A POLICY RESEARCH ON EYE HEALTH SERVICES IN NEPAL

Dipak Kumar Sah

Nepalese Association of Optometrists, Nepal

Introduction: The eye health system in Nepal is governed mainly by philanthropic social organisations with a history dating back more than three decades. However, national policies addressing the six building blocks of the eye health system are scarcely available. This study aims to find out existing gaps in national policies, strategies, and programs in the eye health of Nepal and recommend the way forward. **Methods**: This policy research has been conducted through the scoping review process, including the six standard steps. A total of 82 documents comprising policy documents, research articles, annual reports of eye health facilities and organisations, and global documents on commitments and targets have been reviewed. All the documents were entered into a data charting form, and the information regarding the six building blocks of the eye health system was collated and summarised. Furthermore, stakeholders in the eye health of Nepal were consulted. **Results:** Eye health services in Nepal have not been integrated into the government health system, although stated in National health policy 2076. Among the three main cadres of eye health human resources, the number of optometrists and ophthalmic assistants has exceeded the WHO Southeast Asia target, while more than 200 ophthalmologists are still required. There is no clear demarcation of their work and no policy documents for addressing this and their placement. The policy has been there to regulate medicine, but it is silent in regulating spectacle and other ocular devices. There is no system for consolidating data from eye health facilities at the province or national level, which is not reflected in the National Health Information Management System. The government fund has the least share in financing eye health, covering only about five percent. The roles and responsibilities of the governing body have not been well documented. **Conclusions**: The eye health care system is not adequately addressed by policies, strategies, and programs in Nepal. Moreover, proper implementation of existing policies and plans is required. Expansion of health insurance can be an effective way of financing eye health. Monitoring mechanisms of eye health information and supplies like spectacles and ocular devices should be developed and executed.

THE ROLE OF THREE SECTORS IN MANAGING REFRACTIVE ERROR AMONG UNDERPRIVILEGED CHILDREN: V4E PROGRAM

Nor Diyana Hani Ghani [1*], Mariah Asem [1], Azlina Mokhtar [2], Fajarul Hani AhmadTermizi [1]

[1]Our Optometris, Malaysia
[2]Ophthalmology Unit, Faculty Of Medicine And Health Science, Universiti Sains Islam Malaysia, Malaysia

Introduction: Uncorrected refractive error is one of the main causes of visual impairment globally. Early detection and prompt treatment are crucial to prevent visual impairment in children. The Vision for Education (V4E) program was initiated in alignment with WHO's aims to scale up the refractive error management for underprivileged children in Malaysia. Our aim is to provide access to free refractive care in children aged 0-17 years old as a strategic plan for achieving Universal Health Coverage (UHC) in health-related Sustainable Development Goals. **Methods**: This program is a collaboration of a non-profit organisation, public and private sectors in Malaysia. The standard operating procedure (SOP) for the V4E program was established through meetings, minutes, a pilot program, and a clinical data audit. This was to ensure that the V4E program ran smoothly in order to achieve sustainable programs. Each beneficiary was evaluated to ensure their criteria were met under the B40 group (bottom 40% of the Malaysian household income). **Results:** In 2022, A total number of 56 teams, including public hospitals, university hospitals, and private practices around Malaysia, collaborated in this Vision for Education program. A comprehensive eye examination was conducted, and 982 beneficiaries met the criteria and received free refractive correction (eyeglasses or contact lenses). A total sum of USD 67.8 thousand was funded for the B40 children. **Conclusions**: The V4E program has successfully provided eye care for many underprivileged children across Malaysia, reducing barriers and burdens for refractive care. It aligns with the global eye health target to increase to 40 percent in effective coverage of refractive error by 2030.

MANAGEMENT OF REFRACTIVE ERROR IN DIFFICULT CASES IN CHILDREN

Pawan Kumar

Dr. R. P. Centre, All India Institute of Medical Sciences, India

Childhood anomalies like cataracts, glaucoma, coloboma, and retinopathy of prematurity cause abnormalities in the refractive system of the eye, due to which the evaluation of the refractive error of the patient is difficult. In conditions like amblyopia, ametropia, anisometropia, strabismus and aphakia, the media may be clear, but the prescription may vary from case to case. Proper refraction and spectacle prescription is the first step to dealing with such complications. For accurate spectacle prescription, firstly, the retinoscopy findings are evaluated. Based on the retinoscopy findings, subjective refraction is done to refine the prescription. In cases where the child is too young or not cooperative, the prescription is based on the retinoscopic findings itself. As most children require spectacles at an early age and are uncooperative in visual acuity assessment, subjective refraction methods cannot be used to evaluate the eye's refractive status. In these cases, the refraction solely depends on the objective retinoscopy. The guidelines for prescribing spectacles have been laid down based on the age of the patient, presence/absence of strabismus and aniseikonia (if cases of aphakia) and anisometropia. However, complications like secondary opacification of the visual axis, retinal detachment and irregularities in the cornea or pupil, and retinal coloboma lead to difficulties in finding the end-point of the retinoscopy. Another major issue is what kind of glasses should be prescribed for children, whether monofocals or bifocals. The retinoscopy needs to be precise in such cases. In cases of irregular reflexes like the scissors reflex, the end-point is when the two reflexes moving in opposite directions meet at the visual axis. In the case of an irregular pupil, the centre of the pupil is different from the visual axis. Hence, the null point of retinoscopy is based on the visual axis. Such patients should be followed every six months for refraction. A refraction may be difficult in children with associated anomalies. Refraction and prescription of glasses in these cases may vary from case to case. But keeping in mind the guidelines for prescribing spectacles will make it simpler and also help the patient and reduce the chances of developing amblyopia and squint due to uncorrected refractive error in future.

EFFECTIVENESS OF CASE-BASED ROLE PLAY IN RAISING AWARENESS ABOUT DIGITAL EYE SYNDROME AMONG COLLEGE STUDENTS

Phani Krishna Athreya [1*], Kamal Pant [2], Jyoti Sinha [3], Gaurav Kumar Bhardwaj [4]

[1]Department of Optometry & vision science, Amity medical school & Research Scholar, Sushant University, Amity University Haryana, India
[2]U.P University of Medical Sciences, India
[3]Pharmacy, School of Health Sciences, Sushant University, India
[4] Department of Optometry & vision science, Amity medical school, Amity University Haryana, India

Introduction: Digital devices are increasingly used for diverse purposes like communication, entertainment, learning, social networking and banking purposes. The majority of college students are high in the usage of digital gadgets. The current generation has innovative expectations in learning methods. To meet their expectations and engage them in learning activities, we need to explore newer methods of teaching and learning processes. Our study was done on students among five diverse branches of the university to note the impact of portraying a digital eye syndrome (DES) case as a role play. **Methods**: Students who consent and meet inclusion criteria are guided to role play areas between the 26th to 28th of July 2021. They were asked to fill pre and post role play questionnaires with basic information related to screen time, symptoms and remedy on DES. In a prefabricated role-play of a patient presenting with DES symptoms in an optometry clinic, an optometrist diagnoses the condition at the end of the examination only after asking about the history of computer usage. He concludes with a message to blink, takes frequent breaks and maintain ergonomics. A post role play questionnaire was filled. **Results:** A total of 181 (mean age 20.9 years) students, 94 males and 87 females, responded to both surveys. One hundred eighteen of them were initially not aware of DES. In post skit assessment, 168 of them were aware of DES. Using the Wilcoxon test, improvement in their ranking was noted with a p-value of 0.001, indicating a significant improvement. The history of students using smartphones and other displays for an average of the last 5.7 years and the last 6.2 years was revealed. Even though symptoms like headache, dryness and blur vision are noted by 99, 48 and 42 of them while using computers, respectively, They were not aware of any remedy of DES before the skit, but responses of taking breaks by 94, closing eyes by 42 and frequent blinking by 18 were noted after role play. **Conclusions**: Role plays can be an engaging tool to improve DES awareness among college students, and a case-based role play can be adopted in classroom teaching as an introduction to clinical topics.

MyKidEye - CHILDREN EYE HEALTH MOBILE APPS FOR PARENTS

Norliza Mohamad Fadzil *, Nor Diyana Hani Ghani, Zainora Mohammed , Mohd Harimi Abd Rahman, Rosilah Hassan, Hanif Farhan Mohd Rasdi

Programme of Optometry & Vision Sciences, Universiti Kebangsaan Malaysia

Introduction: The majority of the causes of vision impairment in children are avoidable if detected early. Parents' awareness and perception regarding children's eye health is thus crucial as it may influence their eye care-seeking behaviours. Despite eye screenings and awareness campaigns, parents' awareness is still low, and misconceptions are still an issue. Utilising smartphones as the medium for health promotion may be an effective strategy to improve parents' knowledge and perception regarding children's eye care. Thus, this study aimed to develop a mobile application on children's eye health for parents and guardians. **Methods**: This mobile app is developed in Bahasa Malaysia. The content of the mobile app (MyKidEye) was developed based on a systematic literature review. The initial item was determined by five experts in Optometry and Ophthalmology through focus group discussion. The content validity was evaluated by seven expert panels consisting of teachers, parents, optometrists, and ophthalmologists. Lastly, a pilot study was conducted on 13 parents to determine the feasibility of the MyKidEye app prototype using a questionnaire. **Results:** The final content of the MyKidEye app consisted of 10 common eye diseases and ocular abnormalities; each eye condition encompassed seven sub-topics, i.e., introduction, causes, symptom, risk factors, treatment, effect, and complications. The content validity index for all text and picture items was more than 0.86. Modified kappa for all text and picture items were excellent (>0.85). For the pilot study, a dichotomised scale was generated by collapsing responses for 1 and 2 from the original scale to 1=agree and 3 and 4 to 2=disagree. The result showed that the majority of parents agreed MyKidEye app has good information (98.7%), is easy to use (100%), visually appealing (100%) and suitable for parents (100%). **Conclusions**: The MyKidEye app have good content validity and is feasible to be used. The newly developed apps can be used as an effective medium to improve knowledge and change parents' perceptions regarding children's eye health.

PEARLS FOR EVALUATION OF CHILDREN WITH SPECIAL NEEDS

Cathy Stern

Optometrist and Adjunct Faculty of New England College of Optometry (NECO)

Children with special needs frequently present with functional vision impairment that goes beyond any needed low vision intervention. Their functional impairment impacts activities of daily living, classroom performance and the child's opportunity for maximum therapeutic success during physical, occupational and speech language therapy. Because of their physical or cognitive limitations and the emphasis on medical management, vision evaluation is often neglected.

Testing of visual efficiency and visual processing is important for children with special needs not only for their own performance but because it provides relevant information for parents, school personnel, therapists and others involved in their care.

Maximizing visual performance is key for maximum success in school, rehabilitation, daily living skills and recreation.

AI AUGMENTING THE OPTOMETRY PRACTICE: PRESENT STATE, FUTURE DIRECTIONS

Vidyut Rajhans

College of Optometry, Laxmi Eye Institute, India

Background: Use of artificial intelligence (AI) in eyecare is fascinating. While AI is imposing a serious threat to jobs of many professionals, it is also seen beneficial to human kind. AI has widespread applications, from providing effective automation in routine time-consuming tasks to the big data analysis, eventually helping the professionals to expand their businesses. Eyecare technologies and optometry practices are continuously advancing and optometrists are under enormous stress to keep pace with this revolution. Evidence Based Practice (EBP) is a proven method to upgrade healthcare practices. However, major barriers identified for a busy optometrist in adapting EBP are lack of knowledge, scarcity of time and resources, and little motivation to read research with its difficult statistical language. AI can offer a feasible solution to overcome these challenges. Aim of this session is to explore various AI alternatives to incorporate EBP in optometry practice and figure out the strategies to overcome the aftereffects of use of AI. **Clinical Problems**: The workload of competent optometrist is steadily increasing with rising prevalence of eye ailments. The conventional diagnostic and treatment options are fading away, replaced by state of art automated machines that give in-depth analysis of ocular health parameters, generating quantum of data, across globe. Solving complex cases, managing big data, and satisfying informed and AI learned patients can be quite challenging for a solo practitioner. Incorporating EBP to update competencies even in one's chosen specialty is a daunting but essential task to achieve tag of 'leading practitioner'. However, presently we are inefficient in understanding and skilful usage of AI. It can expediate the 5-step process of EBP namely ask, acquire, appraise, apply and audit. Moreover, we are unsure about aftereffects of AI on our clinical practice and on future developments in optometry. **Existing solutions:** The pilot study conducted in India has successfully demonstrated use of AI tools to nurture EBP in optometry practice. With AI, searching and accessing relevant articles, appraising them, combining their results to apply and audit the solutions on a given clinical problems would be easy, interesting and less time consuming. However, AI experts have warned some serious short comings such as lack of creative solutions, emotionless interaction, non-ethical performance, and over dependency resulting in lazy and unskilled human workforce. These drawbacks can be minimized with reflective practice, an ability of a clinician to appraise on the experiences and improve the critical thinking and clinical decision making. Reflection is a Meta cognitive process that helps to reshape self-awareness and enhance empathetic communication. **Clinical Pearls:** AI aided EBP is promising in improving optometry practice, both in terms of quality and quantity of clinical work. Routine and mundane tasks can be dedicated to AI, enabling optometrists to concentrate on more complex clinical tasks, build new pathways and continue to do more with the less. Optometrist must use AI, else get used by AI. **Take home message:** AI facilitated EBP, supplemented by reflective practice, not only will help practitioners to stay ahead in this competitive world but also play catalyst in advancements in optometry.

OPTOMETRY EDUCATION IN INDIA : THE WAY SO FAR AND THE WAY FORWARD

Anuja R Singh

Department of Optometry, The Sankara Nethralaya Academy,
Unit of Medical Research Foundation, India

Background: The first historical reference to the profession of Optometry and commencement of a training School for Optometry in India was close to a 100 years ago. From being called "Optology" to its present form as Optometry, Optometry has undergone a sea change with respect to nomenclature, practice standards, services provided and public perception. After 100 years, it has retained its essence which is essentially that of providing eye care to the vast majority of population in India. 2018 was a landmark year for Optometry when the first Allied Health Sciences Bill was tabled in the Rajya Sabha in March 2018. An Interim Council was formed with representatives from various arms of Allied Health Sciences and the Ministry of Health and family welfare. A central register was introduced for the purpose of registration and licensing of Optometrists. Subsequent to the bill, The National Commission for Allied and Healthcare Professions Act, 2021 (NCAHP) was enacted by Parliament in March 2021. **Present Problems:** After the initial euphoria that the Act will provide for regulation and maintenance of standards of education and services, has now been replaced with skepticism with respect to the ambiguities in the act including inclusion and exclusion of other cadres within the legal framework. The duration of training to qualify as an Optometry Professional, variation in resources for training in different geographies due to the complexities involved, having a consensus among training protocols, protecting the interests of practicing professionals, aligning Optometry education to the proposed New Education Policy (NEP), all of these and more continue to be challenges facing the educators in India. **Existing solutions:** In spite of a tough road ahead for Optometry education in India, the road maps are being prepared by the think tanks of the Profession. Practice standards, benchmarking quality of optometry education, advocacy for the profession through continuous lobbying among governmental and non-governmental agencies, partnership with industry and corporates, unified approach for greater good of the profession and the public - are the needs of the hour and have been successfully adopted by countries in the Asia-Pacific region as well as globally. In education, these include, implementation of the CMOC or Common Minimum Optometry Curriculum, introducing uniform and standardized methods of skill assessments and evaluation, having robust faculty development programs, recognizing the challenges posed by teaching a tech savvy generation, continuous deliberations and discussions of shared problems in various platforms are some of the solutions that lay ahead.

MERITS OF OPTOMETRY RESIDENCE

Kuniyoshi Kanai

Herbert Wertheim School of Optometry & Vision Science, University of California, Berkeley, United States

Optometry Residency training started in 1978 at Veterans Affairs Kansas City Health Care System.

At the time, only two positions were offered. Over the next 40 years, it has expanded to 526 positions offered at 286 locations across the U.S., Canada, and Puerto Rico. Optometry residency training provides one-year postdoctoral clinical training in subspecialty areas, such as Cornea and Contact Lenses, Low Vision Rehabilitation, Vision Therapy, etc. This model allows optometrists to hone their unique skills and the profession to further advance the scope and ability to care for patients.

RESEARCH PITFALLS: THINGS I WISH I HAD KNOWN

Hema Radhakrishnan

Faculty of Biology Medicine & Health, University of Manchester, United Kingdom

This talk will highlight the potential pitfalls that researchers often face in their research careers and offers suggestions on strategies that can be used to avoid them. The common pitfalls in planning a research study and setting objectives and considering limitation of the study, which are easier to deal with at the start of a research project, as opposed to overcoming bias with data collection and analysis will be discussed. Once the research study is completed, writing the findings down in to a research paper(s) presents a new set of challenges, often in the form of conflicting reviews and unwelcome rejection letters. However, these challenges can be turned on their head by careful consideration of the issues and dealing with them appropriately. Through a series of examples, the factors that lead to biased decisions at every phase and some tips and strategies to effectively deal with these rather common issues will be presented. The information presented is based on published papers and personal experience of teaching scientific communication to research students, supervising PhD students, conducting research and leading a departmental vision research group.