

Implementing primary eye care in private practises in Malaysia: the challenges faced by optometrists

Nurul Ain Yahaya, Msc¹, Azuwan Musa, PhD², Mohd Zulfaezal Che Azemin, PhD¹, Nor Azlina A. Rahman, M.Comm, Med¹

¹Kulliyah of Allied Health Sciences, International Islamic University Malaysia, Kuala Lumpur, Malaysia, ²Kulliyah of Medicine, International Islamic University Malaysia, Kuala Lumpur, Malaysia

ABSTRACT

Objective: In Malaysia, optometrists' role in the private sector is limited compared to their counterparts elsewhere. Primary eye care (PEC) is still not widely offered in private practises despite its demand to reduce the public's eye morbidity. This study aims to explore the challenges perceived by the private sector optometrists in implementing PEC in Malaysia.

Materials and Methods: In-depth interview using semi-structured open-ended questions were designed to explore the challenges of implementing PEC. Fifteen private optometrists across Malaysian were interviewed via purposive sampling until the data were saturated. The interviews were audio-recorded, transcribed and analysed.

Results: Four major themes emerged: working environment, support and recognition, self-sufficiency and customer influence. The first major theme identified a lack of time and equipment in the workplace as a barrier to PEC implementation. The second major theme acknowledges the lack of support and recognition for PEC practise from financial bodies, the government, Malaysian Optical Council (MOC) and other eye professionals. Meanwhile, some practising optometrists faced significant challenges due to their lack of self-sufficiency regarding skills, knowledge and confidence. The final major theme, customer influence, reflects the customer's role in shaping eye care delivery through their perception and acceptance of PEC.

Conclusion: Each of the issues identified played a significant impact in impeding PEC implementation in Malaysia. This study is the first step toward developing tailored interventions to improve eye care delivery in Malaysia.

KEYWORDS:

Primary eye care; scope of services; optometrists; challenge; qualitative research

INTRODUCTION

Primary eye care (PEC) is defined as the 'provision of appropriate, accessible, and affordable care that meets patients' eye care needs comprehensively and competently, which should be carried out by PEC practitioners'.¹ It is a frontline activity and an essential component of eye care,

aiming not only to prevent blindness and visual impairment but also to provide treatments that reduce ocular morbidity.^{21,22} In most parts of the developing world, PEC is provided by primary health care (PHC) workers; in developed countries, it is professionals such as optometrists who provide PEC.^{18,19} Optometrists can provide a wide range of PEC services, including refraction, prescription of optical aids and detection of eye disease through binocular vision testing, funduscopy, slit lamp examination, tonometry and visual field testing.¹⁸ Nonetheless, the scope of optometric practise varies greatly around the world.¹⁸ It ranges from optical technology and visual function services in Japan, to additional ocular diagnostic services in Indonesia and Hong Kong²⁵, to ocular therapeutic services in New Zealand²⁶, possibly due to differences in health systems and optometric recognition.^{13,18}

In Malaysia, the eye care provisions are catered by public healthcare and private services. Ideally, the flow of eye care services in public healthcare starts with PEC service by the health clinics, secondary care service by the district hospitals, to tertiary care service by the tertiary hospitals. However, most clinics in the public sector could not cater to the demands for PEC services due to the limited availability of optometrists and limited access to essential ophthalmic instruments.^{2,20} This situation has led to the increasing workload of the eye clinic at tertiary centres where most PEC is catered.^{5,20} This, in turn, cause long waiting appointment list, delay in the provision of appropriate care and indirectly reduce the quality of eye care in Malaysia.^{2,15}

The Malaysian National Eye Survey (NES) I and II demonstrated that blindness and visual impairment rates in Malaysia predominantly contributed to avoidable eye diseases.^{3,4} In NES I, uncorrected refractive errors was the leading cause of visual impairment (48%), followed by cataract (39%) and retinal diseases (24%). In contrast, cataract was the leading cause of blindness (58.6%), followed by diabetic retinopathy (10.4%) and glaucoma (6.6%) in NES II.⁴ Furthermore, 86.3% of the cause of blindness were avoidable in NES II.³ The findings suggested an urgent need to assess the current provision of PEC services and the barriers to the utilisation of eye care in this country. In addition, optometrists in the private sector should shoulder some of the responsibility of reducing ocular morbidity by offering PEC services in their practise.²

This article was accepted: 16 May 2023

Corresponding Author: Nurul Ain Yahaya

Email: nurulainyahaya@iiu.edu.my

Several studies have been conducted to assess the practise of optometrists in Malaysia's private sector.^{5,6} The findings highlighted that the scope of practise is still limited to refractive examination and dispensaries in most practises.^{5,6} However, none of the studies focuses on the underlying causes of poor implementation of PEC, which are the challenges. This study, therefore, explored the present challenges of PEC implementation by gathering perspectives from optometrists in the private sector. It is hoped that the study's findings will be used to develop tailored interventions to improve eye care delivery in Malaysia.

MATERIALS AND METHODS

The study was a qualitative design using IDI. Fifteen registered optometrists with at least a year of working experience in the private optometry practise within Peninsular Malaysia were selected as respondents using purposive and snowball sampling. Those practising in hospitals, LASIK centres and academic institutions were excluded from the study. The interview guide was developed, pre-tested and piloted on two subjects to ensure the instrument's validity.⁷ Subsequent editing was made based on the pre-testing and pilot study feedback.

The semi-structured IDI was conducted at the respondents workplace from September to December 2019. With written consent from every respondent, all interviews were audio-recorded. Interviews were either in Malay or English, depending on the respondent's preference. The duration of the interview ranged from 30 minutes to 120 minutes. Prompts and probes were used to elicit in-depth responses whenever appropriate. The IDI recordings were transcribed verbatim and analysed using a thematic analysis framework.⁸

The thematic analysis approach involved data familiarisation, generating initial codes, searching, reviewing and defining the themes.⁸ The identified themes across the analysed transcripts were merged, classified and constructed into themes and subthemes. The relevant quotes were produced to represent the final themes. The verbatim transcription, analysis and identification of themes were made in the Malay language using NVivo software version 12.0. Only the excerpt of the interviews was translated into the English language with the agreement of the research team. The study's trustworthiness was obtained by adhering to the trustworthiness criteria.⁹ The ethical approval was obtained from IIUM Research Ethics Committee (IREC) with ID number 153/20.

RESULTS

The optometrists' working experiences ranged from 3 to 26 years (mean: 12.87 years). Table I illustrates a summary of the respondents' demographic information.

This study identified four significant challenges of implementing PEC in the private practise: working environment, support and recognition, self-sufficiency and customer influence. The themes and subthemes of the obstacles to implementing PEC among optometrists in the

private sector in Malaysia are depicted in Figure 1.

Theme 1: Working Environment

Based on interviews with respondents, we identified the workplace environment as one of the challenge to practising PEC. Time constraints and lack of equipment emerged as two subthemes under the workplace environment.

Subtheme 1: Time constraint

Most respondents agreed that PEC requires more time than basic eye examination. Mrs. H, who previously worked in practises that did not implement PEC, commented on how the PEC routine at her current practise significantly lengthened the examination procedure.

"The second challenge is time. From my experience, I spent about 5-10 minutes completing eye examinations in my previous workplace. But now, I need to spend 20- 45 minutes per customer to complete an eye examination".

(Interview 05: Mrs. H)

Subtheme 2: Lack of equipment

All respondents stated a lack of facilities is a barrier to implementing PEC. It includes a lack of instrumentation to practise PEC.

"The second barrier to implementing PEC in practice is the instrumentation. I am quite fortunate because my practice is equipped with auto-K and slit lamps. But that is not the case for other optometrists."

(Interview 01: Mr. M)

Theme 2: Support and Recognition

Support and recognition are also important factors in implementing PEC in private practise. It is difficult for optometrists to broaden their scope of services without strong support from governing authorities. There are four subthemes under support and recognition: financial bodies, government, MOC and other eye care professionals.

Subtheme 1: Financial Bodies

PEC implementation incurs high costs owing to the installation and maintenance of ophthalmic instrumentation, such as slit-lamp biomicroscopy (SLB), fundus camera and tonometer. However, there is lack of support received from the financial bodies to implement PEC.

"I have repetitively gone to the bank and related agencies; It is difficult to secure the loans because I am not a public worker. It will easily be rejected if I want to secure a loan to open my practice through the bank. So I need to provide my capital".

(Interview 08, Mrs. E)

Subtheme 2: Government

The government's support and recognition are critical for optometrists to function appropriately in a country. According to Mr. R, this is not the case in Malaysia, where support for the optometrist profession is still lacking.

"The last challenge would be from the government.... The government focused more on mortality and morbidity, but

Table I: Demographic information of the respondents

Name	Age	Gender	Experience (year)	Workplace Location	Ownership
Interview 01, Mr. M	41	M	19	Mall, Pahang	Staff
Interview 02, Miss Y	31	F	7	Shop lot, Pahang	Staff
Interview 03, Mr. R	33	M	10	Shop lot, Selangor	Owner
Interview 04, Miss R	28	F	4	Shop lot, Perak	Owner
Interview 05, Mrs. H	34	F	10	Shop lot, Perak	Owner
Interview 06, Mr. E	39	M	16	Shop lot, Pahang	Owner
Interview 07, Mr. J	51	M	26	Shop lot, Terengganu	Owner
Interview 08, Mrs. E	35	F	8	Shop lot, Terengganu	Owner
Interview 09, Mr. C	54	M	30	Shop lot, Malacca	Owner
Interview 10, Mrs. S	31	F	7	Shop lot, Malacca	Owner
Interview 11, Miss B	27	F	4	Shop lot, Selangor	Staff
Interview 12, Mr. A	34	M	3	Shop lot, Selangor	Owner
Interview 13, Mr. D	34	M	10	Mall, Kuala Lumpur	Staff
Interview 14, Mr. K	36	M	13	Shop lot, Kedah	Staff
Interview 15, Mr. N	51	M	26	Shop lot, Pulau Pinang	Owner

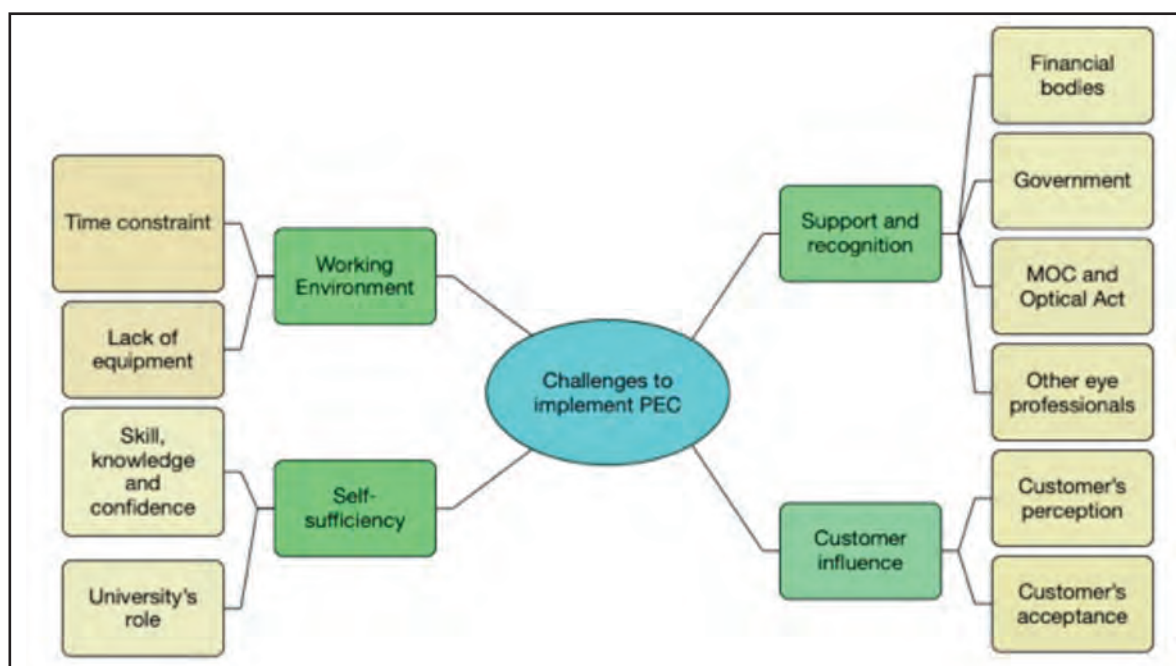


Fig. 1: The themes and subthemes of the challenges to implementing PEC among optometrists in the private sector in Malaysia

ignores the visual impairment. The current government does not support our industry".
(Interview 03, Mr. R)

Subtheme 3: Malaysian Optical Council and Optical Act
The optometrist and optician profession in Malaysia is regulated by law under Act 469, also known as Optical Act 1991. Meanwhile, the MOC is responsible for monitoring optometrists' service and practise under this act. The interviews revealed several issues with the MOC and the Optical Act 1991, including an outdated act and a lack of enforcement.

"I would like to see the new optical act be gazette and enforced. The weak current optical act currently limits our practice."
(Interview 07, Mr. J)

Subtheme 4: Other Eye Care Professionals
Collaboration between eye care professionals like ophthalmologists is critical for effective PEC delivery in a country. However, some respondents expressed dissatisfaction with the lack of recognition from other Malaysian eye care professionals.

"Even the doctor does not recognise the capability of an optometrist. From my experiences, I had a few doctors as my customers. They said, 'Ohh.. u can practice up to this level?'"
(Interview 02, Miss Y)

Theme 3: Self-sufficiency
Self-sufficiency was the third major theme for the challenges of implementing PEC among optometrists in Malaysia's private sector. It has two subthemes: skill, knowledge,

confidence and the university's role.

Subtheme 1: Skill, Knowledge and Confidence

Delivering PEC to the community requires competent optometrists in knowledge and skills. However, keeping up with knowledge and skills on the recent technologies in diagnosing and managing ocular ailments is undoubtedly a real struggle.

"The second challenges were knowledge. For example, I graduated 30 years ago, so I know from that time. That is why I founded # (mentioned an organisation), as I've said, for continuous education. It is because our profession is dynamic, with many new findings.

(Interview 05, Mr. J)

Confidence is essential in fostering a competent optometrist, which can be honed through experience. However, due to the current practise in some retailers that focusses on refractive examination, some optometrists are losing the opportunity to practise PEC thus affecting confidence.

"I think the first challenge would be myself. I have abandoned the PEC practise for quite some time, so the decision to practice back PEC was the most difficult thing to do. I haven't practised PEC for two years, so I feel nervous when performing a retinoscopy. I don't know whether I did it right."

(Interview 10, Mrs. S)

Subtheme 2: University Role

The optometrist is a credible and accredited profession obtained through undergraduate training. The university plays a vital role in optometrists' self-adequacy to practise PEC in their professional lives.

"I think the university should introduce a course or topic on PEC in the private sector. Then invite an industry veteran to speak to the graduates to inspire them to practise PEC in the future."

(Interview 10, Mrs. S)

Theme 4: Customer Influence

The last theme for the challenges to implementing PEC was customer influence. Some optometrists feel that the customer's perception and acceptance affected their motivation to practice PEC.

Subtheme 1: Customer's perception

"There are some customers who perceived us as regular salesperson. They do not recognise our roles as an optometrist."

(Interview 11, Miss B)

Subtheme 2: Customer's acceptance

"They are hesitant to receive PEC and unwilling to spend extra time in our practice."

(Interview 01, Mr. M)

DISCUSSION

This qualitative study addressed the main challenges of implementing PEC among optometrists in private sectors in Malaysia. The four major themes identified were the working environment, lack of support and recognition, self-sufficiency and customer influence. The diversity of these practise factors demonstrates the complexities of eye care delivery across the country.

This study has shown that the workplace environment is one of the barriers to the practise of PEC. The subthemes were time constraints and lack of equipment. These findings are consistent with those in the literature where lack of equipment and time factors are the major challenges.¹⁰ Due to the time-consuming nature of PEC, our respondents admitted that they generally lack time to conduct clinical testing and consultations. This in turn influenced the customer's desire to receive PEC. The second subtheme within the working environment was the lack of essential ophthalmic equipment such as SLB, auto keratometer (Auto-K), fundus camera, tonometer and visual field analyser. All of these equipment are valuable in the prescription of contact lenses and the detection of ocular disorders such as diabetic retinopathy and glaucoma, which are included in PEC services. The lack of equipment is directly attributable to the high cost associated with implementing PEC. Interviews with practise owners revealed that they experienced financial difficulties in setting up PEC. One optometrist said, "I am from an intermediate economic background, not rich people with access to funding. So, when I want to open optometry practice with PEC, I need to consider how to buy instrumentation". In addition, optometrists working in a chain store also noted a shortage of instruments, which is consistent with the previous finding.^{5,6} Although it is not their responsibility to provide the equipment, some claim that their company has not yet invested in PEC. A typical optical chain store in Malaysia focuses mainly on refractive and dispensary services rather than PEC.⁶ Thus, the challenge in the workplace is very closely related to the support from the optical company itself.

The second theme, perhaps the most intriguing, was the lack of support and recognition from the financial bodies, government, MOC and the Optical Act and other eye care professionals. The first subtheme of lack of support from financial institutions is related to the high cost of setting up PEC and the financial difficulties mentioned earlier. The difficulty highlighted by the business owners in setting up PEC may have dampened motivation to upgrade their practise. It is suggested that the authority take further measures to provide financial support in order to have a better chance of obtaining the loans. On the other hand, it is interesting to note that there is still a lack of support from the government. Referring to Mr. R's comment in the Results section, he opined that the government ignores visual impairment and does not support optometrists. While this comment may seem biased, it has some truth to it, as the assumption of reality (ontology) in a qualitative study is subjective and multi-faceted, as noted by the participants in the study.²³ Nevertheless, the government has paid attention to visual impairment as seen in some programmes such as Klinik Katarak Kementerian Kesihatan Malaysia (KK-KKM) and Amblyopia and Low Vision Screening (AVIS).²⁰ However,

the measures taken by the government are limited due to concerns about the financial stability of the health system.²⁴ Meanwhile, the lack of recognition of optometrists in the private sector by the government and health professionals has been noted. Optometrists have been around in Malaysia for about 30 years.²⁰ Despite this, the optometry profession is still not sufficiently recognised, making it difficult to expand services. Recently, during the COVID-19 pandemic, it was evidenced that optometry was not initially recognised as an essential service and was excluded from providing services during the Movement Control Order (MCO).¹¹ It was suggested that the situation was exacerbated in part by government misconceptions about the premises of opticians and optometrists. The role of optometrists as PEC practitioners and their ability to diagnose and treat eye diseases were not sufficiently recognised. Finally, there was also a lack of support from the Optical Act 1991.¹² MOC, which regulates eye care professionals, including optometrists in Malaysia, has proposed a new Optometry Act to address the shortcomings of the current act's shortcomings. However, it will be a long time before the new act is finally tabled in the Malaysian Parliament.

The third challenge faced by the optometrist in private practise was self-sufficiency. The first subtheme of self-sufficiency was skills, knowledge and confidence and the second subtheme was the role of the institution in supporting the development of self-sufficiency. Self-sufficiency of optometrists is important to provide impeccable PEC services to the public. Under normal circumstances, graduates from local universities are equipped with enough knowledge, skills and confidence to practise PEC. This is partly due to the universities strict adherence to the Malaysian Qualification Agency (MQA) guidelines to obtain accreditation and ensure that the graduates are competent and on par with other optometrists worldwide. However, when optometrists started working, many of them were employed by companies that do not apply PEC in their workplace. This might leads to a loss of skills and confidence in performing PEC, as Mrs. S describes in the Results section. Our finding is consistent with the study from Singapore, where optometrists' confidence in screening and co-management of common eye diseases such as cataract, diabetic retinopathy, glaucoma and age-related macular degeneration was generally low.¹³ The respondents in this study used many ways to overcome these challenges: developing peer support systems, attending seminars or conferences and referring to textbooks. In addition, MOC through the Ministry of Health (MOH) has introduced a Continuing Professional Development programme (CPD) for optometrists and opticians to gain knowledge, skills and experience using myCPD2 system.^{14,16} This is a practical solution to the obstacles faced by our optometrists in the private sector. However, we recommend that seminars or conferences be based on practicality and the real needs of the industry. On the other hand, higher institutions could help shape the mindset of our future optometrists by emphasising the importance of PEC in the curriculum.

The final challenge noted by our respondents was customer influence, with subthemes of customer perception and acceptance. While customers are not an immediate barrier to PEC adoption, several of our respondents expressed that they feel demotivated if they are not recognised as optometrists.

This event demonstrated that the public's understanding of the role of optometrists could still be increased as there is still some misunderstanding about the profession in Malaysia. In addition, it is worth noting that the scope of practise of optometrists in Malaysia is still limited.^{5,6} Meanwhile, the public's acceptance of optometrists who already offer PEC is not always favourable. Usually, customers come to the optometrist to get spectacles made, which only requires a refractive examination that can be completed in about 10 minutes. However, in a practise that offers PEC, the duration of the eye examination can extend up to 30 minutes to perform more extensive examinations such as SLB, fundus camera and tonometer. Several optometrists agreed that some consumers were unwilling to pay an additional fee for diagnostic examinations. This finding is consistent with a systematic review study on the facilitators and barriers for optometrists in providing eye care, which cited patient disinterest and low affordability as barriers.¹⁰ Despite the challenges, the optometrists in our study displayed perseverance to resolve the situation. They worked tirelessly to raise public awareness of the importance of PEC through direct consultation, community services and the use of social media platforms. It is envisioned that the resilience of these optometrists will be shared by all optometrists in Malaysia to promote public awareness of PEC.

The study's first and second major challenges were unfortunately sit outside optometrists' loci of control, requiring organisational level system change. Compared to hospital-based eye care, optometrists in private practise need multiple levels of management and leadership influence to accomplish change.¹⁰ This can make addressing organisational level barriers in eye care particularly challenging. However, for the initial barrier of working environment, when the practise of PEC is limited, notably by the company, it is suggested that a new optometry graduate explore more possibilities in terms of employment. It is noted that the second theme is more challenging as it involves external parties. The Association of Malaysian Optometrists (AMO), a non-governmental organisation (NGO) representing optometrists in Malaysia, has made significant efforts to defend our profession's standing, particularly before the government.¹¹ Therefore, individuals practising optometry should join the effort to gain recognition for the optometry profession by adhering to the World Council of Optometrists (WCO) standard scope of practise.¹⁸ Regardless of the lack of specialised equipment, basic optometric tools such as retinoscopy and ophthalmoscopy can be used to commence PEC practise. Lastly, it is hoped that drafting the new optometry act could be expedited for the better future of Malaysian eye care.

The barriers identified and analysed in this study were broad, encompassing concerns at both the optometrist and organisational levels. This study's findings revealed the complexities of PEC in Malaysia and provided a general grasp of the underlying obstacles. However, the limitation of this study is inherent to all qualitatively designed studies, specifically, its limited representation of optometrists in the private sector in Malaysia. Therefore, our future work involves the development of a quantitative survey using our findings to tackle the problem.

CONCLUSION

In conclusion, our study explored the challenges perceived by the optometrists in private sector Malaysia in implementing PEC. The challenges perceived were significant as they may play a role in impeding PEC implementation. This study is the first step toward developing tailored interventions to improve eye care delivery in Malaysia.

ACKNOWLEDGEMENTS

The authors would like to thank lecturers in the Kulliyyah of Allied Health Sciences and Kulliyyah of Medicine IIUM for their advice in data collection and analysis. On the other hand, the contribution of the private practise optometrists throughout Peninsular Malaysia to participate in this study is also highly appreciated. This study was fully self-supported by all the contributing authors.

CONFLICT OF INTEREST

There is no conflict of interest related to this study.

REFERENCES

1. Definition of Primary Eye Care. AAO Hoskins Center for Quality Eye Care, American Academy of Ophthalmology, 2014; [cited Aug 2022]. Available from: <https://www.aaopt.org/clinical-statement/definition-of-primary-eye-care-policy-statement>.
2. Keat EL, Keat WK. Audit of diabetic retinopathy referrals to Penang Hospital, a tertiary Ophthalmology centre in Malaysia. *Asian J Ophthalmol* 2009; 11: 17-9.
3. Zainal M, Ismail SM, Ropilah AR, Elias H, Arumugam G, Alias D et al. Prevalence of blindness and low vision in Malaysian population: results from the National Eye Survey 1996. *Br J Ophthalmol* 2002; 86(9): 951-56.
4. Chew FLM, Salowi MA, Mustari Z, Husni MA, Hussein E, Adnan TH et al. Estimates of visual impairment and its causes from the national eye survey in Malaysia (NESII). *PLoS ONE* 2018; 13(6): 1-11.
5. Mohidin N, & Hashim A. Optometric practice in private sector around Kuala Lumpur and Klang valley: a preliminary study. *Jurnal Sains Kesihatan Malaysia* 2011; 9.
6. Abd Aziz RI, Ahmad Mafakhir FA, Badarudin NE, Muhammad Sharif N. The private optometry services in Malaysia: the professional services. *Int J Allied Health Sci* 2020; 4(1): 1074-91.
7. Seidman I. 2006. *Interviewing as Qualitative Research: A Guide for Researchers in Education and the Social Sciences*. 3rd Edition. Teachers College Press.
8. Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol* 2006; 3(2): 77-101.
9. Lincoln YS, Guba EG. 1985. *Naturalistic Inquiry*. Newbury Park, CA: Sage Publications.
10. Toomey M, Gyawali R, Stapleton F, Ho KC, Keay L, Jalbert I, et al. Facilitators and barriers to the delivery of eye care by optometrists: a systematic review using the theoretical domains framework. *Ophthalmic Physiol Optics* 2021; 41(4): 782-97.
11. Yusof, TA. Government urged to classify optometrists as essential services. *New Straits Times*. 2021.
12. The Commissioner of Law Revision, M. Act 469 Optical Act 1991. *Laws of Malaysia*, 2006; (January), 1-33.
13. George PP, Yun OCS, Siow K, Saxena N, Heng BH, Car J et al. Is there scope for expanding the optometrist's scope of practice in Singapore? – A survey of optometrists, opticians in Singapore. *Contact Lens Anterior Eye* 2019; 42(3): 258-64.
14. Majlis Optik Malaysia. Continuing Professional Development (CPD) [cited Aug 2022]. Available from <https://moc.moh.gov.my/en/cpd-2/>
15. Foo CY, Lim KK, Sivasampu S, Dahian KB, Goh PP. Improving the effectiveness of service delivery in the public healthcare sector: the case of ophthalmology services in Malaysia. *BMC Health Serv Res* 2015; 15(1): 1-9.
16. Zainodin EL and Jantan ND. A survey on the evidence-based practice of optometrists in Malaysia. *Environ Behav Proc J* 2020; 5(15): 177-83.
17. Pizzarello L, Abiose A, Ffytche T, Duerksen R, Thulasiraj R, Taylor H et al. VISION 2020: The Right to Sight: a global initiative to eliminate avoidable blindness. *Arch Ophthalmol* (Chicago, Ill. : 1960) 2004; 122(4): 615-20.
18. Taub M. *Why optometry?* World Council of Optometry; 2015.
19. Khanna RC, Sabherwal S, Gowth M, Dole K, Kuyyadiyil K, Chase H, et al. Primary eye care in India- The vision center model. *Indian J Ophthalmol* 2020; 68(2): 333-39.
20. Ministry of Health Malaysia. Strategic Plan Allied Health Sciences & Allied Health Professions 2021-2025. Allied Health Sciences Division, Ministry of Health 2021; (Vol 1, pp. 1-372).
21. Aldebasi YH, Ahmed MI, Monaco WA. Are optometrists necessary in primary health care centres in Saudi Arabia? *African Vision Eye Health* 2018; 77(1): 1-10.
22. Murthy GVS and Raman U. Perspectives on primary eye care. *Commun Eye Health J* 2009; 22(69): 10-11.
23. Creswell JW, Clark VLP. 2007. *Designing and Conducting Mixed Method Research*. 3rd Edition. Los Angeles: SAGE Publications.
24. Ministry of Health Malaysia. Strategic framework of the medical programme, Ministry of Health 2021-2025. Hospital Management Unit Medical Development Division, Ministry of Health 2020; (Vol. 20, pp. 1-105).
25. Vanessa Thai MY. Optometry in Asia.[cited 2022]. Available from: Old Post Publishing, Cadyville, NY, 2010 <https://www.slideshare.net/hmirzaeee/section5-optometry-in-asia-by-thai-and-yap>.
26. Padilla MA, di Stefano AF. A snapshot of optometry around the world: optometric scope of practice is literally all over the map. Take a look at what optometrists are doing in other countries—and how it's changing, *Opt J Rev Optom* 2009; 146 (6): 55-8.

APPENDIX

BACKGROUNDS

To begin this interview, I'd like to ask some questions about you and your workplace as an optometrist

QUESTIONS	PROMPTS/ PROBES
1. How long have you been practicing as an optometrist?	
2. Can you tell me a bit on your workplace and your position there?	<ul style="list-style-type: none"> • Type of practise • Type of customers • Responsibility at the workplace
3. So you are working in _____, if let say a customer enter your practice, What is the standard of the workflow to serve the customer from beginning till the end?	<ul style="list-style-type: none"> • Do you practice primary eye care (PEC)?

PRIMARY EYE CARE & CHALLENGES

Thank you for your responses. I'd like to now ask you more detail questions regarding PEC and it's challenges.

QUESTIONS	PROMPTS/ PROBES
4. Could you please describe PEC in your own words?	
5. PEC might seem a simple 'phrase' but definitely a huge task from all eye care provider. It might looks excellent and idealistic in paper, but in reality it is indeed difficult to be executed. What is your opinion on the implementation of PEC in the retails sector, Malaysia?	<ul style="list-style-type: none"> • Do you think it can be successfully implemented? <ul style="list-style-type: none"> o Give your reason.
6. If PEC to be executed in your practise, what seems to be the biggest challenge you will face? (To be asked if PEC is not yet executed in the practice)	<ul style="list-style-type: none"> • Why do you think it is the biggest challenges? • What should be done to overcome it?
7. Since you implement PEC in your practice, what is the biggest challenges did you faced? (To be asked if PEC not yet executed in the practice)	<ul style="list-style-type: none"> • Why do you think it is the biggest challenges? • What should be done to overcome it?
8. Are there any other challenges that you think significant?	<ul style="list-style-type: none"> • What should be done to overcome it?

OPINION TO IMPROVE PEC

Thank you for your responses. I'd like to now ask you more detail questions regarding PEC and it's challenges.

QUESTIONS	PROMPTS/ PROBES
9. What do you think could motivates you as an optometrist to implement primary eye-care?	<ul style="list-style-type: none"> •
10. Imagine you are a very important person in AMO or MOC, and you have direct contact with current minister of health, what would you like to suggest the minister to support PEC expansion of private practices over a coffee break?	<ul style="list-style-type: none"> •

We are now reaching the end of our discussion. Before we end, do you have any questions or do you want to add more opinions regarding our discussion?

Thank you so much for your valuable answers and opinion It is so much pleasure to meet you and discuss this matter. If there is any matter arise, you can contact me via_____. Is that okay if I contact you after the interview if I need further clarification?