dr. Saiful Adli Jamaluddin	Listening Effort Between Auditory-only, Visual-only, and Auditory-Visual Speech Perception in Normal Hearing Listeners as Measured Using Pupillometry	Saiful Adli Jamaluddin, Nur Asyiqin Khairol Azmi, Mohd. Zulfaezal Che Azemin, Nurlin Ali Hanafiah, Greg O'Beirne	International Islamic University Malaysia

POSTER PRESENTATION
TIME: Onwards to 1600 (DAY 1 & DAY 2)

No.	Name	Title	Authors	Affiliation
P019	Shaz' Ain Razak	Patient's Expectation Regarding Comprehensive Eye Examination Among Young Adults In Shah Alam	Samsul bin Supardi, Shaz' Ain Razak, Baqiatul Sabiqi Assfi Rahmat	University Teknologi MARA

Abstract ID : P001	Axial Length In Keratoconus: Does It Matter?

Authors:

Norhafizah Abdul Razak[1], Syahidatul-Akmal Mohammad Sapian[1], Rahayu Abdul Hadi[1], Rossaidah Mustapa[1], Md Mustafa Md-Muziman-Syah[2]

Affiliation:

[1]*Ophthalmology Department, Hospital Raja Perempuan Zainab II, 15586 Kota Bharu, Kelantan, Malaysia.*

[2]*Department of Optometry and Visual Science, Kulliyah of Allied Health Science, International Islamic University Malaysia, 25200 Kuantan, Pahang, Malaysia*

Corresponding Author: Asst. Prof. Dr. Md Mustafa Md-Muziman-Syah

Case Report:

Extreme long axial length is a rare condition characterised by keratoconus (KC) disease. The KC investigation is frequently focused on corneal topography. Contact lens prescription is a successful approach to restore patients' vision by creating a new refractive surface. We herein describe a case of KC with a long axial length. The patient presents a reduced vision due to KC as well as under-correction of axial myopia. This case report highlights the importance of biometry investigation in KC cases when an optimum vision is not achieved with contact lens prescription.

Keywords: extreme axial length, keratoconus, contact lens.

Abstract ID : P002	Accommodative insufficiency management: Does +2.00D ADD work for all?

Authors:

Tengku Aida Tengku Abdul Aziz[1], Najmah Che Abdullah[1], Nurmizan Hanaffi[1], Nor Fadilawati Mohd Yusof[1], Hussein Waheeda-Azwa[1], Md Mustafa Md-Muziman-Syah[2]

Affiliation:

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Corresponding Author: Asst. Prof. Dr. Md Mustafa Md-Muziman-Syah

Case Report:

Maximum addition (ADD) of +2.00D has commonly suggested management for accommodative insufficiency (AI) in ophthalmic literatures. Interesting to be described in this case report, a severe AI associated with convergence insufficiency requires higher ADD than +2.00D. A 27-year female presented with blurry vision, diplopia and eyestrain during near work, and the symptoms are worsening since age of 10. The distance and near visual acuity were 6/6 and N24 respectively, in either eye. The monocular and binocular amplitude of accommodation were 1.00D with -0.50D relative accommodation, 30cm near point of convergence (NPC), 14pd near and 2pd distance phoria (Maddox test), and 14pd near positive fusional vergence. With the prescription of +3.00D ADD, letter “E” push-up and dot-card therapy, the reported-symptoms were alleviated as well as the accommodative and vergence systems improved after a month. This case report presents that the

treatment approach works for severe AI with remote NPC. Therefore it is suggested as initial management prior to further therapy.

Keywords: severe accommodative insufficiency, convergence insufficiency, management

Abstract ID : P003	Surgeon Techniques in Non-Femtosecond Laser-Assisted Cataract Surgery (TechNoFLACS) Questionnaire: Face and Content Validation

Authors:

Md Mustafa Md-Muziman-Syah[1], Ahmad Amiruddin Azman[1], Muhammad Faiz Hakim Zamzuri[1], Noorhazayti Ab. Halim[2], Nazaryna Marzuki[3], Khairidzan Mohd Kamal[4]

Affiliation:

[1]*Department of Optometry and Visual Science, Kulliyyah of Allied Health Sciences, International Islamic University Malaysia, Kuantan, Pahang, Malaysia.*

[2]*Department of Public Health, Kulliyyah of Dentistry, International Islamic University Malaysia, Kuantan, Pahang, Malaysia.*

[3]*Department of Ophthalmology, Sarawak General Hospital, Ministry of Health Malaysia, Kuching, Sarawak, Malaysia*

[4]*Department of Ophthalmology, Kulliyyah of Medicine, International Islamic University Malaysia, Kuantan, Pahang, Malaysia.*

Corresponding Author: Asst. Prof. Dr. Md Mustafa Md-Muziman-Syah

Aims / Background:

Surgeon techniques during cataract surgery is one of the major factors that influence the magnitude and axis of surgically induced astigmatism. Nevertheless, no validated instrument is readily available in documenting the necessary information on surgeon techniques in non-femtosecond laser-assisted cataract surgery (NoFLACS).

The purpose of this study was to validate the Surgeon Techniques in Non-Femtosecond Laser-Assisted Cataract Surgery questionnaire (TechNoFLACS).

Methodology:

Fifteen questionnaire items were developed based on peer-reviewed literatures that included domains related to the surgeon techniques in NoFLACS. Ten subject-matter experts (SMEs) were involved in face and content validations using qualitative and Lawshe's methods, respectively. The items were modified based on comments and suggestions from the SMEs. Content validation ratio (CVR) for each item was calculated. Items that did not achieve CVR value of 1 were removed and final content validity index (CVI) of the TechNoFLACs was obtained.

Results:

Of the 15 items, six items with a CVR of less than 1 were removed (items number: 1, 8, 9, 11,12, 15). The CVI before the items removal was 0.61. After the modification, nine items remained and the final CVI was 1.

Conclusion:

The TechNoFLACS is a valid and reliable tool for documenting the relevant information on surgeon techniques during NoFLACS. Therefore, the TechNoFLACS may useful for research related to surgeon techniques.

Keywords: Surgeon technique, Non-femtosecond laser-assisted cataract surgery, face validation, content validation, questionnaire

Abstract ID : P004	Retinoscopy Method: On-Axis Versus Off-Axis

Authors:

Mohd Zharif MN[1], Chia YS[1], Lim SN[1], Md-Muziman-Syah MM[2]

Affiliation:

[1]*School of Optometry, Faculty of Medicine and Health Sciences, UCSI University, Kuala Lumpur, Malaysia.*

[2]*Department of Optometry and Visual Science, Kulliyyah of Allied Health Sciences, International Islamic University Malaysia, Kuantan, Pahang, Malaysia.*

Corresponding Author: Asst. Prof. Dr. Md Mustafa Md-Muziman-Syah

Aims / Background:

Retinoscopy finding is the key determinant in deciding prescription for low cooperative or unreliable patients. Retinoscopy must be performed on visual axis to obtain an accurate refractive result. However, in unavoidable circumstances such as limited space of refraction room, an off-axis retinoscopy method has been applied. The main objective of this study was to evaluate the difference of on-axis, horizontal off-axis, and vertical off-axis retinoscopy findings in myopes.

Methodology:

This cross-sectional study involved 26 young adult myopes. A total of 9 retinoscopy measurements were performed on-axis, 5- and 10-degree off nasally and temporally along horizontal axis, and 5- and 10-degree off superiorly and inferiorly along vertical axis. All findings were analysed using repeated measure ANOVA.

Results:

There was a significant difference between the retinoscopy measurements on-axis, horizontal and vertical off-axis, $p<0.05$. The 5- and 10-degree off errors along both axes were 0.15D (inferior) to 0.23 D (temporal) and 0.23D (inferior) to 0.38 D (temporal), respectively. The error was higher along horizontal off-axis compared to vertical off-axis. As the angle of displacement increased, the error was significantly increased for horizontal displacement ($p<0.05$) but not for vertical displacement ($p>0.05$).

Conclusion:

Although off-axis retinoscopy showed statistically significant difference from on-axis retinoscopy, the errors of 5-degree off were clinically minimal (<0.25D) along both horizontal and vertical axes. Vertical off-axis were exposed to less error compared to horizontal off-axis. Off-axis retinoscopy method more than 5-degree and along horizontal axis is not recommended and should be avoided.

Keywords: Retinoscopy, Off-axis retinoscopy, On-axis retinoscopy

Abstract ID : P005	Visual Impairment, Hearing Loss and Cognitive Function in a Community-Dwelling Older Adults

Authors:

Wan Syafira Ishak[1], Mah Ho Yan[1,2], Mohd Harimi Abd Rahman[3], Md Mustafa Md-Muziman-Syah[4*]

Affiliation:

[1]*Audiology Program, Centre of Healthy Ageing and Wellness (H-Care), Faculty of Health Sciences, Universiti Kebangsaan Malaysia, Jalan Raja Muda Abdul Aziz, 50300 Kuala Lumpur Malaysia*

[2]*SoundLife Hearing, 47300 Petaling Jaya, Selangor*

[3]*Optometry & Visual Sciences Programme, Centre for Rehabilitation and Special Needs Studies, Faculty of Health Sciences, Universiti Kebangsaan Malaysia, Jalan Raja Muda Abdul Aziz, 50300 Kuala Lumpur Malaysia*

[4]*Department of Optometry and Visual Science, Kulliyyah of Allied Health Sciences, International Islamic University Malaysia, Kuantan, Pahang, Malaysia.*

Corresponding Author: Asst. Prof. Dr. Md Muziman Syah Md Mustafa

Aims / Background:

To determine whether impaired hearing and visual acuity are associated with cognitive dysfunction in older adults.

Methodology:

Data on sociodemographic information, medical history and cognitive function of older adults aged 60 and above from Selangor were obtained through face-to-face interviews using standardized questionnaires. The cognitive

function was measured using the Malay version of Montreal Cognitive Assessment (MoCA-BM). Visual acuity was measured using Early Treatment Diabetic Retinopathy Study (ETDRS) chart while hearing was assessed using pure-tone audiometry.

Results:

From 210 participants, 76.2% (n=160) were found to have hearing impairments only, 10.5% (n=22) with both visual and hearing impairment (dual sensory impairment, DSI) and none with visual impairment only. Binary logistic regression analysis revealed that participants with lower cognitive scores were significantly associated with DSI (OR, 4.00; 95% CI, 1.40-11.42; $p<0.001$).

Conclusion:

Dual sensory impairment is associated with low cognitive scores. Further studies are needed to determine how severity and duration of DSI affect cognitive function.

Keywords: visual impairment, hearing impairment, dual sensory impairment, older adults, cognitive function

Abstract ID : P006	Surgically Induced Astigmatism Calculator: Holladay versus Alpins Methods

Authors:

Md Mustafa Md-Muziman-Syah[1], Ahmad Amiruddin Azman[1], Muhammad Faiz Hakim Zamzuri[1], Nur Nazihah Md Shakhih[1], Noorhazayti Ab. Halim[2]

Affiliation:

[1]*Department of Optometry and Visual Science, Kulliyyah of Allied Health Sciences, International Islamic University Malaysia, Kuantan, Pahang, Malaysia.*

[2]*Department of Public Health, Kulliyyah of Dentistry, International Islamic University Malaysia, Kuantan, Pahang, Malaysia.*

Corresponding Author: Asst. Prof. Dr. Md Mustafa Md-Muziman-Syah

Aims / Background:

Aim of this study was to compare the surgically induced astigmatism (SIA) values produced by Holladay and Alpins method SIA calculators.

Methodology:

This retrospective study involved 80 eyes of 72 subjects who underwent uneventful phacoemulsification cataract surgery. The pre- and post-operative *K*-readings were obtained from the subjects' medical record for individual SIA determination using the SIA2.1 (Holladay method) and VectrAK calculators (Alpins method).

Results:

There was no significant difference between the SIA2.1 and VectrAK calculators in determining individual SIA values ($P = 0.70$). The 95% limits of agreement between these two different method calculators were very tight (0.006 D only).

Conclusion:

Both Holladay and Alpins method SIA calculators provide a comparable SIA value. Hence, Holladay and Alpins method SIA calculators can be used interchangeably.

Keywords: Surgically induced astigmatism, Holladay method, Alpins method

Abstract ID : P007	Relationship of Variation in Surgeon Phacoemulsification Techniques and Surgically Induced Astigmatism Consistency

Authors:

Md Mustafa Md-Muziman-Syah[1], Ahmad Amiruddin Azman[1], Muhammad Faiz Hakim Zamzuri[1], Nur Nazihah Md Shakhih[1], Noorhazayti Ab. Halim[2]

Affiliation:

[1]*Department of Optometry and Visual Science, Faculty of Allied Health Sciences, International Islamic University Malaysia, Kuantan, Pahang, Malaysia.*

[2]*Department of Public Health, Faculty of Dentistry, International Islamic University Malaysia, Kuantan, Pahang, Malaysia.*

Corresponding Author: Asst. Prof. Dr. Md Mustafa Md-Muziman-Syah

Aims / Background:

This study aimed to evaluate the relationship of variation in phacoemulsification techniques practised by surgeon and the surgically induced astigmatism (SIA) consistency.

Methodology:

The phacoemulsification technique variations of four experienced surgeons were evaluated using total variation score (TVS) of PTechSIA questionnaire. Less technique variation was indicated by a lower TVS. SIA coherence of 80 post-phacoemulsification patients were analyzed using SIA Calculator Version 2.1. A higher coherence value indicates better SIA consistency.

Results:

The surgeon with the lowest and highest TVS showed the highest coherence of 90% and lowest coherence of 11%, respectively. Spearman's correlation found a strong negative correlation between SIA coherence and TVS ($r = -0.95$, $p < 0.05$).

Conclusion:

Variation in surgeon phacoemulsification techniques contributes to lower SIA consistency. Therefore, a surgeon is recommended to apply a consistent phacoemulsification technique in every attended case to achieve a better SIA consistency.

Keywords: SIA coherence, SIA consistency, Surgeon phacoemulsification technique

Abstract ID : P008	Intraocular Lens (IOL) Power Selection Pattern Of Two Different Toric IOL Calculators

Authors:

Md Mustafa Md-Muziman-Syah[1], Nur Nazihah Md Shakhih[1], Ahmad Amiruddin Azman[1], Muhammad Faiz Hakim Zamzuri[1], Noorhazayti Ab. Halim[2]

Affiliation:

[1]*Department of Optometry and Visual Science, Kulliyyah of Allied Health Sciences, International Islamic University Malaysia, Kuantan, Pahang, Malaysia.*

[2]*Department of Public Health, Kulliyyah of Dentistry, International Islamic University Malaysia, Kuantan, Pahang, Malaysia.*

Corresponding Author: Asst. Prof. Dr. Md Mustafa Md-Muziman-Syah

Aims / Background:

This study aimed to evaluate the IOL power selection pattern of two commonly-used toric IOL calculators and its agreement in IOL power selection.

Methodology:

Toric IOL power calculations were employed by the Barrett Toric Calculator 2.0 (BTCalc) and ZCalc IOL Calculator 2.2 (ZCalc). Two surgeons with surgically induced astigmatism prediction error (SIA_{err}) < 0.25 D (Group 1) and other two surgeons with SIA_{err} > 0.25 D (Group 2) were involved. Fifty eyes of 46 post-phacoemulsification patients with toric IOL implantation were recruited. Pattern of IOL power selection for each calculator was assessed. The agreement between the calculators was evaluated by limits of agreement (LoA).

Results:

The pattern of IOL power selection for BTCalc was higher IOL toricity resulted in higher IOL spherical equivalent (SE) and vice-versa. These selection patterns were consistent in Group 1 and Group 2. Whereas, the IOL power selection patterns for ZCalc were varied. No consistent pattern was found neither in Group 1 nor Group 2 surgeons. The 95% LoA between the two calculators for Group 1 surgeon showed less than two-step (< ±1.00 D), meanwhile Group 2 surgeon showed more than two-step (> ±1.00 D).

Conclusion:

Both calculators have different IOL power selection patterns and its agreement was low when SIA_{err} > 0.25 D. BTCalc is able to produce a predictable IOL selection pattern and it is therefore suggested toric IOL calculator either for surgeons with SIA_{err} < or > 0.25 D.

Keywords: Toric IOL calculator, IOL power selection pattern, Surgically induced astigmatism.

Abstract ID : P009	The Mechanical Effect Of Valsalva Maneuver (Vm) On Anterior Lamina Cribrosa: An Analysis Using Swept Source Optical Coherence Tomography (SS-OCT)

Authors:

Nur Syahirah Abdul Rahman[1], Nur Diyana Mohamad Ares[1], Aina Afiqah Ayob[1], Firdaus Yusof @ Alias[1]

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Corresponding Author: Asst. Prof. Dr. Firdaus Yusof @ Alias

Aims / Background:

This study was conducted to determine the mechanical effect of Valsalva manoeuvre (VM) on the anterior lamina cribrosa depth (ALCD) using the Swept-Source Optical Coherence Tomographer (SS-OCT) in young, healthy eyes. The ALCD changes (ALCDC) were measured at different time points after the cessation of a controlled VM.

Methodology:

This cross-sectional study included 30 eyes of 30 young and healthy participants. The optic nerve head (ONH) was scanned using Topcon DRI SS-OCT (Topcon, Japan) using the 1 HD-line strategy at a few time points; before VM (baseline), and after VM termination at minutes-zero, -one, -two, -four, -six, -eight and -15. A controlled VM was conducted by sustaining expiratory pressure at 40mmHg for 20 seconds through a rubber tube connected to an aneroid sphygmomanometer. Scanned ONH images were exported into Adobe Photoshop CS3 software for ALCD measurement. The ALCD was taken as the distance from the Bruch's membrane openings to the anterior lamina cribrosa layer. ALCD values for analysis was taken from an average of three measurement points (deepest point, 50µm and 100µm temporal away) in each scan. The ALCDC was taken as an absolute (modulus) value calculated by the difference between |ALCD at each time point and the baseline.

Results:

Twenty-three eyes showed anterior ALCD displacement (towards the cornea) after VM termination. The average ALCDc was the highest at minute-0, 38.01±19.62µm, and consistently decreased to the lowest 2.72±3.20µm at minute-15 ($p<0.001$, RM-ANOVA). Tukey HSD posthoc test showed ALCDC at minute-zero was significantly higher than all time points ($p<0.001$) except to minute-one. The ALCD reverted to the value of the baseline between minute-6 to minute-8.

Conclusion:

VM termination mostly displaced lamina cribosa anteriorly. VM causes displacement of the lamina cribosa even after six minutes of its termination. The mechanical changes elicit by VM may affect the optic nerve bundles hosted by the lamina cribosa.

Keywords: Valsalva manoeuvre, anterior lamina cribrosa depth, swept-source optical coherence tomographer

Abstract ID : P0010	An Exploratory Study Of Optic Nerve Head Vascular Fractal Dimension (Df) And Its Association With Diabetes Mellitus Risk Factors

Authors:

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Corresponding Author: Assoc. Prof. Dr. Mohd Zulfaezal Che Azemin

Aims / Background:

Undiagnosed diabetes mellitus (DM) in the world's population is expected to increase. Screening for individuals with risk of developing DM may help early detection to prevent diabetic retinopathy. Smartphone-assisted fundus photography (SAFP) may be a valuable screening tool to detect early retinal DM-related changes. Digital retinal images captured by SAFP has been shown as reliable in evaluating retinal vascular complexity using fractal dimension (Df) analysis. This exploratory, cross-sectional study was conducted to compare the optic nerve head (ONH) vascular Df between individuals with and without DM-risks using images taken by SAFP.

Methodology:

Ninety participants comprising of 45 individuals with and without risk of DM were recruited. The Diabetes Risk Test Questionnaires (DRTQ; American Diabetes Association (2018a)) was adopted to classify participants into the previously mentioned groups. Retinal images from one eye were taken from each participant using SAFP, which comprised a smartphone (Samsung SM-G925F, Samsung C&T Corp., Seoul, Republic of Korea) and the Portable Eye Examination Kit Retina camera adaptor (Peek Retina™, Peek Vision Ltd, UK). Images with a good focus centred on ONH and significant blood vessel visibility were taken for fractal dimension (Df) analysis. Images were cropped 0.5 disc diameters away from disc margin and resized to 500x500 pixels using GNU Image Manipulation Program Version 2.8.18 (GIMP, The GIMP Team, United States). Retinal vessels were manually traced for blood vessel segmentation using the layering capabilities of GIMP. Df values of segmented blood vessels were measured using Image J (National Institutes of Health, USA) and its plugin software, FracLac Version 2.5. Independent t-test and ANCOVA were used to compare the retinal vascular Df values between the risked- and non-risked groups and explore the association between DM risk factors and Df values.

Results:

There was no significant difference in ONH vascular Df values between risked- and non-risked DM groups. No association between the ONH vascular Df and DM risk factors were detected.

Conclusion:

Retinal vascular complexity between individuals with and without risk factors of DM showed no difference. The ONH retinal vascular complexity between individuals with and without risk factors of DM showed no difference. DM risk factors did not influence ONH vasculatures and may suggest for investigation on other retinal loci.

Keywords: Smartphone-assisted fundus photography, fractal dimension analysis, Diabetes Risk Test Questionnaires

Abstract ID : P0011	Job Satisfaction Among Malaysian Optometrist: Are We In Dilemma?

Authors:

Norsham Ahmad[1], Fatimah Az-Zahra Syukran Jamil[1]

Affiliation:

[1]*Department of Optometry and Visual Science, Kulliyyah of Allied Health Sciences, International Islamic University Malaysia.*

Corresponding Author: Asst. Prof. Dr. Norsham Ahmad

Aims / Background:

Several studies had evaluated the job satisfaction level among healthcare workers, but there has not been any study that assessed job satisfaction of optometrists in different work environments. How satisfied are Malaysian optometrist with their workplace? What are the factors that influence job satisfaction amongst optometrists? This cross-sectional survey aims to clarify above questions.

Methodology:

The questionnaire used is adapted from previous studies with some modification. Internal consistency reliability was determined prior to data collection. Cronbach's alpha reliability coefficient value was 0.9, which shows good reliability. Data from 256 optometrists from different workplace were analysed.

Results:

The overall level of job satisfaction among optometrists was in a moderate satisfaction range (mean:4.51±0.08). Workplace facilities were rated the highest among other facets (mean:4.71±0.08), whereas promotional opportunities were the lowest (mean: 4.21±0.09). The Kruskal-Wallis analysis showed significant differences in overall satisfaction in the different workplace, $\chi 2(3, N = 256) = 11.309$, $p<0.05$. Workplace facilities, $\chi 2 (3, N = 256) = 18.787$, $p<0.05$, and recognition, $\chi 2 (3, N = 256) = 11.240$, $p<0.05$, were found to statistically and significantly influence the job satisfaction among optometrists. Dunn's post-hoc test with Bonferroni correction showed that hospitalbased optometrists are significantly satisfied with their job ($p<0.05$), specifically on workplace facilities ($p<0.05$) and recognition ($p<0.05$).

Conclusion:

Malaysian optometrists were moderately satisfied with their job and hospital-based workplace could offer better job satisfaction as compared to others. In which this setting could provide sufficient facilities and better recognition.

Keywords: optometrist, job satisfaction, questionnaire, recognition.

Abstract ID : P0012	Unlocking Optical Shop Customers' Shopping Behaviours: Insights from an Eye Tracking Study

Authors:

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Corresponding Author: Dr. Mizhanim Mohamad Shahimin

Aims/Background:

We investigated optical shop customers' eye movements whether their shopping behaviours were influenced by in-store or out-of-store visual attention factors (VAF), or both. The VAF which relates to buying decision explored in this study were the spectacles' brand, price and spectacle design and the promotion banner. There is limited research on actual browsing and purchasing behaviour and the elements that may influence behaviour in optical stores from first-person observational input. Thus, this research integrates the use of eye tracker to assess VAF in a retail environment.

Methodology:

Thirty customers (age range: 20-59 years) of an optical shop participated in this study. All participants were naïve to eye tracking procedures. A set of stimuli consisted of in-store and out-of-store photos of an optical shop was displayed on an eye tracker screen (Tobii TX300). Participants were asked to choose the most preferred spectacles to buy from the stimuli displayed. The eye tracker captured the eye movement during the selection process. The relationship between time-to-first-fixation and fixation duration recorded from VAF were analysed using the eye tracker (quantitative data) and were correlated with the heat maps data (qualitative data).

Results:

Findings showed that participants looked at spectacle designs significantly more ($p<0.001$) than other factors (brand, price and promotion banner). Results also showed that participants tend to fixate on instore VAF significantly more ($p<0.001$) compared to out-of-store VAF. The heat maps shows most concentrated fixations were at the primary gaze, which could be use as strategy in marketing.

Conclusions:

The spectacle design was an important factor in participants' selection behaviour while shopping for their preferred spectacles. Other factors have minimal influence in the shopping behaviour.

Keywords: eye tracking, in-store visual attention factors, out-of-store visual attention factors, optical shop

Abstract ID : P0013	Association of Health-Related Quality of Life (HRQoL) with the Severity of Intermittent Exotropia (IXT) in Children and Their Parents

Authors:

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Affiliation:

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Corresponding Author: Nor Aishah A Wahab

Aims / Background:

To evaluate the relationship of Health-Related Quality of Life (HRQoL) with the severity of intermittent exotropia (IXT) in children and their parents.

Methodology:

44 children (aged 5-17 years) with IXT and one parent (proxy) for each child were recruited to this prospective study. The severity of IXT (magnitude of IXT, stereovision, sensory fusion, and the Newcastle Control Score (NCS)) were measured. HRQoL of IXT children and their parents were assessed using the Intermittent Exotropia Questionnaire (IXTQ - Child, Proxy, Parent Psychosocial, Parent Function, and Parent Surgery subscales). All IXTQ questionnaires were scored using an established Rasch look-up table and converted to a 0-100 scale. A Spearman's rho correlation was run to determine the relationship between the severity of IXT and IXTQ scores.

Results:

There was a significant correlation between Proxy IXTQ score and the NCS at home (r_s = -0.299, p = 0.048). Parent Surgery IXTQ score were significantly correlated with IXT magnitude at near (r_s = 0.365, p = 0.015) and at distance (r_s = 0.322, p = 0.033), distance fusion (r_s = 0.364, p = 0.015), and the NCS at home (r_s = 0.326, p = 0.031). Parent overall IXTQ score was significantly correlated with distance fusion (r_s = 0.309, p = 0.041). Lower proxy HRQoL was associated with poorer IXT control at home in children with IXT. Parent surgery IXTQ score increased as the magnitude of IXT (near & distance) increased.

Conclusion:

Parents' (proxy) HRQoL was associated with severity of IXT. Our study suggest that parents preferred squint surgery to be performed if their child has a larger magnitude of IXT.

Keywords: Intermittent Exotropia, IXT Questionnaire, Newcastle control score

Abstract ID : P0014	The Effects of Different Physical Properties of Artificial Tears on Subjective Ocular Sensation

Authors:

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Affiliation:

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[2]Department of Ophthalmology, Kulliyyah of Medicine, International Islamic University Malaysia.

Corresponding Author: Asst. Prof. Dr. Mohd Radzi Hilmi

Aims / Background:

To evaluate the effects of different physical properties of artificial tears (ATs) on subjective ocular sensation using Systane Hydration preservative (SH) and non-preservative (SHUD), Optive preservative (O) and non-preservative (OUD) in normal and suspected dry eye (SDE) group.

Methodology:

30 participants involved in this prospective, double-masked randomized study. Rheometer and digital pH-meter were used to evaluate the viscosity and pH of all ATs. Participants were divided into normal and suspected DE group based on Ocular

Surface Disease Index (OSDI) score. Ora Calibra™ Ocular Discomfort and 4-Symptom Questionnaire (OOD4SQ) was used to evaluate ocular discomfort between pre and post-instillation (after 60 minutes interval). Drop comfort immediately evaluated after instillation using Ora Calibra™ Drop Comfort Scale (ODCS). Drop comfort score (DCS) between all ATs were analysed using One-way analysis of variance (ANOVA), while ocular discomfort (OOD4SQ) was analysed using paired T-test. Level of significance was set at 0.05.

Results:

Viscosity of ATs were; SHUD: 32.73cP, SH: 26.7cP, OUD: 14.42cP and O: 13.88cP with pH of 7.74 (SHUD), 7.85 (SH), 7.19 (OUD) and 7.24 (O). Highest DCS was found in SHUD (2.07±1.792) for suspected DE group and SH (2.27±1.751) for normal group. Significant reduction in dryness ($p<0.05$) was found for all ATs in both groups except OUD. Significant reduction of overall discomfort was observed in suspected DE group after instillation of O and SHUD, while in normal group, O, OUD and SH significantly improved the overall discomfort after 60 minutes instillation.

Conclusion:

Optive showed better ocular comfort and less subjective sensation compared to other tested ATs.

Keywords: artificial tears, ocular sensation, ocular discomfort

Abstract ID : P0015	Ocular Alignment After Bilateral Rectus Muscle Recession For Intermittent Exotropia

Authors:

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[2]*Ophthalmology Department, Hospital Selayang.*

Corresponding Author: Nur Hafiza Mokhtar

Aims / Background:

Intermittent exotropia (IXT) is a common type of strabismus where there is an intermittent outward deviation of the eyes. Aim of this study is to assess post surgical ocular alignment and to evaluate changes in the deviation angle over a 12-months period in patients who underwent surgical intervention for IXT.

Methodology:

Retrospective cohort study of patients who underwent bilateral lateral rectus recession performed by a single surgeon in 2018. Demographic details, pre and post surgical exotropic angle measurements were recorded. Patients were assigned based on their motor success. A post surgical ocular deviation angle of orthophoria, exo-deviation or eso-deviation of less than 10 prism diopters (PD) was classified as success while the remaining subjects were assigned to the failure group.

Results:

A total of 41 subjects, aged between 2 to 67 years old (mean age of 14.4 years, SD 15.65) were recruited. There were 46.3% females and 53.7% males. Majority subjects were Malay (73.2%), Chinese (26.8%). Motor success was achieved in 29 (75.6%), recurrence in 22.0% and overcorrection in 2.4% subjects. There was a good correlation between ocular alignment at 6 and 12 months post-surgery(ρ= 0.53, P <0.05). There was no significant difference in the mean deviation magnitude over a 12-months period post-surgery (F(1.266, 50.631)= 0.227, P<0.001).

Conclusion:

The good success rate and stability in the ocular alignment suggests strabismus surgery as a good treatment for intermittent exotropia patients.

Keywords: Intermittent Exotropia, Surgery,Strabismus

Abstract ID : P0016	The technique of impression cytology in dry eye disease: A review

Authors:

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Affiliation:

[1]*Department of Optometry and Visual Science, Kulliyyah of Allied Health Sciences, International Islamic University Malaysia, Kuantan, Pahang, Malaysia.*

[2]*Department of Ophthalmology, Kulliyyah of Medicine, International Islamic University Malaysia, Kuantan, Pahang, Malaysia.*

Corresponding Author : Asst. Prof. Dr. Md Mustafa Md-Muziman-Syah

Aims / Background:

Impression cytology (IC) is a useful technique to assess the epithelial cells morphology changes in dry eye disease (DED). This review evaluated the IC techniques and their advantages in accessing DED.

Methodology:

A literature search identifying IC technique articles in assessing the conjunctival morphology changes in DED via Pubmed, Scopus and Springer search engines.

Results:

A total of 27 articles identified as relevant to the search criteria. The superior bulbar conjunctiva was the most selected location to collect IC specimens. The most commonly used filter material was cellulose acetate with 0.22 µm pore size. The fixation frequently performed using a mixture of ethyl alcohol, formaldehyde, and glacial acid with a ratio of 20:1:1. The specimens were commonly stained with periodic acid Schiff (PAS) and counterstained with haematoxylin and eosin. The specimens were viewed under a light microscope to quantify the goblet cell density, the cytoplasm diameter, nucleus to the cytoplasm ratio of non-secretory cells and presence of nuclear chromatin. The grading was carried out using validated grading scales such as the Nelson scale.

Conclusion:

This review concluded that cellulose acetate paper of a 0.22 µm pore size is sufficient for specimen collection observing cellular morphology changes. The fixation using ethyl alcohol, formaldehyde and glacial acid mixture (20:1:1) works well with conjunctival cell. The PAS staining, haematoxylin and eosin as staining enable highlighting all the epithelial cell and goblet cell structures. Nelson's grading is suggested for grading purpose to assess the conjunctival epithelial morphology in DED studies.

Keywords: impression cytology, dry eye

Abstract ID : P0017	Down Syndrome: What are the possible risk factors of ocular anomalies?

Authors:

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Affiliation:

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Corresponding Author: Dr. M.D. Norlaila

Aims / Background:

The aim is to determine the possible risk factors that associated with the cases of ocular anomalies among Down Syndrome patients in Hospital Tuanku Muhriz.

Methodology:

This retrospective study involves 97 patients who had attended the Child Development Clinic in Hospital Canselor Tuanku Muhriz, Cheras, Kuala Lumpur.

Results:

About 54.6% were recorded to have ocular anomalies with astigmatism was 39.4%, followed by hyperopia with 28.7%. Myopia, anisometropia and strabismus had similar percentages with 11.7% and the nystagmus were only reported with 6.4%. Result showed no statistically significant association between the risk factors of advanced maternal aged (p=0.574), advanced paternal age (p=0.591), history of fetal death (p=0.579) and history of maternal illness during gestation period (p=0.843) with the ocular anomalies. However, the subjects with the maternal history of fetal death had showed 44% more likely to have risk of ocular anomalies than the Down Syndrome patients to the mother who do not have the fetal death history.

Conclusion:

The maternal age, paternal age, history of abortions or stillbirths and history of maternal illness during the pregnancy of Down Syndrome infants were not associated with the presentation of the ocular anomalies among Down Syndrome.

Keywords: Risk factors, Down Syndrome, ocular anomalies

Abstract ID : P0018	Listening Effort Between Auditory-only, Visual-only, and Auditory-Visual Speech Perception in Normal Hearing Listeners as Measured Using Pupillometry

Authors:

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[2]*Department of Optometry and Visual Sciences, Kulliyyah of Allied Health Sciences, International Islamic University Malaysia, Kuantan, Pahang, Malaysia.*

[3]*Department of Speech and Hearing, School of Psychology, University of Canterbury, New Zealand.*

Corresponding Author: Asst. Prof. Dr. Saiful Adli Jamaluddin

Aims / Background:

Listening effort is the purposeful allocation of the mental resources used to overcome difficulties when listening to speech in a noisy environment. Increased cognitive load may result in decreased speech perception performance and mental fatigue. Pupillometry can be applied to investigate listening effort where changes in pupil diameter can be measured as a function of cognitive load. This study aims to establish the baseline of listening effort in normal hearing young listeners in three modalities of speech perception which are auditory-only (A-only), visual-only (V-only), and auditory-visual (AV).

Methodology:

In total, 10 participants aged between 22 and 25 years old with normal hearing were recruited in this study. The peak pupil dilation (PPD) and peak latency were recorded throughout speech perception trials which were presented monaurally in three different modalities: auditory-only, visual-only, and auditory-visual speech perception at three different signal-to-noise ratios (SNR).

Results:

The PPD were largest in A-only modality at low SNRs. In contrast, no effect of PPD were observed in AV and V-only across SNRs. The peak PPD latency across SNRs in AV were inconsistent with previous studies. The finding suggests that the PPD increased significantly with decreasing SNR in A-only modalities.

Conclusion:

The finding of this study showed PPD, and peak latency systematically increases as SNR decreases in A-only modality, revealing more cognitive effort is exerted at acoustically demanding conditions. Additional data may help to further explore the relationship between listening effort and speechreading.

Keywords: Listening effort, pupillometry, speech perception

Abstract ID : P0019	Patient's Expectation Regarding Comprehensive Eye Examination Among Young Adults In Shah Alam

Authors:

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Affiliation:

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[2]*Centre of Optometry Studies, MARA University of Technology, Malaysia.*

Corresponding Author: Shaz' Ain Razak

Aims / Background:

Understanding patient's expectation is the key element in delivering a high quality eye care services. Previous expectation studies have been focused on primary care settings and special cluster, yet little is known about local young adults expectations in an eye care. Therefore, the aim of this research is to investigate the expectation regarding comprehensive eye examination among young adults in Shah Alam.

Methodology:

A cross-sectional study was conducted to investigate the patient's expectation on comprehensive eye examination by using Eye Care Expectation Survey (ECES). It consists of socio-demographic question in part one and factors contributes to eye care expectation survey in part two. ECES was distributed to two groups, those who have attended and those that have not attended comprehensive eye examination in Shah Alam.

Results:

A total of 206 has participated in this study with mean age of 22.42 ± 2.76 years, 64 (31.1%) of the participants are males and 142 (68.9%) are females. From this study, 113 (54.9%) have attended while 93 (45.1%) have not attended comprehensive eye examination. Overall, communication and clinical competence is the highest factor (35.3%) followed by information about diagnosis and prognosis (29%), interpersonal manner (18%) and patient involvement in eye care (14.6%). Among all factors of eye care expectation, all factors shows significance association between attended and non-attended eye examination ($p<0.05$) except on the interpersonal manner.

Conclusion:

In conclusion, communication and clinical competence is the important factor that patient anticipate in comprehensive eye examination. Thus, addresing the patient's expectation will assist in adherence of treatment given.

Keywords: Patient's expectation, Eye examination, Eye care

ORAL PRESENTATION
TIME: Onwards to 1600 (DAY 1 & DAY 2)

No.	Name	Title	Authors	Affiliation
O001	Khairunisya Sofia Mohd Yusoff	**The Association Between Visual Function Measurement And Visual Function Questionnaire Among Learner's Driving Holders In Beserah, Kuantan**	Khairunisya Sofia Mohd Yusoff, Siti Nur Athira Abdul Rashid, Nur Atikah Saifudin, Noor Ezailina Badarudin	International Islamic University Malaysia
O002	Ain Syafa Nabila Hashim	**Perceptions About Refractive Errors Among Orang Asli Adults In Kuantan, Pahang: A Grounded Theory Analysis**	Ain Syafa Nabila Hashim, Azuwan Musa	International Islamic University Malaysia
O003	Farah Hanis Saipul	**Analysis Of Vision Screening Among Kuantan Population**	Farah Hanis Saipul, Norsham Ahmad	International Islamic University Malaysia
O004	Norfasihah Anis Ahmad Fadzil	**Patients' Flow In IIUM Optometry Clinic**	Norfasihah Ahmad Fadzil, Norsham Ahmad	International Islamic University Malaysia

ORAL PRESENTATION
TIME: Onwards to 1600 (DAY 1 & DAY 2)

No.	Name	Title	Authors	Affiliation
O005	Ainul Hana Mohd Zuhairi	**Perceptions About Spectacle Use Among Orang Asli Population In Kuantan, Pahang: A Grounded Theory Analysis**	Ainul Hana Mohd Zuhair, Azuwan Musa	International Islamic University Malaysia
O006	Husni Zaim Zakaria	**Transferring Optical Knowledge Of Retinal Hazard Of Blue-blocking Lenses**	Husni Zaim Zakaria, Mohd Zulfaezal Che Azemin	International Islamic University Malaysia
O007	Intan Nordina Sadli	**The Reliabilty Of The Illuminated Eye Chart (Model No. 16500)**	Intan Nordina Sadli, Norsham Ahmad	International Islamic University Malaysia
O008	Puteri Nur Liyana Syairah Zainal Abidin	**Comparison Of Tear Meniscus Height (Tmh) And Schirmer Test Value Between Dry Eye And Nondry Eye Subjects Based On Asian Dry Eye Society (Ades) 2017 Definition**	Puteri Nur Liyana Syairah Zainal Abidin, Mohd Hafidz Bin Ithnin	International Islamic University Malaysia

ORAL PRESENTATION
TIME: Onwards to 1600 (DAY 1 & DAY 2)

No.	Name	Title	Authors	Affiliation
O009	Nur 'izzati Sidek	**The Repeatability Of Smith's Method In Measuring Anterior Chamber Depth**	Nur 'izzati Sidek, Firdaus Yusof @ Alias	International Islamic University Malaysia
O010	Rabiatul Adawiyah Zuhairi	**Barriers To Utilization Of Eye Care Services Among Orang Asli Adults In Kuantan, Pahang: A Grounded Theory Analysis**	Rabiatul Adawiyah Zuhairi, Azuwan Musa	International Islamic University Malaysia
O011	Nur Iffah Izzaty Zolkifli	**The Immediate Effect On Non-preservative Hyaluronic Acid And Carboxymethylcellulose Sodium (Cmc) Eye Drop On Tear Film Quality And Patient Sensation**	Nur Iffah Izzaty Zolkifli, Mohd Radzi HIlmi	International Islamic University Malaysia

ORAL PRESENTATION
TIME: Onwards to 1600 (DAY 1 & DAY 2)

No.	Name	Title	Authors	Affiliation
O012	Nurul Shahirah Zainudin	**Comparison Of Lissamine Green Test Score And Tear Lipid Floating Time Among Normal And Dry Eye Subjects Based On Asian Dry Eye Society (Ades) 2017 Definition**	Nurul Shahirah Zainudin, Mohd Hafidz Ithnin	International Islamic University Malaysia
O013	Izyan Syazni Azmir	**Reproducibility And Repeatability Of Aberration Measurements In Myopic Eyes**	Izyan Syazni Azmir, Mohd Radzi Hilmi	International Islamic University Malaysia
O014	Nursyahidatul Fasha Rosley	**The Association Between Visual Performance With Aberration Using Quality Of Life Of Refractive Correction (Qirc) Questionnaire In Moderate And High Myopic Patients**	Nursyahidatul Fasha Rosley, Mohd Radzi Hilmi, Md Mustafa Md-Muziman-Syah	International Islamic University Malaysia

ORAL PRESENTATION
TIME: Onwards to 1600 (DAY 1 & DAY 2)

No.	Name	Title	Authors	Affiliation
O015	Zafira Khairunnisa Zaman	**The Immediate Effect Of A Preservative Hyaluronic Acid And Carboxymethylcellulose Sodium Eye Drop On Tear Film Assessment And Subjective Response**	Zafira Khairunnisa Zaman, Mohd Radzi Hilmi	International Islamic University Malaysia
O016	Mohammed A. Aljarousha	**Dry eye syndrome: A review on prevalence and risk factors in the Arab world**	Mohammed A. Aljarousha, Noor E. Badarudin, Mohd Z. Che Azemin, Yousef Aljeesh, Amer Abuimara, Muhammed Afzam Abdul Rahim	International Islamic University Malaysia
O017	Effendy Hashim	**The Perspective of Ophthalmologists, Optometrists and Opticians on Refraction for Children in Kuala Lumpur – A Mixed-Method Study**	Effendy Hashim, Mahani Mohd Salleh, Nurulain Mat Zin, Waheeda Azwa Hussein	Hospital Pulau Pinang

ORAL PRESENTATION
TIME: Onwards to 1600 (DAY 1 & DAY 2)

No.	Name	Title	Authors	Affiliation
O018	Dr. Mohd Harimi Abd Rahman	**A Pilot Study on Driving Difficulties Among Bilateral Cataract Patients**	Mohd Harimi Abd Rahman, Haliza Abdul Mutalib, Nurul Hafizah Mohd Norizan, Md Mustafa Md-Muziman-Syah	Universiti Kebangsaan Malaysia
O019	Nur Amalina Md Isa	**The Impact of E-Cigarette Smoking and Vaping Voltage on Tear Film**	Nur Amalina Md Isa, Pavithra Doraj, Koh Poh Yi	International Islamic University Malaysia
O020	Waheeda Azwa Hussein	**Development And Validation Of Quality Of Life Questionnaire In Infantile Esotropia: Parents Version**	Hussein Waheeda-Azwa, Norul Badriah Hassan, Sarimah Abdullah, Jemaima Che Hamzah, Ismail Shatriah	Hospital Raja Perempuan Zainab II

ORAL PRESENTATION
TIME: Onwards to 1600 (DAY 1 & DAY 2)

No.	Name	Title	Authors	Affiliation
O021	Nurul Ain Yahaya	**Implementing Primary Eye-care in Private Practices Malaysia; The Internal Challenges perceived by the Optometrists**	Nurul Ain Yahaya, Azuwan Musa, Nor Azlina A. Rahman	International Islamic University Malaysia
O022	Noorshazana Mat Rejab	**In-Vivo Confocal Microscopy: Keratocytes Cell Density (KCD) Regeneration Between Femtosecond LASIK (FS-LASIK) And Photorefractive Keratectomy (PRK)**	Noorshazana Mat Rejab	UCSI University

Abstract ID : O001	The Association Between Visual Function Measurement And Visual Function Questionnaire Among Learner's Driving Holders In Beserah, Kuantan

Authors:

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Affiliation:

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Aims/Background:

To investigate the association between visual function measurements and visual function questionnaire among Learner's Driving License (LDL) holders in Beserah, Kuantan, and to identify the visual function status among the LDL holders in Beserah, Kuantan.

Methodology:

A total of 139 LDL holders who were attending driving classes in East Coast Driving Academy (ECDA), Beserah, Kuantan were selected as participants. They recorded their responses in a Jotform consisting of 5 self-reported Visual Function Questionnaire (VFQ) that are related to driving. This was followed by measuring their visual acuity (VA) using Snellen chart, colour vision (CV) using Ishihara Plates and stereopsis using Stereo Fly Test.

Results:

A significant positive correlation between VA and VFQ related to driving in daytime (r_s = 0.267, ρ <0.05) and driving at night, at usual places (r_s = 0.182, ρ < 0.05). However, there is no significant correlation between VA and VFQ related to driving in bad weather (r_s = -0.035, ρ >0.05). It was also discovered that there is a significant negative association between CV and VFQ related to colour matching (r_s = - 0.290, ρ<0.05). For visual function status, 94.2% of the participants have VA of 6/12 and better (Snellen 6/12 in the best-corrected eye). 96.4% passed the CV test. Also, 82.0% has good stereopsis (50sec of arc and better).

Conclusions:

Only 2 questionnaires are valid to be used as screening tools to detect visual impairment, which are the VFQ related to driving in daytime and at night, at usual places. It is also crucial to perform precise tests in visual screening prior to getting a driving license, to improve LDL's holders driving performance, for their safety and other road users too.

Keywords: Driving; Visual acuity; Colour vision; Visual function status; Visual function questionnaire; Visual screening

Abstract ID : O002	Perceptions About Refractive Errors Among Orang Asli Adults In Kuantan, Pahang: A Grounded Theory Analysis

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Corresponding Author: Asst. Prof. Dr. Azuwan Musa

Aims/Background:

This research aim is to investigate the understanding and perceptions of Orang Asli adults in Kuantan, Pahang about refractive errors.

Methodology:

Six villages of Orang Asli in Kuantan, Pahang were selected, and two persons were interviewed from each villages. The concept and key word from the interview were being identified and combined to be grouped up into one specific characteristic and categories.

Results:

Theoretical conceptualization that describes perceptions and knowledge of Orang Asli adults regarding refractive errors were obtained which are definitions, types, causes, effects on daily activities and treatments.

Conclusion:

Orang Asli has acceptable knowledge and understanding regarding the refractive errors as many of the answers can be answered correctly.

Keywords: Orang Asli, refractive errors, visual impairment

Abstract ID : O003	Analysis Of Vision Screening Among Kuantan Population

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Aims/Background:

The purposes of this study were to determine the percentage of failure rate from vision screening by age class and to determine the percentage of patients turn-up after referral from vision screening conducted among the Kuantan population for further eye examinations.

Methodology:

All the data from vision screening forms conducted from 2017 to 2019 by IIUM Kuantan Optometry Clinic were retrospectively reviewed to determine the failure rate from vision screening tests. The patients turn up after referral was determined through the appointment books.

Results:

Out of 1276 patients screened, 52.04% (664) were referred. Referral rate for paediatrics age class group was 51.05% (339). The referral rate for adults was 31.95% (108). 76.89% (183) of the middle age group were referred whilst 94.44% (34) of the 65 years old and older failed vision screening. The highest patients' turn up rate was from paediatrics (30.09%), followed by the middle age group (16.94%), adult group (14.81%) and the 65 years old and older group (5.88%). In 2017 patients' turn up rate was 10.37%, 22.32% in 2018 and 28.72% in 2019. Overall, patients' turn up rate is low but shows positive increment over the years.

Conclusion:

To improve patient education and clinic efficiency for vision screening referral system to increase the number of patients' turn up.

Keywords: Vision screening, referral, patients turn up, failure rate

Abstract ID : O004	Patients' Flow In IIUM Optometry Clinic

Authors:

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Aims/Background:

This study aims to determine the number of visits in each clinic which includes first and follow-up visits from 2014 to 2018. Patient compliance with their first appointment was also part of the purpose of this study. Besides, factors contributing to the rate of adherence to appointment were also studied in which race and age group were the factors that have been observed.

Methodology:

The study is conducted as a descriptive retrospective study in which the data of patients visiting the IIUM Optometry Clinic is reviewed. The data of patients were collected from registration and appointment books of all clinics. Meanwhile, appointment compliance of first visit is analyzed using chi-square test.

Result:

Total number of patients visit IIUM Optometry Clinic is 8346, and the number of visits which include follow-up is 11 856 in 5 years period. The study has also shown that race and age does not contribute to non-compliance of patients to their appointment.

Conclusion:

The data showed that the total number of visits, including the number of follow-up from all clinics, was increased gradually from 2014 to 2018. Primary Care Optometry Clinic becomes the most visited clinic every year compared to the other clinics. Besides, race and age group is not associated with the patients' compliance with the appointment.

Keywords: IIUM Optometry Clinic, patients' flow, patients' compliance

Abstract ID : O005	Perceptions About Spectacle Use Among Orang Asli Population In Kuantan, Pahang: A Grounded Theory Analysis

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Corresponding Author: Asst. Prof. Dr. Azuwan Musa

Aims/Background:

To investigate the perceptions of Orang Asli adults in Kuantan, Pahang about spectacle use.

Methodology:

Twenty-two participants were interviewed among Orang Asli population in Kuantan, using semi-structured in-depth interview method. The interview covered the demographic parameters, perceptions, beliefs, behaviors and practices on the use of spectacles.

Result:

The findings provide a general insight about Orang Asli's perception of spectacle use which were divided into 3 categories: the current belief of Orang Asli about spectacle use, the reason of spectacle use and the benefit of spectacle use.

Conclusion:

The study result suggest that some population of Orang Asli are still lacking of knowledge and have misconceptions about spectacle use.

Keywords: Orang Asli, spectacle use, refractive error, glasses, eye-wear

Abstract ID : O006	Transferring Optical Knowledge Of Retinal Hazard Of Blue-blocking Lenses

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Corresponding Author: Asst. Prof. Dr. Mohd Zulfaezal Che Azemin

Aims/Background:

To assess the improvement in the optical knowledge regarding retinal hazard of blue-blocking lenses after the intervention of teaching module and to give awareness about the hazard of blue light exposure to the retina.

Methodology:

This study focusses on the impact of the knowledge transfer. The test score was collected before and after the module teaching was conducted. The data collection was paperless using google docs only. The educational intervention was carried out by watching a short animation video about the optical knowledge of retinal hazard of blue-blocking lenses. This study was conducted in IIUM, Kuantan Campus. For statistical analysis, non-parametric test and Wilcoxon sign rank test were used.

Results:

In the total of 50 IIUM Optometry students were participated in the study. The educational intervention increased the Optometry students' awareness about the blue light exposure could lead to photochemical damage to the retina ($P < 0.05$). Improvement of knowledge were also noted in the difference of mean scores before and after the module teaching were conducted. Overall, there was statistically significant increase in knowledge after educational intervention.

Conclusion:

Educating optometry students about the retinal hazard of blue-blocking lenses increased their level of knowledge about the importance of eye's protective measures from the blue light exposure. Similar educational method is an effective way to increase the knowledge and awareness of optometry students regarding blue light phototoxicity and to act about this situation from worsen.

Keywords: Blue light, blue control lenses, optical knowledge, retinal hazard

Abstract ID : O007	The Reliabilty Of The Illuminated Eye Chart (Model No. 16500)

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Aims/Background:

The purpose of this study is to compare the measurement of visual acuity between the Illuminated Eye Chart and the gold standard logMAR chart in different groups of reduced acuity.

Methodology:

Forty-five eyes for each group; mildly reduced VA (>6/6 to 6/9), moderately reduced VA (>6/9 to 6/12) and severely reduced VA (≥6/18) were selected in this study and visual acuity of all participants were measured using the Illuminated Eye Chart and logMAR chart in a same visit.

Results:

Bland-Altman analysis reported low agreement of visual acuity measurement between Illuminated Eye chart and logMAR chart in all groups. Mean difference revealed -0.019 logMAR units (95% CI: -0.091 to 0.053) between these two charts. Intraclass correlation (ICC) for the Illuminated Eye chart is 0.986.

Conclusion:

Our results suggest that the Illuminated Eye chart cannot be used reliably as acuity assessment, and interchangeably with the gold standard logMAR chart.

Keywords: Reliability, visual acuity, Illuminated Eye chart, logMAR chart

Abstract ID : O008	Comparison Of Tear Meniscus Height (Tmh) And Schirmer Test Value Between Dry Eye And Nondry Eye Subjects Based On Asian Dry Eye Society (Ades) 2017 Definition

Authors:

Puteri Nur Liyana Syairah Zainal Abidin[1], Mohd Hafidz Bin Ithnin[1]

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Aims/Background:

The study aimed to compare non-dry eye and dry eye subjects on tear meniscus height (TMH) and Schirmer test with anaesthesia using the Asian Dry Eye Society (ADES) 2017 definition.

Methodology:

This quasi-experimental study involved eighty healthy eyes that were categorised into two groups; normal and dry eye groups. Subjects were required to answer the Ocular Surface Disease Index (OSDI) questionnaire and tear breakup time (TBUT) was measured for each eye to categorise each subject. TMH and Schirmer test with anaesthesia (SA) on each eye were assessed among non-dry eye and dry eye subjects.

Results:

Dry eye subjects have a statistically significant low TMH when compared to non-dry eye subjects ($t_{74.582}$=5.503, $p<0.001$). Schirmer test with anaesthesia shows almost identical values in both groups (t_{74}= -0.294, $p>0.05$).

Conclusion:

TMH can be new criteria in diagnosing dry eye based on ADES definition 2017. Further study can be done with a higher concentration of alcaine 1% or by modifying the age range and severity of dry eye to compare the values of the Schirmer test with dry eye among dry eye and non-dry eye groups based on ADES 2017 definition.

KeywordS: Dry eyes, Tear Meniscus Height, Tear Volume, Schirmer test with anaesthesia, ADES 2017

Abstract ID : O009	The Repeatability Of Smith's Method In Measuring Anterior Chamber Depth

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Corresponding Author: Asst. Prof. Dr. Firdaus Yusof @ Alias

Aims/Background:

The aim of this study is to assess the intra-observer repeatability and the inter-observer limits of agreement of the Smith’s technique in measuring ACD.

Methodology:

Twenty-two healthy participants with range of age from 24 to 25 were examined on their ACD by two examiners and in two sessions.

Results:

The mean difference for intra-observer was -0.04±0.29 mm with limits of agreement (LoA) of -0.60 to +0.52 mm and inter-observer mean difference was -0.09±0.30 mm with LoA of -0.68 to +0.50 mm. The ICC findings for intra-observer repeatability was 0.482 with 95% confident interval = 0.085 – 0.746. For the inter-observer agreement, the ICC result was 0.594 with 95% confident interval = 0.022 – 0.831.

Conclusion:

The Smith's technique in estimating ACD is repeatable upon measurement by different examiners and the values are repeatable upon measurement at different sessions. Hence, the Smith's technique can be used with a moderate degree of repeatability and agreement to monitor longitudinal changes in the ACD**.**

Keywords: anterior chamber depth, Smith's technique, repeatability, angle-closure glaucoma

Abstract ID : O010	Barriers To Utilization Of Eye Care Services Among Orang Asli Adults In Kuantan, Pahang: A Grounded Theory Analysis

Authors:

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Aims/Background:

The purpose of this study is to investigate reasons for not utilizing the eye care services among Orang Asli adults in Kuantan, Pahang.

Methodology: Two Orang Asli were interviewed from each of six villages according to an in-depth semi-structured questionnaire. The interview is ended after saturation has been reached. Responses obtained were then analysed using grounded theory analysis.

Results: The percentage of Orang Asli who do not utilize the eye care services is 75% from the total 24 participants interviewed. The reasons for not utilizing the eye care services are divided into three main themes that are lack of knowledge, not enough time and expensive cost of service. Lack of knowledge which accounts for 87.5% is found to be the main reason for Orang Asli to not utilize the eye care services followed by lack of time with 8.33% and expensive cost of services with 4.17%.

Conclusion: Lack of awareness on eye health has been identified to result in lack knowledge on the importance of eye health. Further efforts should be carried out to increase health awareness including different approaches such as distribution of brochures from door to door and free eye screening campaign.

Keywords: Eye care services utilization, eye health disparity, barriers, indigenous people

Abstract ID : O011	The Immediate Effect On Non-preservative Hyaluronic Acid And Carboxymethylcellulose Sodium (Cmc) Eye Drop On Tear Film Quality And Patient Sensation

Authors:

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Corresponding Author: Asst. Prof. Dr. Mohd Radzi Hilmi

Aims/Background:

This study aims to evaluate the immediate effects of non-preservative HA and CMC eye drop on tear film quality and patient's subjective feedback.

Methodology:

In this study, 30 patients were recruited, and each patient were randomly given 2 eye drop. The patients will be evaluated on the conjunctival redness and tear break-up time (TBUT) for each 5, 15, and 60 mins, also for patient's feedback, questionnaires including Ora Calibra Drop Comfort Scale, Overall Discomfort and 4-symptoms questionnaire will be used.

Results:

The TBUT result shows a significant difference between HA and CMC with mean TBUT of 5.17±1.05s for HA and 5.07±1.08s for CMC with (All $P < 0.001$), and no significance difference were found for both conjunctival redness and patient's feedback.

Conclusion:

HA gives good immediate effect in terms of TBUT compared to CMC, however, other clinical parameters and patient's feedback showed no significant difference and no improvement between HA and CMC.

Keywords: Eye drop, non-preservative, HA, CMC, patient's feedback

Abstract ID : O012	Comparison Of Lissamine Green Test Score And Tear Lipid Floating Time Among Normal And Dry Eye Subjects Based On Asian Dry Eye Society (Ades) 2017 Definition

Authors:

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Aims/Background:

The purpose of this study was to compare the lissamine green test score and TLFT between normal and dry eye people who are defined by ADES (2017)

Methodology:

Forty subjects, consisting of 31 females and 9 males were involved in this quasi-experimental study. Dry eye disease was defined based on the ocular surface disease index (OSDI) of score 33 or more and tear film break-up time (TFBUT) of 5 seconds or less. The assessment of lissamine green and lipid floating time were conducted by using slit lamp videography.

Result:

TLFT was significantly faster which is about 0.17 seconds lower in the non-dry eye compared to dry eye subjects for both sides of the eyes. While, for lissamine green test, there was no significant difference in lissamine test score of non-dry eye subjects and dry eye subjects.

Conclusion:

Only tear lipid floating time has correlation with the definition of dry eye disease by ADES 2017. However, the similar trend does not show in lissamine green test hence it can be assumed that the lissamine green test might not have sensitivity with the definition of dry eye disease by ADES 2017.

Keywords: Asian Dry Eye Society (ADES) 2017, definition, lissamine green test score, tear lipid floating time, slit lamp videography.

Abstract ID : O013	Reproducibility And Repeatability Of Aberration Measurements In Myopic Eyes

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Aims/Background:

To evaluate the reproducibility and repeatability of high order aberration (HOA) parameters measured by Zeiss I-profiler Plus, Zeiss ATLAS Corneal Topography and Carl Zeiss WASCA Analyzer in myopia eyes.

Methodology:

34 eyes were measured for the third and fourth-order aberration of ocular and corneal aberrations. Measurements for corneal aberration were obtained from Atlas Corneal Topographer 9000 and I-Profiler Plus. Whereas measurements for ocular aberration were taken from WASCA Analyzer and I-Profiler Plus. The Zernike coefficients, root mean square of third and fourth-order of high order aberration (HOA) were evaluated for both corneal and ocular aberration. Repeatability of 3 measurements from each instrument was evaluated by within-subject standard deviation (Sw), coefficient of variation (COV), and intraclass correlation coefficient (ICC). The Bland and Altman method was also performed to assess agreement in measurements between devices.

Results:

Atlas Corneal Topographer 9000 able to provide higher reliability for corneal aberrations measurements in terms of repeatability and reproducibility compared to I-Profiler Plus with the ICC findings for RMS of third and fourth-order and most of the Zernike coefficients revealed higher than 0.900 and COV values were less than 0.31%. For ocular aberration, WASCA Analyzer demonstrated high reliability of repeatability and reproducibility compared to I-Profiler Plus due to high reliability in ICC findings and COV values were less than 0.40%. WASCA Analyzer and I-Profiler Plus have a strong agreement with an r-value of 0.986 and 95% limit of agreement of 0.113 to 0.192 in terms of ocular aberrations, while for corneal aberration, Atlas Corneal Topographer 9000 and I-Profiler Plus provided r-value of 0.696 and 95% limit of agreement of 0.025 to 0.040.

Conclusion:

All of these devices are highly repeatable and reproducible in measuring HOA parameters in myopia eyes. However, all the instruments cannot be used interchangeably.

Keywords: High order aberration, myopia eyes, I-profiler Plus, ATLAS Corneal Topography, WASCA Analyzer.

Abstract ID : O014	The Association Between Visual Performance With Aberration Using Quality Of Life Of Refractive Correction (Qirc) Questionnaire In Moderate And High Myopic Patients

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Aims/Background:

This study was done to find out the association between visual performance with aberration using quality of life impact of refractive correction (QIRC) questionnaire in moderate and high myopic groups.

Methodology:

21 participants were recruited with age ranging from 19 to 25 years old for both male and female having spherical refractive error between -3.00D to -5.00D (moderate myopia) or more than -5.00D (high myopia) and maximum cylindrical error of -1.25DC. This study was conducted in International Islamic University Malaysia (IIUM) Eye Specialist Clinic (IESC), Kuliyyah of Medicine, Kuantan, Pahang, Malaysia and IIUM Optometry Clinic (IMC), Kuliyyah of Allied Health Sciences on 21 subjects ranging from moderate and high myopia using WASCA analyzer.

Results:

Results show that there is a positive relationship between moderate and high myopia to third- and fourth-order aberration ($p<0.05$) while QIRC mean scores of high myopia yield a lower mean value to total HOA as compare to moderate myopic group, indicating lower satisfaction on their visual performance. However, there is a weak correlation found between QIRC results and aberration ($p>0.05$).

Conclusion:

This study found that there is a weak relationship between different degrees of myopia and aberration with QIRC questionnaire.

Keywords: aberration, refractive error, myopia, QIRC, quality of life

Abstract ID : O015	The Immediate Effect Of A Preservative Hyaluronic Acid And Carboxymethylcellulose Sodium Eye Drop On Tear Film Assessment And Subjective Response

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Aims/Background:

The purpose of the study is to evaluate the short-term effect usage of a preservative HA and CMC eye drop on tear film quality and participants' responses in terms of symptoms and clinical signs before and after the instillation of the eye drop.

Methodology:

30 participants were recruited and randomly instilled with preservative HA and CMC eye drops on both of the eyes and the TBUT, tear ferning pattern and conjunctival redness were recorded together with the response from Ocular Surface Disease Index (OSDI) and Ora Calibra™ Drop Comfort Scale and Ora Calibra™ Ocular Discomfort, and 4-Symptom questionnaire of the participants.

Results:

From the study, the mean of tear breakup time (TBUT) was 4.30±1.54 and 4.13±1.53 (baseline) for HA and CMC respectively. After 60 minutes, the mean was 4.80±1.30 (P=0.003) and 4.60±1.45 (P=0.006) for both HA and CMC respectively. When comparing to each based from baseline with 5,15 and 60 minutes after instillation, both HA and CMC show no significant difference (P>0.005). Other parameters, conjunctival redness and subjective response does give any significant difference.

Conclusion:

Both preservative HA and CMC eye drops able to provide immediate TBUT while comfort are approximately good for both eye drops.

Keywords: Eye drops, preservative, hyaluronic acid, carboxymethylcellulose sodium, tear film quality.

Abstract ID : O016	Dry eye syndrome: A review on prevalence and risk factors in the Arab world

Authors:

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Corresponding Author: Asst. Prof. Dr. Noor Ezailina Badarudin

Aims/Background:

Previous data have shown that the prevalence of dry eye (DE) ranges from 5% to 50% worldwide. This review discussed the prevalence of DE and its risk factors within the Arab race.

Methodology:

Keywords such as dry eye (disease or syndrome or pathology), (prevalence or epidemiological data), (major risk or influencing factors), (symptoms or questionnaires) and (signs or clinical tests); and Arab (countries or world or race or population) were searched on Google Scholar and PubMed in this review. Only the English language articles from 2017 to 2021 were selected which led to 53 articles reviewed.

Results:

The prevalence of DE range from 10% in the United Arab Emirates (Dubai) to 69% in Palestine (West bank). The risk factors of DE in this region include age, gender, contact lenses wear, refractive operation, glaucoma, blepharitis, red eye, meibomian gland dysfunction, sicca syndrome, pterygium, ocular allergy and history of trachoma, topical glaucoma eye drops, biological drugs, arthritis, hypercholesterolemia, hypertension, diabetes mellitus, autoimmune disorders, smoking or passive smoking, computer or smartphone use, watching TV and continuous reading. In addition, the ocular surface disease index (OSDI) is one of the most common tools for diagnosis of DE while tear break up time test (TBUT) is the common clinical test used in the Arab reports.

Conclusion:

The high prevalence of DE intrigued a systematic dry eye investigation to be conducted in the Arab region to explore methods in resolving the condition.

Keywords: dry eye, risk factors, contact lenses, OSDI, TBUT

Abstract ID : O017	The Perspective of Ophthalmologists, Optometrists and Opticians on Refraction for Children in Kuala Lumpur – A Mixed-Method Study

Authors:

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Corresponding Author: Effendy Hashim

Aims / Background:

The burden to correct uncorrected refractive errors among children has not been fully explored in Malaysia. There are gaps in the practice of refraction for children especially on the usage of cycloplegic drugs to aid refraction. *Objectives:* To gather evidence on the practice of refraction and cycloplegic refraction for children by ophthalmologists, optometrists and opticians in Kuala Lumpur.

Methodology:

A mixed-method quantitative and qualitative study was conducted in Kuala Lumpur among ophthalmologists, optometrists and opticians by convenient sampling. The respondents were asked to answer survey questionnaires by using online or face-to-face methods. Among them, a few were interviewed using a semi-structured guide, transcribed and analysed to capture their perspective on the practice of refraction for children.

Results:

Two hundred and twenty-two ophthalmologists, optometrists and opticians responded (30.5% response rate) to the survey where twenty participated in the semi-structured interview.
Quantitative: A high percentage of respondents refracting (67-78%) children at the age above four years. A low percentage of respondents conducted cycloplegic refraction for children at the age above ten years (5 – 11%). Among children of all age groups, a low percentage of ophthalmologists refracted (7-10%) in comparison to optometrists (10- 48%) and opticians (9-92%). The children received cycloplegic refraction only from ophthalmologists (3- 43%) and optometrists (2-35%) but not from opticians (0%).
Qualitative: The practice of refraction for children varies according to the children's age, the categories of eye care practitioners, legality, working sector, and chair-time.

Conclusion:

Qualification, legality, work setting, and time factor was an important barrier and enabler for the practice of refraction and cycloplegic refraction for children.

Keywords: children, refraction, cycloplegic

Abstract ID : O018	A Pilot Study on Driving Difficulties Among Bilateral Cataract Patients

Authors:

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Corresponding Author: Assoc Prof Dr Haliza Abdul Mutalib

Aims / Background:

The presence of cataract causes reduced visual acuity (VA) and contrast sensitivity (CS), thus it can affect individual's daily activities and quality of life. The aim of this study was to investigate self-reported driving difficulties among patients with bilateral cataract using the Driving Difficulty Questionnaire.

Methodology:

This cross-sectional study involved the measurement of visual functions (VA and CS) and driving difficulty. It involved 30 bilateral cataract patients with valid driving license and were actively involved in driving.

Results:

The mean age of the patients were 63.23±5.39 years old. The mean composite driving difficulty score was 72.08±15.95 and most of the patients were having driving difficulty in raining situation and during nighttime. Furthermore, there was no significant correlation between driving difficulty and VA (r_s=-0.26, p=0.15). However, there was a significant correlation between driving difficulty and CS (r_s=0.40, p=0.03).

Conclusion:

This study suggests drivers with bilateral cataract would have driving difficulty, especially in low contrast situations.

Keywords: *Driving difficulty; cataract; visual impairment*

Abstract ID : O019	The Impact of E-Cigarette Smoking and Vaping Voltage on Tear Film

Authors:

Nur Amalina Md Isa[1], Pavithra Doraj[2], Koh Poh Yi[2]

Affiliation:

[1]*International Islamic University Malaysia.*

[2]*National Institute of Ophthalmic Sciences, Malaysia.*

Corresponding Author: Nur Amalina Md Isa

Aims / Background:

The impact of e-cigarette (EC) vaping to the eyes is not much known except for reported eye irritation from exposure to EC vapor and e-liquid. Dubbed as “healthier” version of smoking due to lesser toxicants compared to conventional cigarette, studies found that e-liquid product label often do not represent the actual components. Carcinogens and free radicals were also found in EC vapor and they were associated with e-liquid compositions, device power output, and puffing profile. This study aims to investigate the effect of vaping on tear film and ocular comfort of long-term vapers.

Methodology:

Twenty-one vapers and 21 non-smokers (age range: 18 - 30 years old) were evaluated on their Ocular Surface Disease Index (OSDI) score, non-invasive tear break-up time (NITBUT), fluorescein break-up time (FBUT), tear meniscus height (TMH), and Schirmer test. The influence of regular vaping voltage was assessed against the parameters.

Results:

The OSDI score shows vapers experienced moderate-to-severe eye dryness [25.0 (IQR 14.6—43.7)]. Significantly lower NITBUT ($P < .0001$, $r = 0.70$), FBUT ($P < .0001$, $r = -0.76$), and TMH ($P = .002$, $r = -0.40$) but higher Shirmer test score ($P = .001$, $r = -0.49$) were found in vapers compared with non-smokers. Increase in vaping voltage deteriorate the dry eye symptoms and tear stability ($P < .05$). Higher Schirmer test result was also noted as voltage increases.

Conclusion:

Moderate-to-severe ocular discomfort and poor tear film function among vapers signaled disadvantages of vaping to the eyes. Exposure to the by-products of e-liquid pyrolysis during high voltage vaping may have deteriorated the tear function. Investigation on other ocular surface health parameters is necessary to gain a deeper understanding on the impact of vaping to the eyes.

Keywords: E-cigarette, Eye, Ocular Surface

Abstract ID : O020	Development And Validation Of Quality Of Life Questionnaire In Infantile Esotropia: Parents Version

Authors:

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Aims / Background:

Infantile esotropia is a common strabismus problem in Malaysia. Parents of children with infantile esotropia reported various concern affecting their quality of life. However, there is no specific tool to measure their quality of life in our native language. The objective of this study is to develop and validate new quality of life questionnaire in parents of children with infantile esotropia.

Methodology:

The study was conducted from 2016 to 2019. The questionnaire was developed based on literature review, survey, interview and brainstorming with experts. A validation study was conducted on the parents of children with infantile esotropia.

Results:

A total of 101 proxy/parents were recruited. A new questionnaire in Bahasa Malaysia for parents (4 subthemes, 25 items) was developed. All items in the questionnaire had satisfactory content evidence (scale level-content validity index, averaging method > 0.8), and good response process evidence (scale-level face validity index, averaging method >0.8). The questionnaire was found to have high internal consistency (Cronbach's alpha: 0.85-0.89 (proxy/parent); acceptable intraclass correlation coefficients ($r=0.746$, $p<0.01$(proxy/parents); and significant correlations with the Intermittent Exotropia Questionnaire ($r=0.444$, $p<0.01$ (proxy/parent).

Conclusion:

A new valid and reliable quality of life questionnaire for parents of children with infantile esotropia has been developed. The questionnaire provides useful information on the actual problems from the parents own perspectives, thus helpful in the strabismus management and clinical decision.

Keywords: Infantile esotropia, quality of life, questionnaire

Abstract ID : O021	Implementing Primary Eye-care in Private Practices Malaysia; The Internal Challenges perceived by the Optometrists

Authors: Nurul Ain Yahaya[1], Azuwan Musa[1], Nor Azlina A. Rahman[2]

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Corresponding Author: Nurul Ain Yahya

Aims / Background:

In Malaysia, the role of optometrists in the private sector is limited compared to their counterparts elsewhere. Primary eye care is still not widely offered in private practices despite its demand to reduce the public's eye morbidity. The purpose is to explore the challenges perceived by the private sector optometrists to implement primary eye care in Malaysia.

Methodology:

In-depth interview using semi-structured open-ended questions was designed to explore the challenges perceived. Fifteen private optometrists across Malaysian were interviewed via purposive sampling until the data-saturated. The interviews were audio-recorded, transcribed and analyzed.

Abstract ID : O021	Implementing Primary Eye-care in Private Practices Malaysia; The Internal Challenges perceived by the Optometrists

Authors: Nurul Ain Yahaya[1], Azuwan Musa[1], Nor Azlina A. Rahman[2]

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Corresponding Author: Nurul Ain Yahya

Aims / Background:

In Malaysia, the role of optometrists in the private sector is limited compared to their counterparts elsewhere. Primary eye care is still not widely offered in private practices despite its demand to reduce the public's eye morbidity. The purpose is to explore the challenges perceived by the private sector optometrists to implement primary eye care in Malaysia.

Methodology:

In-depth interview using semi-structured open-ended questions was designed to explore the challenges perceived. Fifteen private optometrists across Malaysian were interviewed via purposive sampling until the data-saturated. The interviews were audio-recorded, transcribed and analyzed.

Results:

The internal challenges of implementing primary eye-care in private practices in Malaysia consists of four major themes emerged; financial struggles, issues on competency, attitudes and time. All of the respondents mentioned the high cost involved in implementing primary eye care. Many agreed that primary eye-care is time-consuming and requires a competent and highly motivated optometrist. Lastly, attitudes place the most significant role in implementing primary eye-care in Malaysia.

Conclusion:

The information gathered are important to address the challenges perceived by the optometrists to implement primary eye care.

Keywords: Primary eye-care, optometrists, private sector, challenges

Abstract ID : O022	In-Vivo Confocal Microscopy: Keratocytes Cell Density (KCD) Regeneration Between Femtosecond LASIK (FS-LASIK) And Photorefractive Keratectomy (PRK)

Authors:

Noorshazana Mat Rejab[1], Asst. Prof. Dr. Mohd Radzi Hilmi[2,] Assc. Prof. Dr. Khairidzan Mohd Kamal[3,] Asst. Prof. Dr. Muziman Syah Md. Mustafa[2]

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Aims / Background:

To evaluate the regeneration of keratocyte cell density (KCD) in post 1 and 3 months following laser refractive surgery (FS-LASIK and PRK) using Heidelberg Retina Tomography III/Rostock Corneal Module confocal microscope (HRT III/RCM) and image analysis.

Methodology:

Thirty six patients who underwent FS-LASIK (n=18) and PRK (n=18) involved in this prospective non-randomized study. Inclusion criteria includes of having moderate to high myope .A flap was created and repositioned back after ablated in FS-LASIK, while in PRK the entire corneal epithelium was removed (flap-less) before ablated. Central corneas were scanned throughout their full thickness using HRTIII/RCM during both baseline and post-operative 1 and 3 month by single examiner. All surgeries were performed by one surgeon. Morphologic modifications of KCD were evaluated and expressed in cell/mm2. Two images with non-artefact were selected from each stromal layer for evaluation of KCD and the average mean was taken for analysis. KCD was manually calculated within a region of interest (ROI) set at 0.16mm^2 by modification of brightness and contrast. Cells in which are more illuminated were selected and analyzed using Mixed ANOVA and independent T-test.

Results:

There was a significant changes across 1-M and 3-M prior to surgery , $F(2,68)=326.79, p < 0.01$ and significant differences between groups, $F(1,34=100.471, p<0.01)$ in Keratocytes cell density. There was also a significant interaction between time and procedure , $F(2,68)=39.870, p<0.01$. Following up this interaction indicated that there was no significant different between groups in baseline data for both group. However, the mean score of KCD abruptly decreased in PRK compared to FS-LASIK within 1m of post surgery and remained low.

Conclusion:

KCD decreases immediately after FS-LASIK and PRK but do not returns to its pre-operative state within 3 months follow up.

Keywords: Keratocytes, confocal, refractive surgery


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Wish you abundant of great days ahead and hope to see you again very soon!