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Optometrists' perspectives on speciality programme development in South Africa

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Background: South Africa (SA) has postgraduate research-based master's and doctorate qualifications in optometry with no clinical coursework qualifications in special interest fields. As a result, it hinders professional growth and career path for optometrists and further limits patients' access to various care pathways from would-be upskilled optometrists.

Aim: To explore optometrists' perspectives on postgraduate programme development in special interest fields of optometry for SA.

Setting: Study population of practicing optometrists registered with the Health Professions Council of South Africa (HPCSA).

Methods: A quantitative cross-sectional descriptive design was employed, utilising an online questionnaire developed with the Evasys survey system v8.2. Non-probability sampling was used to access eligible participants.

Results: From 424 survey responses, 83.5% had undergraduate qualifications and 95.5% worked in patient-facing environments. Participants responded positively (88%) to this need for educational expansion. Educational needs in Ocular Disease (75.6%), Paediatric Optometry (66.4%), Binocular Vision (65.1%) and sub-specialties of myopia control (41.2%) and Specialised Contact Lens Fitting (31%) were reported. With combined 'highly important' and 'likely important' responses, participants indicated that obtaining professional recognition (94.9%) and to improve patient care (98.8%) were the main drivers for pursuing additional education and training.

Conclusion: A notable demand was found for coursework postgraduate programmes by the study populations from which professional recognition can be awarded in various special interest fields of optometry. The benefit of improved patient care from upskilled optometrists was expressed.

Contribution: The findings would contribute towards the development of a conceptual framework for postgraduate education and training for optometrists in SA.

Keywords: optometrist; postgraduate; graduate; post-qualification; specialities; special interest; education and training; programme.

Introduction

Tertiary education plays a pivotal role in lifelong learning (LLL), human capital investment, overall economic growth and subsequent development of society.[1] Optometry education and training at the Higher Education Institutions (HEI) provide undergraduate programmes and vertical progression into research-based postgraduate programmes in South Africa (SA).[2] According to Abu, the University of the Free State (UFS), the University of Limpopo (UL), the University of Johannesburg (UJ) and University of KwaZulu-Natal (UKZN) offer postgraduate research-based qualification, which are master's and doctorate degrees.[2] There are currently no horizontal articulation pathways for optometrists to directly enhance their optometric knowledge and clinical expertise in the various special interest fields. This situation is a barrier for optometrists towards their educational and professional growth with the absence of accredited clinically focused coursework postgraduate qualifications in optometry. Despite research being a way to continuously improve clinical care through evidence-based practice, it has not made significant inroads into clinical expertise as expected.[3,4] This observation was also described by Ploeg et al.[5], as cited in Kristensen et al.[6] noting that it takes many years for research to impact into clinical practice to improve health care and services provided. The researchers believe that demand for expansion of educational opportunities through the postgraduate qualification route and its feasibility is yet to be explored. The Professional Board of Optometry and Dispensing Opticians

(PBODO), a board of the Health Professional Council of South Africa (HPCSA) that regulates the professions of Optometry and Dispensing Opticianry, has indicated in the HPCSA Annual Report of 2022/2023, the need to investigate specialities in the Optometry profession and to develop minimum standards of education and training for the specialities by 2023/2024.[7] To be eligible for professional recognition in a special interest field, educational opportunities would need to be made available to endorse such recognitions in special interest fields. As defined by the PBODO, Optometry is a healthcare profession that operates autonomously and is subject to regulation through licensure and registration Optometrists in SA and globally serve as the primary providers of vision care, encompassing activities such as refraction and dispensing, identification and diagnosis and management of certain eye diseases and the management and rehabilitation of visual system disorders.[8]

According to Putter et al., in SA, after completion of the 4-year undergraduate qualification, an optometry graduate can immediately work independently.[9] Continuing Profession Development (CPD) activities present opportunities for working optometrists to remain abreast with past, present and evolving knowledge and skills.[10,11] According to Merry et al., it is an expectation for healthcare professionals to participate in CPD activities, and this view concurs with the HPCSA, which mandates that all healthcare practitioners must acquire the requisite CPD points.[12] There are numerous options and platforms to access CPD points for optometrists; however, there is insufficient research as to whether the current CPD provisions directly enrich optometrists' clinical skills from the practicing optometrists' perspective. Chong et al. and Nyiringango et al. agree that desktop-based CPD activities are more convenient and cost-effective to be CPD compliant than accruing CPD points through in-person workshops and course attendance.[13,14]

In support of optometrists' educational development and career trajectory, formalised clinical postgraduate programmes, explicitly designed to develop optometrists' clinical expertise need to be explored. Majority of Optometrists in SA are in clinical practice; therefore, the conjecture is that, by generating upskilled and reskilled cadres of optometrists in various clinical special interest fields, they can be capacitated to deliver comprehensive and higher quality levels of eye care. Langlois et al. state that optometrists are primary healthcare workers and in many low- to middle-income countries, it has been claimed that health systems are weak and fail to provide comprehensive and integrated care.[15] The value of a well-skilled, available health workforce will improve both access and overall patient outcomes.[16,17] The World Health Organization (WHO) and the World Bank indicated in their guideline on universal health coverage (UHC) that updated knowledge and skills of health professionals in the developing world are crucial towards the goal of UHC by 2030.[18] The recommendation cited by Hansraj and Rampersad was that the clinical skills development of optometrists should be factored into future postgraduate programme planning.[19] As optometrists represent the primary stakeholders of the profession and the eligible group to enrol in the envisaged programmes, the researchers believe that they are appropriately positioned to provide valuable insights on the unexplored key factors around postgraduate education and training.

There are a few countries across the world that offer postgraduate qualifications in special interest fields for qualified optometrists, of which none exist in Africa. There are 16 countries in Africa that offer optometry education of which only six offer postgraduate degrees which are research based programmes.[2] The frameworks for post-qualification education and training of optometrists are different between countries with various specialties.[20,21,22,23] In North America, there are over 200 residency programmes for qualified optometrists to choose from 20 Optometry colleges in the United States of America (USA) and Canada.[24] A 2023 survey conducted by Jobson Optical Research investigated the need for optometrists in the USA to have their sub-specialisation skills recognised (n = 502).[25] The findings revealed a significant enthusiasm for those who desire to focus their practice on specific specialised services with over a quarter already declaring to possess sub-specialty skills obtained either from clinical experience, residency programmes or CPD programmes.[25] The five most frequent sub-specialty areas that optometrists indicated that they are already skilled in are Cornea and Contact Lenses, Ocular Disease, Glaucoma, Anterior Segment and Paediatric Optometry.[25] In Europe, the United Kingdom (UK) offers optometrists different special interest field programmes in contact lenses, glaucoma, medical retina, paediatric eye care and low vision[26] as well as various coursework master degrees in optometry to build clinical expertise. Spain also offers a variety of speciality-focused postgraduate programmes through virtual and blended courses up to clinical master of optometry degrees.[27] Norway provides a clinical master's qualification in two streams of General Practice Optometry and Orthoptics and Paediatric Optometry.[28] In Asia, Hong Kong has a two-part residency programme in myopia management, speciality contact lenses, vision rehabilitation and special needs in geriatric optometry.[20] In India, a Postgraduate Diploma in Optometry and Vision Sciences is available in 10 specialities[22] and various fellowships and certificate programmes in binocular vision, vision therapy, paediatric optometry, contact lenses, neuro-optometry and clinical optometry.[29,30] In the Middle East, Israel has a Master of Optometry and Visual Science, an international programme, comprising multiple sub-specialities within a single Master's programme.[31] In Australia, optometrists can access coursework post-qualifications from certificate courses to clinical master degrees in various special interest fields such as orientation and mobility, ocular therapeutics, neuro-ophthalmic disorders, paediatric optometry, glaucoma and retinal disease, contact lenses, low vision and dry eye disorders.[32,33]

It is currently unknown what would be the framework of the special interest fields that curricula can be modelled around based on the needs of the SA population. In identifying

special interest fields for further education and training, such knowledge areas need to align with the local eye care needs by filling in gaps where optometric care is deficient or has not matched the momentum of our transforming society. According to the researchers, empowerment through further education in expanding LLL opportunities offered by HEIs may be the catalyst for change in how and what eye care services are provided by Optometrists in SA.

Postgraduate education is undertaken by healthcare professionals at different stages of their professional careers and for a multitude of reasons, which can be related to work motivation as indicated by Herzberg Two-Factors Theory.[34] There are also reasons why individuals may not actively pursue additional formal education, which can be attributed to both intrinsic and extrinsic factors.[35] Cobbing et al. examined the primary obstacles faced by physiotherapists in SA such as scarcity of financial assistance, cost implications and time constraints resulting from work and family responsibilities. Comparably, studies with speech-language pathologists, audiologists, dental hygienists and nurses also showed similar demotivating factors.[36,37,38,39] Smith et al.[36] state that to adequately prepare for postgraduate programmes in optometry with a coursework component, cognisance must be taken of challenges commonly encountered by other health professions to learn from them. By doing so, the programme developers can mitigate challenges by anticipating obstacles that may arise for future optometry postgraduate candidates and threats to programme sustainability.

The significance of this study lies in the proposed expansion of educational options for Optometrists in SA as a conduit towards LLL.[40] As optometrists are the key stakeholders, exploring their perspective through this investigation is critical as they represent the population that education and training are intended for. Benchmarking against established global optometry post-qualification frameworks would support the development of a South African conceptual framework for HEIs to collectively strive for the expansion of their postgraduate programme offerings. This endeavour would mobilise the profession to compete in the global market by achieving internationalisation of our programmes and elevating the levels of optometric care that professionals would provide to the population.

Research methods and design

Study design

This study followed a cross-sectional, descriptive design using a quantitative approach from a broader mixed-method study. A survey method was selected using a self-administered online questionnaire developed in English using the UFS Evasys survey system, version 8.2. This method and format were selected as the most cost-effective and convenient method to reach optometrists located throughout SA within a short period.[41] The new instrument was developed and was based on a similar tool developed by Kriel from a previous study conducted with optometrists in 2003.[42]

Study population and sampling strategy

Eligible participants were optometrists registered with the HPCSA of various ages, years of experience, qualifications, employment sectors, work settings and geographic locations. A non-probability sampling method using a convenience and snowball sampling[43] was adopted to gain a greater reach of optometrists for participation because of a sampling frame not being accessible for the 4204 licensed Optometrists in SA.[7] The study was advertised with the distribution of an online survey link to various social media and online platforms in the local optometry industry with assistance of various organisations and companies. Additionally, optometrists known to the principal researcher were directly contacted to share the survey link with other optometrists in their professional network. A minimum sample size of 353 participants was determined based on the following sample size characteristics: population size (N) = 4204, margin of error (E) = ± 5%, confidence interval = 95%, z-score = 1.96.

Data collection

The questionnaire consisted of 62 survey items separated into a demographic section followed by four sections that examined different objectives of a broader study. The survey items comprised 44 Likert scale statements utilising two sets of 5-point scales; 'strongly disagree, disagree, neutral, agree, and strongly agree' and 'not important, unlikely important, neutral, likely important, and highly important'. The other items included 15 categorical and three open-ended questions. Section A focused on optometrists' perspectives regarding postgraduate education and training in SA, which is reported in the results of this report. Sections B, C and D addressed postgraduate programme design features, teaching and learning approaches and assessment strategies and are reported in other publications. The online survey was accessible for 5 weeks from March 2023 to April 2023 and was closed after no further responses were received.

Validity and reliability

A content and face validity process were sequentially conducted before finalisation of the instrument. The content validity reviewers (n = 10) with postgraduate optometry qualifications were purposively selected. Using a quantitative approach, the 'relevance' of each survey item was rated using a 4-point Likert scale where the Scale Content Validity Index (S-CVI) was computed revealing a score of 0.921.[44] The interrater reliability (IRR) using the intraclass correlation coefficient (ICC) because of multiple raters yielded a very high reliability score of 0.916.[45] The second group of 15 optometrists played a dual role as the face validity reviewers and as the pilot participants who completed the questionnaire. Participants provided textual input on language usage, sentence structure, questionnaire length, ambiguity, bias and survey completion time, which further aided in the

finalisation of the questionnaire. Adjustments were made after the pilot, and the findings were excluded from the main data collection phase. After data collection, an exploratory factor analysis (EFA) was used to assess the construct validity. A principal axis factoring extraction method with oblimin rotation was selected to run the EFA. To ensure adequate survey items for a reliable EFA, the principal researcher merged sections A and B (32 items) and sections C and D (14 items) because of their interrelatedness. Both datasets met the Kaiser-Meyer-Olkin (KMO) criterion (0.86 & 0.68), Bartlett's test of sphericity ($P < 0.001$) and had a sufficient sample size ($n = 393$). Combining sections, A and B yielded six factors with Cronbach's alpha (α) reliability scores (0.66–0.87), while sections C and D yielded four factors (0.53–0.81).

Data analysis

The raw data including autogenerated descriptive statistics was exported from Evasys and expressed as frequencies and percentages. Statistical support was provided by a statistician using R version 4.3.0 to further compute the internal consistency and EFA. The IRR was obtained using IBM® SPSS® Statistics version 29.0. (Armonk, NY: IBM Corp, United States). The CVI was computed using Microsoft Excel by the principal researcher.

Ethical considerations

Ethical clearance was obtained from the Health Sciences Research Ethics Committee (HSREC) at the University of the Free State, Bloemfontein (Ethical approval number UFS-HSD2022/1101/2911). A study invitation and information sheet were electronically distributed with signed informed consent received via email from content validity and face validity participants. Informed consent for the main data collection phase was prompted after clicking on the online link which displayed the study information and ethical aspects. If the consent tab was selected, the questionnaire statements became visible to proceed.

Results

Demographic profile

A total of 424 participants responded to the survey with a median age of 38 years old (30–47 years). The major provincial regions where participants practised were Gauteng (34%, $n = 144$), the Western Cape (19.9%, $n = 84$) and KwaZulu-Natal (15.5%, $n = 74$) making up 71.2% of participants. These three provinces accounted for the national aggregation of the SA population. The practice environment of most participants (95.5%, $n = 405$) was in clinical patient-facing work settings. The major employment sector of participants was in a private practice (91%, $n = 386$). Other participants indicated public health institutions, universities, business/corporate companies and foundations, organisations, associations or institutes as their work environments. Regarding duration of practice as an optometrist, 17.5% ($n = 74$) were in practice from 1 month to 5 years, 15.6% ($n = 66$) from 6 to 10 years, 18.4% ($n = 78$) from 11 to 15 years, 15.6% ($n = 66$) from 16 to 20 years and 13% ($n = 55$) from 21 to 25 years in practice, which together comprised 79.95% of the study sample. The remainder of the participants were incrementally distributed in smaller proportions up to and beyond 25 years in practice.

Educational profile

Figure 1 demonstrated the highest optometry qualification of the participants. The majority of participants (83.5%, $n = 354$) held a bachelor's degree.

Regarding additional certifications obtained in optometry in SA, 60.1% ($n = 255$) reported none, 34.7% ($n = 147$) currently hold a post-qualification certification, while 5.2% ($n = 22$) indicated current enrollment. Further questions probed additional optometry qualifications obtained abroad and any non-optometric education pursued by participants. For additional optometry qualification in a special interest field from abroad, 89.4% ($n = 379$) responded negatively, 8.7% ($n = 37$) of the participants responded affirmatively and 1.9% ($n = 8$) indicated current registration. Regarding qualifications in a different field beyond the optometry profession, 71.2% ($n = 302$) had none, 25.5% ($n = 108$) indicated to possess this, with a small proportion of 3.3% ($n = 14$) indicated current enrollment.

A questionnaire statement probed the level of agreement on the current educational opportunities for upskilling of Optometrists in SA, such as conferences, webinars, seminars, workshops and short courses, to be collectively sufficient to enhance existing skills within reasonable amounts of time. Findings indicated that 46.2% ($n = 196$) disagreed, 30% ($n = 127$) agreed and 23.8% ($n = 101$) remained neutral.

Perspectives of establishing special-interest postgraduate programmes in South Africa

An initial method to separate participants was based on their response to a filtering statement; 'this type of expansion to create postgraduate programmes in multiple special interest fields for qualified optometrists would be unnecessary for the profession in SA'. Findings for 'agree and strongly agree' were aggregated as well as for 'disagree and strongly

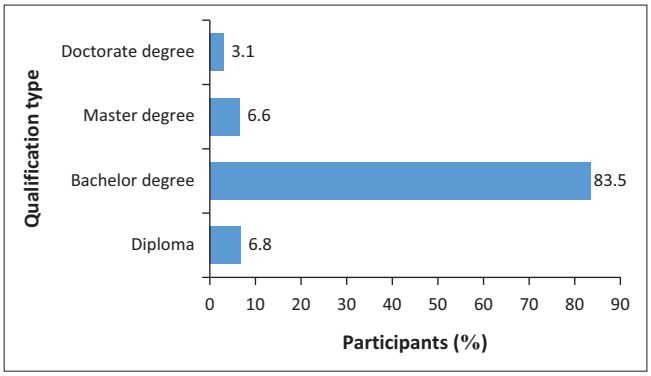

FIGURE 1: Highest optometry qualification obtained in South Africa.

disagree'. Participants who responded negatively (7%, *n* = 31) to the need for expansion were prompted to submit their response, which concluded their participation in the study. There were 5% (*n* = 21) of participants who indicated neutrality on the statement, whereas 88% (*n* = 372) disagreed. The responses to this statement demonstrated a strong need for postgraduate programmes in special interest fields. An additional statement indicated that most participants agreed (93.2%, *n* = 395) to the need for 'clinical-type' postgraduate programmes beyond the purely research-based postgraduate qualifications (Master/Doctorate) that are currently available in SA.

Special-interest fields and sub-speciality fields of optometry

The perspectives of participants on the establishment of postgraduate programmes on the broad special interest fields that they had previously been exposed to at undergraduate level were probed through a close-ended multiple selection statement with five options. The most frequent options selected in order were Ocular Pathology and Techniques (75.6%, *n* = 297), Paediatric Optometry (66.4%, *n* = 261), Binocular Vision (65.1%, *n* = 256), Contact Lenses (62.1%, *n* = 244) and Low Vision (41.2%, *n* = 162) (Table 1a). Participants further proposed through an open-ended statement, the various sub-speciality fields that would be useful to pursue if education and training opportunities were made available. These are indicated with the most frequent suggestions first: myopia control (41.2%, *n* = 162), specialised contact lens fitting (31%, *n* = 122), neuro-ophthalmic disorders (18.8%, *n* = 74) and learning-related disorders (17%, *n* = 67). Other options indicated in Table 1b were sports vision, vision therapy behavioural optometry and therapeutics. All other proposed suggestions were reported by less than 10% of the participants and were excluded from the Table 1b.

Optometrists' perspectives on pursuing further education and training

Table 2a and Table 2b lists two sets of factors, with the first set relating to their perspective on why additional training should be considered and the second set relating to factors that would influence optometrists' decision to pursue further education and training. Using a 5-point Likert scale, the selection options were 'not important, unlikely important, neutral, likely important and highly important'. Only the findings of 'important' and 'highly important' are presented in Table 2 and ranked according to the highest prevalence of the 'highly important' option. The findings revealed that the factor of 'enhanced skills to improve patient' care had the highest cumulative level of importance (98.8%; *n* = 388), while the factor of 'increasing chances of employment' had the lowest cumulative level of importance (65.9%; *n* = 259). All five factors were still indicated as important factors because of being reported by more than 50% of the participants for each factor. The second set of factors indicated that 'obtaining professional recognition and certification from the HPCSA' had a cumulative participant response of 94.9% (*n* = 373) while the factor of 'the amount of independent self-study work that would be needed' has the lowest cumulative level of importance by 70.9% (*n* = 279) of the participants. All seven factors were still collectively ranked as important factors by the participants as all options exceeded 50% responses from participants.

TABLE 1a: Special interest fields identified for further education and training.

Rank	Broad special-interest field	%	Frequency
1	Ocular Pathology and Techniques	75.6	297
2	Paediatric Optometry	66.4	261
3	Binocular Vision	65.1	256
4	Contact Lenses	62.1	244
5	Low Vision	41.2	162

TABLE 1b: Sub-specialities identified for further education and training.

Rank	Sub-specialty field	%	Frequency
1	Myopia Control	41.2	162
2	Specialised Contact Lens Fitting	31.0	122
3	Neuro-Ophthalmic Disorders	18.8	74
4	Learning-Related Disorders	17.0	67
5	Sports Vision	15.0	60
6	Vision Therapy and Behavioural Optometry	13.2	52
7	Therapeutics	10.2	40

Professional recognition regarding visibility and professional identity

The concept of professional recognition of optometrists within a special interest field was further explored in terms of its potential to improve cross-referral of patients between optometrists and other healthcare professionals. There was a strong agreement by participants (91.1%, *n* = 358) that professional recognition will improve inter-optometrist referrals and co-management. Similarly, there was an even higher level of agreement by participants (94.1%, *n* = 370) that referral and co-management between different health professionals would be improved if optometrists had professional recognition where their professional identity would be associated with a specific special interest field.

Discussion

This study set out to describe optometric practitioners' perspectives on the need for structured postgraduate programmes in special interest fields of optometry for SA. It further sought to identify the special interest fields that would be beneficial for further education and training based on the professional needs of participants.

The majority (72.1%) of the survey responses received from participants were from the three provinces of Gauteng, KwaZulu-Natal and the Western Cape. This finding aligns with the demographics of SA, where the population distribution of the country in the aforementioned provinces was the most populous in SA.[46] This study found that a large majority of participants were employed in the private sector, which is supported by the findings of Zulu and Van Staden who noted that the private sector still employs the bulk of practicing

TABLE 2a: Factors relating to the importance of acquiring further education and training and the factors that may influence the decision to embark on it.

Rank	Reasons why you should consider additional education and training	Highly important		Likely important	
		n	%	*n*	%
1	It could *enhance skills* to improve patient care.	328	83.5	60	15.3
2	It will improve the general *standing of the profession*.	286	72.8	92	23.4
3	It may support the *development of a practice* or practice setting into a 'centre of excellence' in a special interest field.	275	70.0	101	25.7
4	It could support *career path* opportunities.	208	52.9	129	32.8
5	It could increase the chances of *employment*.	120	30.5	139	35.4

TABLE 2b: Factors relating to the importance of acquiring further education and training and the factors that may influence the decision to embark on it.

Rank	Factors that may influence the decision to pursue further education and training	Highly important		Likely important	
		n	%	*n*	%
1	Obtaining *professional recognition* and certification from the HPCSA.	300	76.3	73	18.6
2	The *cost* of the postgraduate programme	220	56.0	122	31.0
3	Gaining *additional remuneration/financial incentives* in the workplace for the additional training and skills acquired.	218	55.5	121	30.8
4	Receiving *time off/ away from work* for studies.	207	52.7	121	30.8
5	Duration of the postgraduate programme.	174	44.4	145	36.9
6	Accessing financial *support from an employer* or external funder.	164	41.7	120	30.5
7	The *amount of independent self-study* work that would be needed.	122	31.0	157	39.9

Abbreviation: HPCSA, Health Professions Council of South Africa.

Optometrists in SA.[47] This was because of the historic insertion of optometrists purely into the private sector which persists as the largest sector employing Optometrists in SA.[48]

The current study finding of a significantly high level of optometrists supporting the establishment of clinical postgraduate programmes in special interest fields of optometry may be supported by the large proportion of participants employed in clinical practice settings. Further support for this deduction was the participants' assertion derived from the current empirical finding that improving patient care by being upskilled would be the main justification for seeking out further education and training. A study by Hansraj and Rampersad concurs with the current findings for the need to explore clinical education and training at the postgraduate level.[19] The impact of postgraduate study on healthcare professionals in the UK in a similar study concurred with the findings described in this study.[49]

Participants identified that obtaining professional recognition was the impetus for pursuing further education and training in special interest fields. There was a notable significant level of agreement among participants was that professional recognition would improve interprofessional and intraprofessional collaboration regarding both co-management and referral for further patient care. If optometrists' aspirations are to be professionally recognised in special interest fields as is the case with the profession of Nursing and the profession of Medicine, advocacy with the professional board to heed such a call supported by evidence generated from this study would be a big step forward for the profession and professional identity of optometrists. Therefore, education and training at the postgraduate level should include elements of interprofessional education (IPE) as this would improve the working relationship and understanding of how optometrists and other health professionals can work together to improve patients' health outcomes. The concept of IPE has been widely accepted within health sciences education and has been incorporated in undergraduate curricula;[50] however, optometrists who have qualified much earlier would not have had the opportunities to gain exposure to interprofessional education and understand the interprofessional identities that recent graduates would have benefited from.[51] Professional identity within a special interest field can further support a practice to be recognised as a centre of excellence. It is for this reason that participants placed a high level of importance on this concept. This notion was supported by Sethi et al. where professional identity positively influenced health professionals' behaviour within their professional community and career.[52]

The current findings of additional competencies and proficiencies that would be gained from pursuing additional post-qualification education and training could make a significant improvement to optometrists' clinical skills, which the end user, the patients, would benefit from. Findings cited by Cobbing et al. regarding physiotherapists concurred with the current study findings.[39] Smith et al., however, found contrasting findings with dental hygienists where the benefit to clinical practice was of little value, but employment options were expanded with having additional qualifications.[36] Boyd and Bailey regarding dental hygienists indicated cost as being a major deterrent in pursuing postgraduate education and training.[39,53] Contrary to findings related to studies in other health professions, this study did not find that additional postgraduate education and training for optometrists were important to increasing their chances of employment. It may be inferred that the profession of optometry is not overly saturated in SA with Census 2022 placing the population of SA at just over 62 million[46] with 4204 optometrists registered with the HPCSA[7] in that year yielding an estimated optometrist-to-population ratio of 1:14754. This enables optometrists to gain employment without significant competition despite optometric services predominantly situated in the private sector and concentrated in urban areas.[48]

The special interest fields that optometrists would most prefer that educational and training opportunities to be available in SA concur with various international postgraduate specialisation fields that are already established. The benefit of there being similarities is that content knowledge, training strategies and programme design features can be aligned and benchmarked internationally in support of global mobility and internationalisation. Other specific sub-specialty fields that local optometrists indicated as potential options for further education were Myopia Control and Specialised Contact Lens Fitting, which by far exceeded other sub-specialties indicated. Myopia Management was specifically indicated as independent training programmes in Australia and Hong Kong though it may be incorporated into the paediatric optometry special interest field courses as children are targeted for Myopia Control intervention. However, limited reporting in this study on the need for low vision training and expertise from participants may suggest there is not a significant need for low vision care. This may be owing to the profile of the majority of participants not practicing in the public sector optometry in SA. The Tshemba Foundation, a medical volunteer organisation in SA, indicated that 80% of people affected by visual impairment live in rural areas.[54] Xulu-Kasaba and Kalinda further re-iterated the public health burden of visual impairment in SA.[55] It is widely accepted that lower socioeconomic status (SES) is associated with a higher risk of visual impairment and other morbidities[56] as concurred by Akuffo et al.[57] For this reason, education and training in low vision cannot be excluded and may be of value to optometrists working in the public sector and in non-urban areas of SA. Other possibilities for the low response for low vision training may be that the service is adequately offered by multiple optometrists. Further to this, there has been significant focus on low vision CPD activities over the past decade and optometrists may have already undergone the training.

Study limitations occurred because of restricted access to the full study population on the regulatory body's database because of the *Protection of Personal Information Act (POPIA)*; hence, an alternative non-probability sampling strategy was adopted. The bias in using a chain referral sampling strategy is that this approach lends itself to sourcing of participants within professional networks that may have led to a smaller cohort of participants from the public sector. It is recommended that the empirical evidence from this study contributes to the development of a framework for coursework postgraduate programmes in optometry. The evidence generated from this study should be used by HEIs for educational expansion by developing special-interest postgraduate programmes for Optometrists in SA.

Conclusion

Optometrists have responded positively to the need for development of clinical postgraduate programmes in special interest fields of optometry for SA. Further educational opportunities identified in the broad special interest fields were ocular pathology and techniques, paediatric optometry, binocular vision and in sub-speciality fields such as myopia control and specialised contact lens fitting. A firm desire to obtain professional recognition from further education and training would support both the upward career mobility of optometrists and would capacitate the eye care sector with cadres of upskilled optometrists. The benefit of this would be to improve patient access to various care pathways, where services from optometrists would be more comprehensive in addressing the needs of a transforming South African society.

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Competing interests

The authors declare that they have no financial or personal relationship(s) that may have inappropriately influenced them in writing this article.

Authors' contributions

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Data availability

Data are available on request from the corresponding author, N.N.

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