

**RECRUITMENT AND RETENTION OF
OPTOMETRISTS IN THE PUBLIC SECTOR OF
KWAZULU-NATAL**

by

PRASIDH RAMSON

2014

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THE PUBLIC SECTOR OF KWAZULU-NATAL**

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Dedication

To my wife, for her unwavering support and love.
(Let's grow old... not up!)

To my late father.
(Work is love made visible...)

To all optometrists serving the public need.
(Giving a choice to the many that may not have a choice...)

RECRUITMENT AND RETENTION OF OPTOMETRISTS IN THE PUBLIC SECTOR OF KWAZULU-NATAL

ABSTRACT

Introduction

With Africa sharing just under a quarter of the world's disease burden, there is a limited and disparate distribution of health workers to meet this challenge. In public sector optometry, the situation is no different from the sub-Saharan scenario. In South Africa, there is a vibrant private sector catering for the privileged few while there is a paucity of optometrists serving the larger public sector. KwaZulu-Natal is one of the most densely populated provinces and home to several of the poorest districts in South Africa. Despite an optometry school in the province, and with the lack of compulsory community service for new graduates, there is still a dire need for optometrists to serve in the public sector. Recruitment of appropriate health workers takes into account demographic, educational and socio-economic factors, while retention requires the input of several financial and non-financial components to keep staff motivated and productive.

Aim

The aim of this study was to investigate recruitment and retention elements that would appeal to and retain present and future optometrists in the public sector.

Methods

A cross sectional methodology, gathering both quantitative and qualitative data, was used. All public sector optometrists and district co-ordinators in KwaZulu-Natal province were contacted, with an 80% (41 out of 51) and 75% (9 out of 12) response rate received respectively. For optometrists and district co-ordinators, a questionnaire containing demographic, recruitment, retention and open ended questions was distributed by post, fax, email and online survey. For both groups, telephonic interviews were conducted using semi-structured techniques, allowing for triangulation of quantitative responses. Frequency distributions, Fisher's exact test and Odds ratios were used to describe associations between demographic data and recruitment and retention queries. Qualitative responses were recorded, transcribed and then coded for recurring themes.

Results

The present public sector optometry workforce comprises mainly young (73%), Black (70%), females (66%). They chose to work in the public sector to 'make a difference', and was also attracted by 'good working hours' and 'job security'. Fifty three percent of the sample chose to work in the public sector due to a study bursary, for which there was a statistically significant association for race ($p =$

0.01), gender ($p = 0.05$), and background origin ($p = 0.05$). To aid their retention in public service: improved salaries, career progression, recognition by supervisors, improved management relations and improved equipment was highest ranked. From the district co-ordinator's perspective, recognition, improved salaries, career progression and improved equipment and infrastructure are imperative to retain optometrists. District co-ordinators also pointed out that a devolved health system places more managerial and financial autonomy at the level of the hospital management which can cause delays in career progression and procurement of equipment.

Discussion

The demographic profile of the currently serving public sector optometrists poses many human resource challenges and opportunities. While universities have selected students to better redress past inequities in higher education, there still appears to be a lack of representation of white and coloured optometrists in the public sector. Marketing of the profession of optometry needs to be done by innovative methods over and above mainstream media, to be more attractive to rural candidates. From the Department of Health's perspective, the provision of study bursaries is the prime method to increase optometrists in health districts. At the same time, however, it creates a multi-generational mix of health professionals (Millennials and Generation X's, in this sample) with each requiring their own unique retention interventions and methods of workforce motivation. Review of salaries and advocacy for comparable salaries requires attention if the Department of Health wishes to retain optometrists with financial incentives. More engaging and responsive human resource management systems are needed at the hospital level to better articulate career progression for professionals. Processes for the efficient procurement of equipment are imperative to not only retain optometrists, but also to provide quality service delivery. From a District Co-ordinator's perspective, despite decision making powers existing at the institute level, there needs to be regular, transparent communication and discussion of plans for better synergy between hospital management, optometrist and district office.

Conclusion

Universities appear to recruit a representative proportion of optometrists, but more attention needs to be paid to rural origin and prior exposure of candidates. Departments of Health use a study bursary incentive to recruit health workers, but much consideration needs to be given to financial (salaries comparable to other allied health professionals, rural allowance) and non-financial incentives (career pathway development, recognition by management, equipment and infrastructure) to retain optometrists. Emphasis needs to be placed on human resource management at hospital level, with clear and well-articulated programme planning and budgeting shared with all.

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List of Acronyms

BHVI	Brien Holden Vision Institute
BREC	Biomedical Research Ethics Committee
CME	Continuous Medical Education
CPD	Continuous Professional Development
CS	Community Service
DC	District Co-ordinator
DHS	District Health System
DoH	Department of Health
HKRM	Health Research and Knowledge Management
HPCSA	Health Professional Council of South Africa
HRH	Human Resources for Health
HRM	Human Resources Management
HSS	Humanities and Social Sciences Ethics Committee.
IAPB	International Agency for the Prevention of Blindness,
ICEE	International Centre for Eyecare Education
ISRDS	Integrated Sustainable Rural Development Strategy
KZN	KwaZulu-Natal
NGO	Non-Governmental Organisation
OSD	Occupational Specific Dispensation
PHC	Primary Health Care
PSCBC	Public Service Co-ordinating Bargaining Council
PSO	Public Sector Optometrist
RA	Rural Allowance
SSA	Scarce Skills Allowance
UKZN	University of KwaZulu-Natal
VAO	Vision Aid Overseas
WHO	World Health Organisation

CHAPTER 1: INTRODUCTION

The World Health Organisation (WHO) estimates that there are 59.2 million health workers globally (World Health Organisation, 2006), however, their distribution is not proportional to the need. Canada and the United States (US) have 37% of the world's health work force with 10% of the global burden of disease but spend more than half of the world's financial resources for health. Africa, in contrast has more than a quarter of the world's disease burden but access to 3% of health workers. Health expenditure in Canada and the US account for 50% of global health costs, while less than 1% is spent in Africa, in spite of funds from abroad (World Health Organisation, 2006).

The migration of health workers from Africa to developed nations poses a threat to service delivery in Africa. A study in 2000 showed that one-fifth of all African-born doctors, and one-tenth of all African-born professional nurses, were living and working overseas (Clemens and Pettersson, 2008). Furthermore, it is predicted that a shortage of health workers will impact on meeting the Millennium Development Goals (MDGs) (World Health Organisation, 2006; Clemens and Pettersson, 2008).

The recruitment and retention of human resources for health (HRH) is a contentious issue (World Health Organisation, 2004). At the 57th World Health Assembly in 2004, the Director General was urged by the WHO to formulate a code of practice on the international recruitment of health personnel, particularly from developing countries. Retention strategies devised by governments are used to keep HRH within an enabling environment, offering financial and non-financial incentives to allow their workers to continue a long and productive relationship within the health care environment.

In 1994, the South African government inherited a disparate health care system with an inequitable distribution of services (South African Government, 1997). As part of its Restructuring and Development Programme (RDP), the White Paper on Health proposed a re-structuring of the previous health system with a focus on broad-based and equitable access to health care. Core to this was the development of the District Health System (DHS).

In the DHS, Primary Health Care (PHC) is the main vehicle to provide health care access for all people. Based on the complexity of the case and the need for further investigation, patients are referred to subsequently higher levels of care (World Health Organisation, 2006). While the South African government's policy on health has the DHS as a cornerstone, various services, most notably eye care, have been poorly defined.

Global prevalence of vision impairment and blindness studies estimate that 32.4 million globally were blind in 2010 (Stevens *et al.*, 2013); with at least 4.8 million people residing in sub-Saharan Africa (Naidoo *et al.*, 2014a). It is predicted that this number will increase if necessary interventions are not put into place to provide basic eye health screening, detection and treatment by eye health professionals (International Agency for the Prevention of Blindness, 2014).

In 1998, the WHO, partnering with the International Agency for the Prevention of Blindness (IAPB), launched the VISION 2020: Right to Sight programme. It sought to mobilize all eye health assets, including private and public professionals, academic institutions, professional bodies, non-governmental and governmental agencies, in a concerted effort to eradicate avoidable blindness by the year 2020 (Stevens *et al.*, 2013). VISION 2020 identified and targeted 5 main causes of avoidable blindness that constitute 80% of the world's blind, namely: cataract, onchocerciasis, trachoma, refractive errors, low vision and childhood blindness (Stevens *et al.*, 2013). The VISION 2020 programme identified key components in its planning to meet the challenges above namely human resources, infrastructure and disease control. For planning purposes, human resources for eye health service provision are prescribed per million population to a health district comprising of 1 million people. Using this ratio, one optometrist is prescribed per 250 000 people for developing and resource limited countries (Stevens *et al.*, 2013).

The Health Professions Council of South Africa (HPCSA) reports that approximately 3 464 optometrists are registered with this professional body (Health Professions Council of South Africa, 2014a). Four universities produce an average of 200 graduates annually but without compulsory community service for graduates, there is no direct pathway for optometrists into the public sector which serves 80% of the population. The present teaching of optometry caters very little for community and rural health exposure. Historically, the slow response of government in providing full-time posts further discourages optometrists engaging within the public sector, except on a part-time basis or as compulsory continuous professional development (CPD) practice. As of 2006, the CPD stipulation for public sector involvement was removed (Moodley, 2014).

The lure to earn foreign currency further affects the retention of optometrists within South Africa. Oduntan *et al.*, (2007) found that of 77% of final year students, half (50,3%) of participants planned to go overseas to practice [with the UK (36,1%) and Australia (15%) the most common destinations].

However, a study by Lecouna, (2007), found that only 74 optometrists, that were supported by Private-Public Partnerships (PPP's) and Non-Governmental Organizations (NGO's), served in the public sector in South Africa. While there has been an increase in the number of provincial posts created over the last 5 years, they appear to be inadequate to accommodate the backlog of existing patients and incident cases.

With fewer than 20% of South Africa's 51,8 million population subscribing to some form of medical aid or health insurance, this results in approximately 41 million people reliant on some form of public health care service (Statistics South Africa, 2014a). Anecdotal reports state that there are 300 public sector optometrists in South Africa (Naidoo, 2014)

Using a population of 41 million with a suggested optometrist-to-patient ratio of 1: 250 000 people as suggested by VISION 2020, this calculates to a total of 164 optometrists needed to serve the present public eye care needs (World Health Organisation, 2007).. While this optometrist-to-patient ratio is recommended ideal for developing nations, it does not take into account the disparity in distribution of human resources, as in South Africa. Furthermore, in developed nations, the optometrist-to-patient ratio is closer to 1:10 000 (Holden and Resnikoff, 2002), thus exacerbating the need for more optometrists. Further, the VISION 2020 targets for optometry are based on the absolute minimum for resource limited countries and must be compared to the fact that in developed countries the ratio is closer to 1 per 10 000 population.

Medium to long-term strategies to build public sector resources would include legislating community service and integrating a public health approach into the undergraduate curriculum. At present, compulsory community service is being implemented for some health care professionals but has been delayed for optometry with no definite date for implementation. Fostering a public health approach to training optometrists requires much time and input from key educators and curriculum designers. In this context, it is evident that there is a need for short-term strategies to attract recent graduates to the public sector and to retain the present public sector cadre.

KwaZulu-Natal (KZN) is one of nine provinces on South Africa's east coast. With a population of 10.6 million people, it is the largest and most populated province (Statistics South Africa, 2014a). In terms of human resources for eye health, the province has only recently (relative to medicine or the other allied health professions) developed its public sector optometry systems. Posts have been created by the Department of Health in several hospitals throughout the province. Presently, most district and regional hospitals have at least two optometrists that provide refraction, spectacle and referral services at the hospital they are stationed. Anecdotal evidence suggests that there is a high level of mobility amongst these public sector optometrists with staff not being retained for long periods of time, despite efforts by the Department of Health to retain them within the system.

Several studies looking at the retention of health care workers have been undertaken (National Department of Health, South Africa, 2002; McAuliffe and Barnett, 2009). For doctors in South Africa, a combination of financial rewards (Scarce Skills and Rural Allowance) and non-financial rewards (accommodation, continuous professional development, and strong management) were cited as key factors to retain them in public service.

A limited body of knowledge exists in South Africa on the practice trends of future and present optometrists regarding public sector work. Fine (1997) investigated the perceptions, expectations, and realities of a graduating class, while Oduntan *et al.*, (2007), looked at final year employment choices post-graduation. Nirghin *et al.*, (2011) investigated institutional, gender and racial profiles of all qualified optometrists while Mashige *et al.*, (2013) questioned final year students on their perceptions of the proposed community service for optometrists. With respect to public sector optometrists alone, no studies have included this cadre in a South African healthcare context at the time of this study.

This research study will attempt to devise a demographic and educational profile of the current public sector optometrists in KwaZulu-Natal. It will also attempt to understand key interventions that could be implemented to retain these optometrists in the public sector and bring attention to recruitment factors for future efforts. Lastly, several districts in KZN province have listed HR, recruitment and retention challenges as a research priority (KZN Department of Health, 2014a). This study could also inform provincial governments' policy development, and create an understanding of strategies and challenges faced by Department of Health officials in employing public sector optometrists in KwaZulu-Natal.

CHAPTER 2: LITERATURE REVIEW

2.1 INTRODUCTION

This literature review broadly discusses four key areas. The first section provides a global scenario of the human resource crisis and the interventions that have been instituted in response. Recruiting health professionals for public service requires cognisance of many elements to find the appropriate candidate, which the second section discusses. The third section reviews strategies previously employed to retain health care professionals within a public sector setting. Finally, the present day scenario, with regards to optometrists in the public sector in KwaZulu-Natal province is discussed.

2.2 HUMAN RESOURCES FOR HEALTH (HRH)

2.2.1. THE GLOBAL HEALTH WORKFORCE: MAGNITUDE AND DISTRIBUTION

The WHO estimates there are 59.2 million health care workers globally (World Health Organisation, 2006). This includes a combination of 'health service providers' (personnel involved in direct delivery of health care) and 'health management and support workers' (support staff, administrators, financial personnel etc.).

Although health service providers comprise 67% of the work force globally, in higher income countries, health management and support workers are more numerous. The opposite occurs in low to middle income countries (World Health Organisation, 2006). Table 2.1 shows the distribution and density (per 1000 population) of the global health workforce. Health workers are mal-distributed globally and within countries. Nations with a lowest relative need (The WHO Americas, for example) are home to the highest numbers of health workers, while those with the largest disease burden (The WHO Africa region) contend with a smaller health workforce (World Health Organisation, 2006). Figure 2.1 demonstrates the disparity between global disease burden and global work force.

Table 2.1 Distribution and density (per 1000 population) of the global health workforce (World Health Organisation, 2006).

WHO region	Total health workforce		Health service providers		Health management and support workers	
	Number	Density (per 1000 population)	Number	Percentage of total health workforce	Number	Percentage of total health workforce
Africa	1 640 000	2.3	1 360 000	83	28 000	17
Eastern Mediterranean	2 100 000	4.0	1 580 000	75	520 000	25
South-East Asia	7 040 000	4.3	4 730 000	67	2 300 000	33
Western Pacific	10 070 000	5.8	7 810 000	78	2 260 000	22
Europe	16 630 000	18.9	11 540 000	69	5 090 000	31
Americas	21 740 000	24.8	12 460 000	57	9 280 000	43
World	50 220 000	9.3	39 470 000	67	19 750 000	33

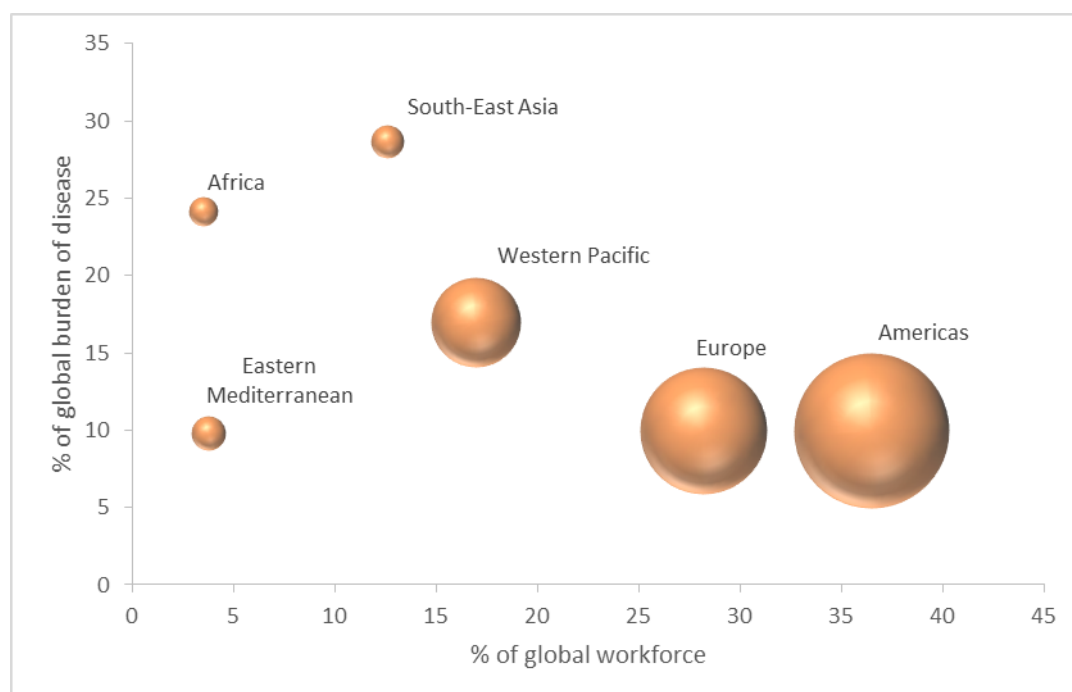


Figure 2.1 WHO regional distribution of health workers by level of health expenditure and burden of disease

2.2.2 THE GLOBAL RESPONSE TO THE HEALTH WORKFORCE CRISIS

In response to the wide scale migration of health workers from developing to developed countries, a 'Code of Practice on International Recruitment of Health Personnel' was adopted by the 63rd World Health Assembly in Geneva, in 2010 (World Health Organisation, 2010a). The Code takes into account the responsibilities and rights of health personnel and the source and destination countries. Ten articles were proposed by The Code, advising regulation of health personnel recruitment to both source and destination countries. This was done to minimise damage to developing countries who were challenged to meet the basic health needs of their populations

Evaluations of the Code in donor and recipient countries yield differing points of view, however. A recent study on the impact of the Code in Australia, Canada, UK and USA found it to have no 'meaningful impact on policies, practices or regulations in their countries' (Edge and Hoffman, 2013). Several African countries (Burkina Faso, Cameroon, Chad, Congo, Djibouti, Eritrea, Guinea, Nigeria, Zimbabwe, and Zambia), have integrated components of the Code, within their HRH development planning.

While South Africa's response to the Code has not yet been fully articulated, larger HRH challenges have emerged, as evidenced in a study by Dambisya *et al.*, (2014) in nine countries in East, Central and Southern Africa. It was found that 'African policy interests were not all included in the Code, or not included to a sufficient extent'. Also, participants were not as concerned with external migration as they were with internal migration (rural to urban, public to private) and shortages of health workers, in general. It would appear that while the Code of Practice is an important framework for recruitment of health workers, other facets of the global HRH crisis needs to be addressed.

Prior to the Code, the Global Health Workforce Alliance (GHWA, was created in 2006, to 'identify, implement and advocate for solutions to the global HRH challenge' (Global Health Workforce Alliance, 2014). It is a partnership of national governments, civil society, international agencies, finance institutions, researchers, educators and professional associations. Through their efforts, several global fora on HRH brought together WHO affiliated countries to discuss and create resolutions for the HRH challenges.

In March 2008, the First Global Forum on Human Resources for Health was held in Kampala, Uganda. It called for the immediate and sustained action to resolve the shortage of health workers around the world. Emerging from the forum, was the Kampala Declaration, which in its six key areas highlighted the need for 'retaining an effective, responsive and equitably distributed health workforce' (World Health Organisation, 2008b).

The Second Global Forum in Bangkok, in 2011, reviewed progress, challenges and successes since Kampala. It noted that countries had disjointedly implemented retention policies and could not be evaluated properly or have lasting impact. This forum also provided recommendations on recruitment and retention efforts that countries should address relevant to its own needs (World Health Organisation, 2011). Recife, Brazil, hosted the Third Global Forum on HRH in 2013. In the emerging Recife Declaration, there was recognition for many measures to be implemented according to national circumstances, one of them being the ‘improvement of health workforce distribution and retention’ (Campbell *et al.*, 2013).

While the efforts of the Code of Practice and the subsequent declarations have placed HRH on the agenda of many countries globally, there is still a massive shortage of some 7.2 million health workers, with 83 countries facing a health worker crisis. Sub-Saharan Africa bears the brunt of this shortage with doctors, nurses and midwives being the most conspicuously absent (Campbell *et al.*, 2013). The preceding pages have attempted to create a global scenario and the need for countries to mount a national response given the worldwide prominence of the HRH challenges. The following sections describe the multi-factorial nature of recruiting and retaining the appropriate health worker into a public/rural setting.

2.3 RECRUITMENT OF HEALTH WORKFORCE

From a corporate perspective, recruitment refers to the process of ‘attracting applicants who comply with the criteria of a position to be filled in a company’ (Meyer and Kirsten, 2005). If the appropriate candidate is recruited and selected, this could ensure a motivated and productive employee who delivers services to the organisation. While this basic tenet of employee recruitment can be applied to the health workforce, attention must also be paid to those recruitment factors that influence a health workers choice to serve in a public sector role. This section examines these factors documented in previous studies of the medical and allied health professions. It will also attempt to relate these findings to eye health in general and optometry, specifically.

In studies of recruitment (and retention) of health care workers, there is an overwhelming focus on medical doctors in the literature (Buykx *et al.*, 2010) fewer still amongst allied health professionals. In the absence of such evidence for optometry, this review highlights lessons learnt from the medical and allied health profession models.

2.3.1 RURAL ORIGIN VS URBAN ORIGIN OF HEALTH WORKERS

A 2009 Cochrane review stated that rural origin of medical students “appears to be the single factor most strongly associated with rural practice” (Grobler *et al.*, 2009). While there is a body of evidence to show that students rural background increases their chances of returning to rural communities

following completion of their studies, some researchers even question the definition of ‘rural’ (Wilson *et al.*, 2009). According to the United Nations, no single definition can be applied to urban and rural populations for all countries, due to national differences in the characteristics that distinguish urban from rural areas (United Nations, 1998). For the purposes of this study, rural and public service will be regarded in the same light.

In trying to understand the link between rural background and rural practice, several profiles of the rural/public sector worker has emerged. A systematic review has shown that the rural practicing physician was more likely to have grown up and completed high school in a rural area (Wilkinson *et al.*, 2000). The physician was also most likely to have a partner who had a similar background. In another comprehensive review of national and internationally published reports, Laven and Wilkinson (2003) found that having a rural background was approximately 2 to 2.5 times more likely to be associated with rural practice. It must be noted, however, that the review looked only at medical doctors, in the USA, Canada and Australia (Laven and Wilkinson, 2003). In South Africa, researchers investigated doctors from rural origins and whether they were currently practicing in rural areas (de Vries and Reid, 2003). Their findings were not dissimilar from international studies, with rural-origin medical students more likely to choose rural careers than urban-origin students.

2.3.1.1 Allied health professionals and rural origin

Similar studies in the medical profession have been conducted in the allied health disciplines, as well. More than half (55%) of 652 interviewed Australian pharmacists practicing in rural areas, were found to have a rural background (Smith *et al.*, 2013). In the Ukraine and Thailand, pharmacists were motivated to work in rural areas but their rural origin was not a decisive factor for their choice (Anzenberger *et al.*, 2011; Thammatacharee *et al.*, 2013). A rural/remote origin was identified as an important recruitment factor in a cross-sectional survey of rehabilitation professionals (audiologists, occupational therapists, physiotherapists, and speech–language pathologists), in Northern Canada (Winn *et al.*, 2014).

In South Africa, Dambisya *et al.*, (2014) found a statistically significant relationship between public sector pharmacists and their rural background. A review of intake characteristics of medical schools (medicine, dentistry, physiotherapy and occupational therapy) in South Africa for the 1999-2002 period was conducted. While the proportion of rural-origin students in the different courses was high, the overall proportion of rural-origin students was considerably lower than the national rural population ratio of 46%. For the above mentioned studies concerning allied health professionals, the most striking observation is that the discipline of optometry is conspicuously absent from research and investigation.

2.3.1.2 Optometry and rural origin

Few studies have been conducted that investigate the rural background of optometrists, with even fewer still in Africa. Boadi-Kusi *et al.*, (2014) profiled 280 students from the two optometry institutions in Ghana. It was noted that just under 80% of students were from urban areas, which was a worrying trend considering that approximately 49% of Ghanaians live in rural areas. In South Africa, a study in 1997, asked 65 final year students, from Rand Afrikaans University (RAU), department of optometry, on their career opportunities, education and preparation for entry into the optometry profession (Fine, 1997). While the author did not query the background of their origin, at least a third of graduates chose to not return to their towns of origins but rather stay in the large cities. A similar study on future practice trends, conducted in four South African Universities offering optometry, also found a similar proportion of students who preferred to practice in an urban area, after graduation (Oduntan *et al.*, 2007). In 2011, Mashige conducted a profile of South African optometry students and found just over a third (279 out of 387 participants) were of urban origin.

It must be noted that, unlike the previous studies in the medical field, there was no follow-up of optometry graduate cohorts over a defined period of time. For future research, a longitudinal study of a cohort of optometry students, noting their background, could bring evidence to the selection of students with rural origin and their final practice modality. Finally, the findings from aforementioned studies suggest that the South African situation (medical and allied health professionals) is similar to that in other countries, with rural-origin students more likely to choose rural careers than urban-origin students. Given the above, it would suit educators, policy makers to review selection criteria.

2.3.2 GENDER AND THE HEALTH WORKFORCE

The World Health Organisation defines gender as the ‘socially constructed roles, behaviours, activities, and attributes that a given society considers appropriate for men and women, while "sex" refers to the biological and physiological characteristics that define men and women’ (World Health Organisation, 2012). It is these socially constructed roles that can lead to gender inequalities in both health status and access to health care. This section explores previously conducted research into gender disparities and profiling of health care workers in general and eye health, specifically.

Regarding doctors, it was previously reported that men were more likely to enter the rural health workforce. Studies from Canada and the United States found rural doctors to be most likely male (Carter, 1987; Potter, 1996; Fryer *et al.*, 1997). Other studies have shown that the likelihood of male rural doctors increased with rural undergraduate training (Rabinowitz *et al.*, 1999), towns with less than 20 000 population (Strasser, 2001) and having a partner with a rural background (Wilkinson *et*

al., 2000). While the abovementioned studies have found associations between gender and rural practice/placement, there have also been studies in Canada (Easterbrook *et al.*, 1999), USA (Rabinowitz *et al.*, 1999), and Australia (Rolfe *et al.*, 1995) that have found no association between them.

In the health sector, women are globally known to make up 75% of the workforce (World Health Organisation, 2008a). In facility-based surveys in Jamaica, Sri Lanka and Zimbabwe, women were found to make up 70% of the total workforce (Gupta and Dal Poz, 2009). Other investigations, however, reveal that while women may outnumber males, they are found largely in lower-status health occupations (nurses, midwives) and significantly under-represented among clinical officers and medical doctors (Exavery *et al.*, 2013) and as dentists, medical assistants, pharmacists, managers/trainers and doctors (Zurn, 2004). In some African studies, the reasons for this disparity range from socio-cultural beliefs of gender roles, fewer enrolment of women in science related subjects at universities, to a general disinterest in medicine as a career at medical school (Exavery *et al.*, 2013; Boadi-Kusi *et al.*, 2014).

2.3.2.1 Gender and eye health workers

As previously alluded to, there are few studies regarding gender distribution of HRH in eye health and optometry. There is a body of evidence regarding productivity and acceptance of female eye health workers, however, in East Africa, female cataract surgeons were found to have less nursing support, less clinical equipment and were half as productive as their male counterparts (Courtright *et al.*, 2007). They also had difficulties in engaging hospital directors (all men) to obtain relevant support. In Tanzania, female trichiasis surgeons were less productive than male counterparts (Lewallen *et al.*, 2007). While the study did not investigate the reasons behind lack of productivity for women, the study did allude to improvements in support and supervision. In Rwanda, female village eye health workers had lower levels of service delivery than their male counterparts, with reasons relating to traditional views of women and patients' preference to receive health care from one gender or the other (Muller, *et al.* 2010).

In West Africa, Eze and Maduka-Okafor (2009), conducted an assessment of the eye care workforce in Enugu state, Nigeria in 2009. The author noted a higher proportion of females to males (approximately 6:1). While the study does not offer a reason for this mal-distribution, the study does note the negative implications for workforce mobility, since married women in Africa are less mobile than their male counterparts. In Ghana, more male students were found to be registered for optometry than women (Boadi-Kusi *et al.*, 2014). This was attributed to fewer women studying science (a prerequisite for optometry) in high school, the low rate of female enrolment in tertiary education in Ghana and the greater propensity for males to study optometry.

A similar review of racial, gender and institutional profiles of South African optometrists from 1930 – 2008 was conducted (Nirghin *et al.*, 2011). In contrast to Ghana, there were more female students enrolled in optometry after the year 1994. This was a significant year in the history of the country as it was the year of South Africa's independence from a previously apartheid-led government. At the end of 1994, a National Commission on Higher Education (NCHE) was created to redress the past imbalances in higher education (Odhav, 2009). As part of its three pillar approach to transform Higher Education, the NCHE called for 'increased participation' from previously disadvantaged races and genders. This could have had implications on selection criteria at higher education institutes contributing to the increased numbers of women admitted to optometry. The author also suggests that the gender-shift could be due to women having more interest in optometry or they had better grades than the males, hence were given preference in the admission process or males preferring professions outside health sciences (Nirghin *et al.*, 2011).

For the aforementioned optometry studies, it must be noted that they were both cross-sectional and retrospective. Inferences about future placement within public sector and associations between genders cannot be made. Research into how these cohorts fared in their choice of work in a longitudinal manner might yield some association between optometrists and gender. Finally, in a detailed commentary on the gender imbalance in the health workforce, Newman (2014) highlights the importance of larger societal gender issues that impact recruitment and retention of the health workforce. At a broader level, gender equality should be considered from a HRH research, leadership, and governance perspective. There needs to be a focus on strengthening employment systems, amongst others to achieve equitable gender representation and ultimately health systems outcomes.

2.3.3 FAMILY INFLUENCE AND ROLE MODELS

The influence of family in career choice is a common phenomenon (McQuerrey, 2014). While children can grow up idealising 'parents' professions, some parents may intentionally or unintentionally steer children toward certain career paths.

Studies, using a social cognitive model, noted that motivations by parents was found to have significant direct effects on learning experiences, especially in mathematics and science (Ferry *et al.*, 2000). These learning experiences, in turn, directly influenced choices on outcome expectancies and goals. Another study has noted that a parent's level of education and exposure to mathematics is known to influence a child's choice of medical career in the United States (Science Daily, 2014).

A study of career choice and environmental factors that have influenced choices in Asian students found that environmental factors like family, school counsellors, teachers, friends, and government

played a significant role (Singaravelu *et al.*, 2005). The influence of parents in career choice of medical school students in the United Arab Emirates was further emphasised in a study by Ausman *et al.*, (2013). This study also noted that non-familial social factors like ‘friends’ had a significantly weak influence on the career choice of the medical students.

2.3.3.1 Medicine and allied health professions

Pinchot *et al.*, (2008) confirmed his hypothesis that a student's decision to pursue a career in surgery was significantly influenced by previous exposure to family members who were surgeons. Students that had family members as surgeons showed a significantly higher likelihood than students with non-surgical family members of pursuing a surgical career/residency. Similar studies in rheumatology (Kolasinski *et al.*, 2007), urology (Shah *et al.*, 2004), and family medicine (Puertas *et al.*, 2013) career choices noted the influence of family and role models.

The influence of familial and non-familial social factors was explored by Maharaj (2008) among allied health professions. Students under investigation included physiotherapy, chiropractic, medicine, and occupational therapy in KwaZulu-Natal. The results revealed that parents were a major factor influencing career choice, as were significant ‘other’ people. However, siblings, peers and television did not have a major influence. Among nursing, nutrition and physiotherapy students in Brazil, the influence of families on career choice was noted through their expectations and wishes (Ojeda *et al.*, 2009).

There are only a few studies in Africa that investigate familial influence on eye health professionals. Studies by Mashige and Oduntan, (2011) and Boadi-Kusi *et al.*, (2014) have reported little or no influence of parents or non-familial relations in the choices made by optometry students.

2.3.4 CAREER AND INSTITUTE CHOICE

Irrespective of the influence of family on career choice, the future health professional has to invariably choose a career and an institute to pursue their studies. There is a body of knowledge on career motivations and intentions for persons choosing medical careers and subspecialties, however, there is limited literature regarding career choices of allied health and eye health professionals.

Regarding the allied health sciences in South Africa, Naidu *et al.*, (2013) investigated the career and practice intentions of health science students at three medical schools. Pharmacy, physiotherapy, occupational therapy, sports science, and speech-language therapy students rated financial reasons, career development, learning opportunities, and wanting to serve the community as prime motivators for their career choice.

2.3.4.1 Ophthalmology and optometry career choices

Canadian doctors primarily chose to study ophthalmology for the ‘intellectual stimulation’ as well as flexibility, mentorship, and earning potential (Noble *et al.*, 2007). For newly qualified doctors in the UK, ‘enthusiasm/commitment: what I really want to do’ and ‘hours and working conditions’ were most influential in their career choice of ophthalmology (Lambert *et al.*, 2008). In Nigeria, factors that influenced the choice of ophthalmology amongst participants were mainly: (i) interest in the specialty; (ii) opportunity to combine medicine and surgery; (iii) lifestyle consideration (Oluwole, 2012).

With respect to optometry as a career choice, there is limited evidence of motivations for choosing this career. In Saudi Arabia, factors influencing career choices included altruism, career prestige and the introduction of the new Doctor of Optometry programme that has more ocular disease and treatment focus, were the most commonly cited factors (Oluwole, 2012). In Ghana, ‘job availability after graduation’ and ‘desire to help other people’ was most influential in choice of career while factors affecting choice of institute were ‘preference for an institution’ and ‘proximity to home’ (Boadi-Kusi *et al.*, 2014).

More relevant to this study is Mashige and Oduntan’s research in the South African optometry institutes. They also found that a ‘desire to help others’ and ‘job availability after graduation’ as reasons for choosing optometry. In terms of institute choice, ‘cost of university fees’ and ‘close proximity to home’ were deciding factors (Mashige and Oduntan, 2011).

Concordant with societal belief that a characteristic of health workers is their concern for others, an altruistic spirit appears to be a prime motivation for a career choice in optometry.

2.3.5 EXPOSURE TO RURAL/PUBLIC SERVICE

As far back as the 1970’s, medical educators noted a need to recruit doctors with rural backgrounds and to incorporate more rural medicine in their training programmes (Dunbabin and Levitt, 2003). By the late 1980’s, researchers like Talley (1990) noted four key observations:

1. Students of rural origin were most likely to return to rural areas to practice medicine
2. Recent medical graduates trained in rural areas were most likely to choose rural practice
3. Family medicine (general practice) was the key discipline of rural health care
4. Increased likelihood of recent medical graduates practicing close to where they train.

Given the second observation, prior exposure to rural training can be considered influential in career choice, placement post-graduation or in selection of subspecialties. The discussions hereafter refer to examples of formalized medical programmes generally and optometric training programmes specifically.

The USA, Canada and Australia have medical programmes that expose students to rural and remote medicine during their undergraduate years and have described successes in positioning medical professionals in less populated areas (Dunbabin and Levitt, 2003). Japan and Norway have similar medical programmes that focus on rural intake of students and decentralized medical curriculum with repeated rural clinical rotations.

In sub-Saharan Africa, medical schools have structured community exposure and community based education programmes to better prepare students for national health challenges (Mullan *et al.*, 2011). At Jimma University, Ethiopia, community-based education is pivotal to the educational mission, while the College of Health Sciences at Makerere University, Uganda, includes regular exposure to patients in rural communities. At Gezira University, Sudan, the curriculum includes community orientation for medical students, faculty, staff, and graduates. It was also noted that compulsory national service is mandatory in several countries including Mozambique, South Africa, Nigeria, and Ethiopia and to obtain clinical service from graduates and to increase exposure via rural placements. The percentage of graduates in general rural service was positively correlated in countries that had national service programmes.

In South Africa, doctors' and allied health professionals', exposure to rural practice, via rural electives and holiday work was influential in their practice choice in rural areas (Couper *et al.*, 2007). A third of rural origin students in rural practice who felt that prior exposure influenced their final choice of where to practise (Couper *et al.*, 2007). Rural undergraduate exposure, within the South African medical educational training programme has contributed to rural participants being five times more likely to associate this exposure to their choice of where to practice as compared to urban-origin students (Reid, 2004).

2.3.5.1 Community service (CS)

Community service (CS) in South Africa was introduced for all doctors, dentists and pharmacists with physiotherapists, occupational and speech therapists, clinical psychologists, dieticians, radiographers in 1998, and for environmental health officers in 2003 (Reid, 2004). From Government's perspective, the main objective of CS was 'to ensure improved provision of health services to all citizens...and in the process...provide young professionals with an opportunity to develop skills, acquire knowledge, behaviour patterns and critical thinking that will help them in their professional development' (Reid, 2004). In the first year following CS, some doctors felt that they had made a difference, coped well and developed professionally (Reid, 2004) and 42% (out of 292 participants) planned to stay in the public sector. Other doctors and dentists raised concerns regarding negligible clinical supervision, poor accommodation, lack of equipment, and being under-utilised. In subsequent years, some provinces (Eastern Cape, KwaZulu-Natal, and Limpopo) were able to retain doctors for an additional

year (Ross and Reid, 2009). Doctors reported that their decision was due to opportunities to develop confidence as clinicians, opportunities for personal growth and good relations with hospital staff, amongst others. Their intention to continue for a further year was statistically significantly associated with the ethnic group, province, rural origin, allocation priority (institute choice) and bursary commitment.

Community service for optometrists in South Africa had not been implemented by the time of this study. The Professional Board for Optometry and Dispensing Opticians (PBODO), a board under the auspices of the Health Professions Council of South Africa, has given approval to legislation for the introduction of CS for optometrists by 2013. Anecdotal reports of officious bureaucratic processes within HPCSA and Government, lack of clinical facilities and supervision and resistance by the professional optometric association are possible reasons for the delay in implementation.

A recent study of students graduating from optometry schools across South Africa on the proposed CS was conducted (Mashige *et al.*, 2013). The investigation found almost 88% (of 119) of participants believing that CS would be beneficial to those patients with limited access to eye care. Seventy eight percent agreed that CS would be effective in alleviating diseases that cause blindness in South Africa while the same percentage felt that their education had prepared them adequately for community service. Influential factors for students considering CS are listed from most influential to least influential: salary, personal safety, living conditions, transport, integration with other health professionals and provision of holistic experience to eye care. While the execution of CS for doctors and other allied health professionals is not without its challenges and successes, it is envisaged that the eventual implementation of CS for optometrists will bring some balance to the mal-distribution of these eye health professionals in South Africa.

2.3.5.2. Exposure in optometric education

In sub-Saharan Africa, experiences of exposure to rural clinical and community work within an optometric programme has been described by Oduntan *et al.* ((2014). Table 2.2 lists schools of optometry in Africa and the regions they serve. In addition to the table below, schools have also been established in Mali (Brien Holden Vision Institute, 2014a) and Zambia (Vision Aid Overseas, 2015).

Table 2.2 Various optometry institutions in Africa, year of establishment, country, and programs offered (Modified from Oduntan, 2014).

Institution	Year established	Programs	Location/ Country	Region
University of Benin	1970	OD, MSc	Benin City, Nigeria	West Africa
Abia State University	1980	OD	Uturu, Nigeria	West Africa
Imo State University	1993	OD	Owerri, Nigeria	West Africa
Kwame Nkrumah University of science and Technology	2000	OD	Kumasi, Ghana	West Africa
University of Cape Coast	2002	OD	Cape Coast, Ghana	West Africa
Madona University	2004	OD	Elele, Nigeria	West Africa
Federal University of Technology	2010	OD	Owerri, Nigeria	West Africa
University of Limpopo	1975	BOptom, MOptom	Turfloop, South Africa	Southern Africa
University of KwaZulu-Natal	1980	BOptom, MOptom, PhD	Durban, South Africa	Southern Africa
University of Johannesburg	1984	BOptom, MPhil, DPhil	Johannesburg, South Africa	Southern Africa
University of Free State	2002	BOptom, MOptom	Bloemfontein, South Africa	Southern Africa
Universidade Lúrio	2008	BOptom	Nampula, Mozambique	Southern Africa
University of Mzuzu	2009	BOptom	Mzuzu, Malawi	Southern Africa
Kilimanjaro Christian Medical Centre	1979	DipOptom	Moshi, Tanzania	East Africa
University of Gondar	2005	BOptom, MSc	Gondar, Ethiopia	East Africa
Masinde Muliro University of Science and Technology	2009	BSc (Optom)	Kakamega, Kenya	East Africa
Al Neelain University	1997	BSc (Honours), MSc, PhD	Khartoum, Sudan	Central Africa

Optometry institutions in Ghana and South Africa have incorporated community exposure and sensitisation into their academic programmes respectively (Ovenseri-Ogbomoa *et al.*, 2011; Oduntan, 2006; Mashige, 2010). Integrated into the planning of the newly formed optometry schools in Mozambique, Eritrea, Malawi and Mali are Academic Vision Centres (Naidoo, 2014). These centres allow the community to access eye health services and also provide students with supervised application of theoretical concepts learned in the classroom, as demonstrated in Malawi (Brien Holden Vision Institute, 2014, 2014b).

A recent survey of 101 optometric institutes globally, has found that relevant public health education has been embedded in at least 85% of optometric undergraduate programmes. (Naidoo *et al.*, 2014b). Shickle and Hogg (2014) suggest that given the aim to reduce sight loss, optometrists (and by extension students) are in a prime position to participate in public health activities. More relevant to this study, is the sensitisation and exposure provided by the University of KwaZulu-Natal's Discipline of Optometry. There is a public health module that third year students are taught with the outcome 'to equip optometry students with the necessary skills to understand and interact with the broader society and to understand the impact of social, economic and environmental issues on the health of the patient' (University of KwaZulu-Natal, 2014). Students are also exposed to internal and external clinics, the primary objective of which is to deliver eye care to communities lacking access. These clinics involved supervised vision testing by students at hospitals, clinics, Red Cross Flying Doctors and other NGO-led activities (Mashige, 2010). An evaluation of one such external clinic (a 2 week supervised rotation on Phelophepa Health Care Train) found that skills developed on the clinic 'were better than institutional ones' and cases were 'good learning cases' (Hansraj, 2009).

The literature review suggests there has been a concerted effort from optometric institutions and non-profits to promote rural and public sector exposure within undergraduate training programmes. To date, however, there has been no research on the influence of these efforts on the career choice of optometrists post-graduation.

The recruitment of workers into a health workforce requires taking cognisance of many individual and societal factors discussed above. While these factors have been researched in the medical profession and in some allied health sciences, there appears to be a paucity of investigations in the field of Optometry. Following recruitment of the health worker, enabling strategies need to be employed to keep the professional motivated and satisfied.

2.4 RETENTION OF HEALTH WORKFORCE

Retaining and motivating health staff requires a combination of good management, effective human resource motivation and innovative methods (Willis *et al.*, 2008). Incentives to keep health staff motivated and productive are broadly divided into two sections: financial and non-financial incentives. The following sections describe global efforts to retain health staff, narrowing down to South African interventions and then relating them to public sector optometry in KZN, where possible.

2.4.1 FINANCIAL INCENTIVES

Several studies, in the USA and Australia, have described financial incentives (service-linked scholarships, loan-repayment programmes and bursaries) in recruiting and retaining health workers,

but few studies reveal the efficacy and outcome of these incentives (Wilson *et al.*, 2009). State-sponsored training in exchange for public service agreements was shown by the World Health Organisation to have had very little influence on the geographic distribution of health professionals (World Health Organisation, 2010b). Medical schools and professional associations have opposed the punitive nature of these agreements. In a systematic review of motivation and retention of health workers, Willis-Shattuck *et al.*, (2008) found that financial incentives should be integrated with other incentives, particularly for those health workers that choose to move away from home. Low salaries were found to be demotivating and devaluing health worker skills.

In South Africa, the Scarce Skills Allowance (SSA), Rural allowance (RA), and Occupational Specific Dispensation (OSD) financial incentives to retain health workers was implemented with varying results. In 2004, The Minister of Health announced a R500 million RA scheme ‘to encourage professional health workers to remain at rural health facilities’ (Health Systems Trust, 2014). Prior to this, however, there was intense discussion with the Public Services Bargaining Council (PSBC) regarding the criteria of the RA scheme. Eventually, it was resolved that two allowances would be offered – the RA and SSA. The table below differentiates the nature of these 2 schemes. Nodes refer to areas of greatest need as identified by the Integrated Sustainable Rural Development Strategy (ISRDS).

An initial study, shortly after implementation found that at least a third of professionals working in rural areas had opted to change their career plans following the RA. However, it was difficult to assess if this was due to the RA alone or in combination with the SSA (Reid, 2004).

Ditlopo *et al.*, (2011) found fundamental weaknesses in the RA/SSA policy design and implementation leading to limited eligibility for certain doctors and professional nurses while, Makapela and Useh (2013) found that the RA amount was insufficient and other non-financial factors needed addressing to retain health professionals .

In 2009, Occupational Specific Dispensation (OSD) was another scheme implemented by the Government to (Mahlati, 2009):

- i. Improve the Public Service’s ability to attract and retain skilled employees.
- ii. Provide differentiated remuneration dispensations for the vast number of occupations in the Public Service.
- iii. Cater for the unique needs of the different occupations.
- iv. Provide for a unique salary structure per occupation.
- v. Prescribe grading structures and job profiles to eliminate inter-provincial variations.
- vi. Provide adequate and clear salary progression and career pathway opportunities based on competencies, experience and performance

Occupational Specific Dispensation was partly successful in minimizing loss of health workers due to migration and also bringing South African medical officers closer to international public service salaries (George *et al.*, 2013). Conversely, poor planning, implementation (Ditlopo *et al.*, 2013) and administrative delays in paying doctors led to wildcat strikes by doctors and nurses. More importantly, Government planners did not take into account non-financial incentives (management support, better working conditions) that in combination with RA and SSA, OSD, may have led to more health workers retained in public service (George and Rhodes, 2012).

Table 2.3 Differentiation between SSA and RA (Reid, 2004)

Scarce Skills Allowance	Rural Allowance
Benefits all health professionals in list below, irrespective of location	Benefits health professionals below if they are working in locations defined by nodes, designated rural area or Provincial Head of Health
<p><u>15% of basic Salary</u></p> <ul style="list-style-type: none"> • Medical and Dental Specialists, Dentists, Medical doctors, Pharmacists, Pharmacologists <p><u>10% of basic salary</u></p> <ul style="list-style-type: none"> • Dental technicians, Psychologists, Dieticians & Nutritionists, Occupational therapists, Physiotherapists, Radiographers, Speech therapists • Professional nurses with qualifications in: Operating theatre technique, Critical care (intensive care), Oncology 	<p><u>ISRDS Nodes:</u></p> <ul style="list-style-type: none"> • 22% Doctors and Dentists • 17% Therapists, Pharmacists and Dental technicians • 12% Professional nurses <p><u>PSCBC designated rural areas:</u></p> <ul style="list-style-type: none"> • 18% Doctors and Dentists • 12% Therapists, Pharmacists and Dental technicians • 8% Professional nurses <p><u>Other inhospitable areas:</u></p> <ul style="list-style-type: none"> • To be determined by the Provincial Head of Health, depending on availability of funds, from within provincial budgets (Note: Community service professionals and Interns included)

2.4.1.1 Financial incentives for public sector optometrists

Occupational Specific Dispensation for Optometrists was also agreed upon in 2009 (Public Servants Association of South Africa, 2014). The OSD incentive contained details on pay grades and career progression pathways. It was incumbent upon the Department of Health in their respective provinces to implement this incentive (Mangoedi, 2014). The first round of Rural Allowances did not take into account optometrists. Anecdotally, this could have been due to the lack of representation of the profession within the Department of Health planning structures and the public sector organogram in

2004. At present, the various health worker trade unions are in the process of negotiating to have RA's included for optometrist's as well (National Union of Public Service & Allied Workers UPSAW, 2014).

2.4.2 NON-FINANCIAL INCENTIVES

Unlike financial incentives, non-financial incentives refer to those incentives that do not involve a transfer of monetary value (or equivalent) to the health worker (Mathauer and Imhoff, 2006). The following section highlights some of these non-financial incentives and attempts to relate them to health workforce motivation and satisfaction.

Systematic reviews of non-financial incentives have been conducted to highlight commonly recurring themes. These incentives include, but are not limited to: improving working and housing conditions (Buyx *et al.*, 2010), continuing medical education, equipment and infrastructure; improving hospital management relations (Couper *et al.*, 2007), recognition (Mathauer and Imhoff, 2006), appreciation by managers and colleagues (Dieleman *et al.*, 2003). These are some elements to motivate health workers, especially in rural/public service settings.

Researchers have also pointed out that financial incentives alone will not retain health staff (Buyx *et al.*, 2010; Henderson and Tulloch, 2008; Willis-Shattuck *et al.*, 2008), but rather in combination with a 'basket of interventions' it might be more successful (Mathauer and Imhoff, 2006).

2.4.2.1 Career management

Career management, (career progression, career development or career pathing) is the process of 'planning the advancement of individuals within an organisation in accordance with the organisational needs and objectives' (Meyer and Kirsten, 2005). The need for career management, in rural/public service, has been investigated in various settings and has revealed that career development ranked just after financial incentives as a key motivation (Willis-Shattuck *et al.*, 2008). In Ghana (Snow *et al.*, 2011), Malawi (Manafa *et al.*, 2009) and South Africa (Couper *et al.*, 2007), career progression has been cited as important for improved salary, chances of promotion and educational improvement. These studies also point out that career pathway development needs to fit within a larger policy and human resource management framework that involves performance appraisal, mentoring and support. This is echoed in South Africa's Department of Health HRH Strategy for the Health Sector: 2012/13 – 2016/17 (Health Systems Trust, 2011).

In the province of KwaZulu-Natal, a Provincial Policy Framework on Retention of Employees in the Workplace has been developed (KZN Department of Public Works, 2014). It requests 'departments to communicate existing opportunities for career growth to employees through career pathing.' The

framework mentions a 'Personal Development Plan' linked to his/her job description, current competencies, required competencies and the needs of the Department'. With public sector optometry, the introduction of the OSD initiative described several career pathways (and equivalent remuneration) for optometrists (Public Servants Association of South Africa, 2014). Optometrists can reach successfully higher grades of service and salary following a pre-determined number of years in service and performance evaluations. At the time of compilation of this review, no evaluation of the Province's Policy Framework or the OSD incentive's effectiveness in retaining health workers by career management had been published.

2.4.2.2. Continuous Professional Development (CPD)

The purpose of CPD (or Continuous Medical Education (CME)) is to 'assist health professionals to maintain and acquire new and updated levels of knowledge, skills and ethical attitudes that will be of measurable benefit in professional practice and to enhance and promote professional integrity' (Health Professions Council of South Africa, 2014b). The delivery of learning activities for medical professionals is to be conducted within an adult education paradigm and with greater learner involvement. The goal of CPD is not only acquiring new or updating knowledge, but also improving competence and ultimately the performance of the health professional, with final benefits to patients.

Doctors in rural areas are known to use activities best suited to their settings (journal clubs, visits by pharmaceutical representatives, lectures) (Van den Berg and De Villiers, 2003) and education and training opportunities have strong motivating effects (Willis-Shattuck *et al.*, 2008). The effect on improved practice patterns and better patient outcomes are questionable due to inappropriate educational formats (Shannon, 2006) and in some cases lack of proper evaluation and post-training follow-up (Tian *et al.*, 2007). To this end, in 2004, the HPCSA formed a CPD Committee to develop a CPD system across all 12 of its boards. Proposals for the new CPD system included learning activity formats that were accessible to rural/public service practitioners with guidelines for CPD service providers that include formal evaluation.

In terms of optometry, final year students, felt that CPD should be compulsory (Fine, 1997), while other students felt that CPD activities were an integral part of skills development. Mashige and Oduntan, (2011), who surveyed 117 qualified Optometrists in KwaZulu-Natal, reported that 59% of optometrists felt that 'obtaining CPD points was very important'. A similar percentage of participants rated the quality of CPD as 'good' (Mashige and Naidoo, 2010). Non-profit organisations, like the Brien Holden Vision Institute and ORBIS Africa among others, are known to regularly conduct or host CPD activities for public sector optometrists in KwaZulu-Natal (Nxumalo, 2014) in partnership with the Department of Health.

At the time of this review no formal evaluation of the impact of CPD on optometric practice in South Africa, had been reported. Further, studies into the influence of CPD activities on the motivation of optometrists in the public sector have not yet been reported.

2.4.2.3 Working environment and Infrastructure

Infrastructure, equipment and consumables are important for the functioning of any health service. Without proper equipment, in a safe working environment, health workers cannot provide a quality service to patients.

Reviews of non-financial incentives for health worker retention in Africa observed that upscaling infrastructure and improving the working environments to be commonly occurring themes (Dambisya *et al.*, 2014). This too, was observed in Lehman's systematic review regarding attraction and retention of staff in middle to low income countries in a selection (Lehmann *et al.*, 2008). A global survey of eye care equipment in tertiary hospitals found that private and NGO funded institutes were better equipped than government institutes (Patel *et al.*, 2010). The same study also noted that equipment is core to service delivery and quality and is closely related to the motivation of eye care personnel to do their job.

In 2005, the South African government launched the Hospital Revitalisation Programme – a long term plan to upgrade 30 hospitals over a 15 to 20 year period, followed by the remainder of the country's 405 hospitals (Parliamentary Monitoring Group, 2014a). As of July 2013, 5 (out of 11) of KwaZulu-Natal's health districts, had hospital projects approved for revitalisation (KZN Department of Health, 2014b). While the exact specifics of these refurbishments are not known, 5 of the hospitals are known to provide eye health services in a district or regional capacity.

2.4.2.4 Human resource management (HRM), relations and recognition of the health workforce

Recruitment and retention strategies need to be situated within a larger human resource management (HRM) system (World Health Organisation, 2010b). These systems include key aspects like workforce planning, workplace conditions and performance management. The WHO recognises that HRM is weak in many developing nations, except at a central level. Training, supporting and building the capacity of rural HR managers, are noted as interventions to strengthen HRM systems.

Recently, there is an increasing trend for Health Managers to create conducive climates that motivate staff and improve performance (Management Sciences for Health, 2002). A WHO analysis of demotivating factors to cause migration of health workers in six sub-Saharan countries (Cameroon, Ghana, Senegal, Uganda, Zimbabwe and South Africa) listed poor management (related to staff

welfare and work performance and recognition) as an important factor (Awases *et al.*, 2004). Other reviews have found that good working environment (Hagopian *et al.*, 2009) and personal support (Molinari and Monserud, 2008) are motivating factors for health worker satisfaction and retention. The aforementioned studies also point to HR management as a policy issue for hospital leaders and decision makers.

Recognition of health workforce staff – either by supervisors, staff, patients or by the institute was found to have a rewarding and motivating effect on health workers (Molinari and Monserud, 2008). In South Africa, the Department of Health's strategy for the health sector acknowledges that recognition of individuals, departments and institutes needs to be factored into national human resource planning. (Department of Health, 2014) Furthermore, this recognition needs to be embedded within a larger performance management plan (Public Service Commission, 2014). Organisations like the HPCSA and the Discovery Foundation are known to recognise outstanding health care professionals with monetary and non-monetary awards (Health Professions Council of South Africa, 2014c; Discovery, 2014). The latter organisation has a specific award for individuals and institutes in rural settings. Within the KZN Department of Health, Districts are known to host regular award recognition ceremonies for staff, and also feature staff in their quarterly newsletters (KZN Department of Health, 2014c).

The preceding sections have discussed components of retention that are important for health worker motivation, both in a health worker and optometric context. The following sections describe the landscape of public sector optometry in the province of KwaZulu-Natal.

2.5 PUBLIC SECTOR OPTOMETRY

2.5.1 REFRACTIVE ERROR AND OPTOMETRY

Refractive errors occur when the eye cannot clearly focus images onto the macula of the eye (WHO, 2013). Uncorrected refractive errors can result in blurred vision, which in severe cases can cause visual impairment. The four most common refractive errors are myopia (near-sightedness), hyperopia (far-sightedness), astigmatism (distorted vision resulting from an irregularly curved cornea) and presbyopia (age-related difficulty in near vision).

Globally, it is estimated that there are 285 million people who are visually impaired, 39 million of whom are blind ((Pascolini and Mariotti, 2010). Cataract and uncorrected refractive error are the major causes of visual impairment contributing 33% and 43% respectively. It has also been estimated that a further 517 million do not have spectacles or have inadequate spectacles to correct presbyopia (Holden *et al.*, 2008). This translates to an estimated 625 million people who are blind or vision impaired due to limited access to an eye test or spectacles (Brien Holden Vision Institute, 2014c).

Optometry has been defined as ‘a healthcare profession that is autonomous, educated, and regulated (licensed/registered), and optometrists are the primary healthcare practitioners of the eye and visual system who provide comprehensive eye and vision care, which includes refraction and dispensing, detection/diagnosis and management of disease in the eye, and the rehabilitation of conditions of the visual system’ (World Council of Optometry, 2014a). Amidst many contentious views of the profession regarding regulation and scope of practice (Masnick and Gayzey, 2004) the World Council of Optometry (WCO) adopted the Global Competency-Based Model of Scope of Practice in Optometry (World Council of Optometry, 2014b). This attempts to bring uniformity to scope of practice and to assist regulatory bodies with practitioner competency when optometrists move to other countries.

The model includes four categories of clinical care:

1. Optical technology services. Management and dispensing of ophthalmic lenses, ophthalmic frames and other ophthalmic devices that correct defects of the visual system.
2. Visual function services. Investigation, examination, measurement, diagnosis and correction/management of defects of the visual system.
3. Ocular diagnostic services. Investigation, examination and evaluation of the eye and adnexa, and associated systemic factors to detect, diagnose and manage disease.
4. Ocular therapeutic services. Use of pharmaceutical agents and other procedures to manage ocular conditions/disease.

The WCO suggests that: to be defined as an optometrist; a practitioner must provide services in the first two categories at a minimum (World Council of Optometry, 2014c). At the University of KwaZulu-Natal, optometry training covers all 4 categories in their undergraduate programme (Mashige, 2010).

2.5.1.1 Optometric human resources – sub-Saharan Africa

Despite the number of Optometry institutes in Africa, the optometrist-to-population ratio is low in virtually all African countries (Oduntan *et al.*, 2014). A study of sub-Saharan Africa’s progress towards meeting VISION 2020 suggested HRH ratio’s found that, amongst the 21 countries collectively surveyed, they would only reach a quarter of the suggested ratio, with only 1 country (Botswana) coming close in 2011 (Palmer *et al.*, 2014b). Predictions of performance until year 2020 show that 5 countries may increase their optometrist-to-population ratio, but still not achieve the suggested ideal ratio (Palmer *et al.*, 2014a).

There have been efforts by Non-Governmental Organisations (NGO's) and Ministries of Health to establish more schools of optometry across Africa (Brien Holden Vision Institute, 2014d) in an effort to produce more human resources. There have also been various training models for optometric education suggested to increase output of optometrists and simultaneously provide services (Naidoo, 2000). Considering the need in Africa, more optometric HR is needed with the establishment of more optometry institutions (Oduntan, *et. al.*, 2014). Oduntan also observed that staffing, infrastructural and training facilities are major challenges facing the majority of the existing institutions. There is also a need to place emphasis on postgraduate education to meet the institutional, national, and international professional training standards and to ensure sustainability of the profession.

The WHO has recognised these challenges in their 2014-2019 Global Action Plan (World Health Organisation, 2014). The plan calls for Member States to implement Human Resources for Eye Health planning, training and career development and retention strategies in a collective effort to develop and maintain a sustainable workforce. In the Africa-wide context, the International Agency for the Prevention of Blindness, has proposed a 3-prong strategy to ameliorate the situation (International Agency for the Prevention of Blindness, 2014). These objectives include:

1. Integrating eye health work force planning into broader HRH planning processes.
2. Developing competency frameworks for the five different levels of the eye health workforce (ophthalmology, optometry, allied eye health professionals, primary health care workers, and community health workers).
3. Strengthen the eye health training institutions across Africa.

As a member state of the WHO and a signatory to the VISION2020 campaign, South Africa has recognised that “as the most expensive asset, [we] have to manage human resources prudently... this means that the health sector has to be staffed by an appropriately skilled workforce that is able to respond to the burden of disease and citizens’ expectations of quality service” (Matsosi and Strachani, 2011). In 2011, the South African DoH launched their HRH Strategy for the Health Sector: 2012/13 – 2016/17 (Health Systems Trust, 2011).

The strategy is grouped into three thematic areas:

- a. supply of health professionals and equity of access;
- b. education, training and research;
- c. working environment of the health workforce.

Within these broad themes, 8 priorities were identified:

1. leadership, governance and accountability;

2. health workforce information and health workforce planning;
3. re-engineering of the workforce to meet service needs;
4. upscaling and revitalising education, training and research;
5. creating infrastructure for workforce and service development – Academic Health Complexes and nursing colleges;
6. strengthening and professionalising the management of human resources (HR) and prioritising health workforce needs;
7. ensuring professional, quality care through oversight, regulation and continuing professional development;
8. improving access to health professionals and health care in rural and remote areas.

Subsequent to the launch, it was incumbent upon provinces to use this strategy as a ‘guide to action’ to implement within their own local contexts (Matsosi and Strachani, 2011). While there is little mention of optometry in the strategy except for HR target setting, it is envisaged that these priorities will be applied to optometry and human resources for eye health, as well.

2.5.2 PUBLIC SECTOR OPTOMETRY IN KWAZULU-NATAL PROVINCE

Eighty percent of the South African population relies on the public health service and this includes the need for public sector optometrists. Given the large population of KwaZulu-Natal province, it would seem the need is significant.

KwaZulu-Natal is one of 9 provinces of South Africa. Situated on the eastern seaboard, it has a population of 10.7 million people (Statistics South Africa, 2014) with a rural population of some 55% (Kok and Collinson, 2006). It is also home to 6 of the most poverty-struck districts in the country (Health Systems Trust, 2014).

From a health perspective, the province is divided into 50 municipalities, 1 Metropole and 10 Health Districts (KZN Department Of Health, 2014d). From a management perspective there is reporting to a central provincial Department of Health structure from decentralized governance within the health districts. Eye health falls within the non-communicable disease gamut of the DoH.

2.5.2.1 Production and distribution of optometrists in KZN

The optometry programme at the University of KwaZulu-Natal, began in 1979, becoming the second institute, after the University of Witwatersrand) in South Africa to offer a 4 year graduate programme (Mashige, 2010) In 1984, the University of Durban-Westville, as it was known then, given government approval to enrol students of all races. As of 2008, the programme has graduated 765 students with a profile of 119 African, 516 Indian, 115 White, and 15 Coloured optometrists. For the 2009

undergraduate programme, of the 166 students selected, 51% were African and 46 % Indian. Nirghin (2011) has previously shown an increase in female optometrists graduating nationally and at UKZN.

There is limited data regarding the practice profile of optometrists in South Africa, KZN province notwithstanding. In 2010, 10% of private sector optometrists in KZN were based in a primarily rural setting (Mashige and Naidoo, 2010). In 2007, however, the HPCSA reported that 109 posts were available in the public sector, across the 9 provinces, with at least half of them unfilled. Anecdotal reports at the time revealed that at least 15 posts were filled in KZN province. The vacancy rate for optometrists and opticians was 65.9% in 2008/09 with an annual turn-over rate of 7.1% (KZN Department of Health, 2014d).

Table 2.4 Optometric posts in the public sector as at May 2007 (Modified from Joubert, 2009).

Province	Posts available	Posts filled	Vacant posts
Eastern Cape	Data not available	Data not available	Data not available
Free State	Data not available	Data not available	Data not available
Gauteng	19	3	16
Limpopo	74	50	24
Mpumalanga	7	5	2
KwaZulu-Natal	Data not available	Data not available	Data not available
Northern Cape	1	1	0
North West	8	0	8
Western Cape	0	0	0
Total	109	59	50

The NGO, International Centre for Eyecare Education (ICEE), - now known as Brien Holden Vision Institute, was very active in advocating to the Department of Health for permanent optometric posts within the districts of KZN (Naidoo, 2008). The International Centre for Eyecare Education, worked with the Red Cross Air Mercy service to provide an outreach optometric service on a regular basis. While not a sustainable venture, it did lay the establishment for a full time optometric service in the province. As Optometric posts were filled within districts, optometric services were handed back to the health districts. As of 2008, 7 out of 11 districts had appointed full time optometrists.

At the time of this writing, all 11 districts of KZN have optometrists that are supported by their local and the provincial Departments of Health. At the time of this study, 51 optometrists have been

employed by their respective District Departments of Health. Table 2.5 shows the distribution of optometrists across KZN health districts and estimated optometrist to patient ratio. For the period of January 2013 to October 2014, there were 31 713 refractions conducted in hospitals by public sector optometrists, with 28 725 spectacles dispensed (Mathonsi, 2014).

Each province has a district co-ordinator whose role is to ensure that the eye health component of service delivery is maintained. A provincial optometry public sector forum comprising all public sector optometrists has been established to represent the concerns of these optometrists.

Table 2.5: Distribution of public sector optometrists across health districts of KZN with patient-to-optometrist ratios (Statistics South Africa, 2014a).

District	Population*	Number of Public Sector Optometrists (PSO)	Estimated PSO : Patient ratio
Amajuba	499 839	6	1: 83 307
eThekwini	3 442 361	8	1: 430 295
Ilembe	606 809	4	1: 151 702
Harry Gwala (formerly Sisonke)	461 419	3	1: 153 806
Ugu	722 484	4	1: 180 621
Umgungundlovu	1 017 763	4	1: 254 441
Umkhanyakude	625 846	4	1: 156 462
Umzinyathi	510 838	5	1: 102 168
Uthukela	668 848	4	1: 167 212
Uthungulu	907 519	5	1: 181 504
Zululand	803 575	4	1: 200 894
Total		51	

In KwaZulu-Natal province, the future of optometrists willing to serve in the public sector may face mixed outcomes. Research into the practice trends of future optometrists, point to a limited number of graduates considering public service (Oduntan *et al.*, 2007). The predominantly urban profile of students selected may also attest to this (Mashige and Naidoo, 2010). When implemented, mandatory community service for optometrists may compel new graduates to serve in the public sector, but it is speculative whether this might make public service optometry a long term career pathway for some graduates, as the medical model has shown for South African doctors (Reid, 2004). While the financial incentive of a bursary or occupational specific dispensation might attract potential candidates, the unresolved nature of rural allowance not increasing their collective salary, may also demotivate them. No data exists on the effect of non-financial incentives on retaining optometrists within the public sector; but if experiences from other health professions are to be considered, these

incentives could be as influential. The recent announcement by the Health Professions Council of South Africa has expanded the scope of optometry to include the treatment of eye diseases may also impact as the public sector will offer excellent clinical opportunities. Given all of the above, it would appear that the right mix of selecting and retaining strategies combined with appropriate governmental support and management might assist to increase numbers of public service optometrists and aid retention.

CHAPTER 3: METHODOLOGY

3.1 AIM

The aim of this study was to investigate recruitment and retention elements that would appeal to and maintain present and future optometrists in the public sector.

3.2 OBJECTIVES

The specific objectives of this study were to:

1. Determine a demographic and educational profile of optometrists presently in the public sector in KwaZulu-Natal.
2. Compile a list of factors that make optometrists choose the public sector.
3. Identify interventions that would retain presently serving optometrists in the public sector.
4. Obtain insight from the Department of Health in KwaZulu-Natal (district health co-ordinators) regarding strategies and challenges experienced with recruiting and retaining public sector optometrists.

3.3 STUDY DESIGN

A cross-sectional study, using both quantitative and qualitative methods was chosen. A questionnaire, containing some questions that allowed for a response from a defined range of choices was used. Likert-scale rating options were incorporated into the research tool. However, all the possible questions needed to answer the research question could not be addressed in this format. Hence qualitative methods were used to collect this data. Open-ended questions were included to allow participants to express their perceptions and thoughts beyond the confines of a defined range of options. Telephonic semi-structured interviews with selected optometrists and district co-ordinators were conducted to further explore qualitative responses and recurring challenges raised in the questionnaire.

3.4 ETHICAL CONSIDERATIONS AND PERMISSIONS

Ethical permission for this study was sought from University of KwaZulu-Natal's Biomedical Research Ethics Committee (BREC). After submission of a protocol, research instruments and consent/information documents, permission was obtained from the Humanities and Social Sciences Ethics Committee (HSS). Approval letters from HSS were submitted to the KZN Department of Health's Health Research and Knowledge Management (HKRM) unit. Permission to conduct the study was then granted from HKRM following submission of a summarized protocol and research tools. Documents from both HSS and HKRM were then submitted to District Managers of KZN Health districts. If there were no queries from district managers, approval was given for the study via

letters of support. These letters from the district office were then included with questionnaires sent to the optometrists and district health co-ordinators.

An information document containing an outline of the study, methodology and what was required from participants was included in the questionnaire to all optometrists and district co-ordinators. Consent to participate in the study was obtained by a signed document to be returned along with the completed questionnaire. For those answering telephonically, their consent was noted on the questionnaire and a copy of their responses was sent back to them for their record-keeping and/or comment. If no comments were received within a week, the responses were captured.

3.5 STUDY POPULATION AND AREA

The study population comprised:

1. All optometrists that were working within the public sector health system (Public Sector Optometrists [PSO] in KwaZulu-Natal).
2. District Health Co-ordinators from the districts of the Department of Health of KwaZulu-Natal.

3.6 SAMPLING STRATEGY

3.6.1 PUBLIC SECTOR OPTOMETRISTS

A non-random, purposive sampling strategy was utilized. The entire cohort of PSO's currently working in KwaZulu-Natal was included. Using the registration list of the recently formed KZN Provincial Optometry Forum for the public sector, all optometrists were contacted individually via email, telephone and/or social networking to determine their interest in the study. If no response was received, 3 more attempts were made to contact them and obtain their permission to participate. After the 3rd attempt, these optometrists were excluded from the study.

If a positive response was received, consent forms, information documents and the questionnaire were sent to them. Given the varying nature of access to phones, fax or the internet, a variety of methods was used to collect data:

1. For those optometrists with internet access, an online survey some was created on a specific Google page. By selecting the link below, participants could complete the survey online and send back to the researcher: (<https://docs.google.com/spreadsheet/viewform?formkey=dERmRWVUTmE2X3p4MFgtbF9SZ1VBcXc6MQ#gid=0>).

2. For those participants with email-access, the questionnaire was converted to a form in Microsoft Word©. Optometrists could respond by typing their answers on the Word document and emailing back to the researcher.
3. For those experiencing difficulties with the form, a printable version was also emailed. They could print the tool, complete and either scan and return or return via courier.
4. For those with access to fax machines, the questionnaire was faxed to them and in most instances the questionnaire was faxed back by them.
5. For those that could print the questionnaire and with no access to fax or email, a courier service provided by the Brien Holden Vision Institute was used.

Presently, the Brien Holden Vision Institute has a provincial mandate to supply spectacles to optometrists in public sector hospitals in KwaZulu-Natal. After optometrists refract patients, a simultaneous order number for the patient is generated with details of their prescription sent to BHVI. After payment is made by the patient, the spectacles are made by a local optical company and couriered on a weekly basis to the optometrist. After obtaining permission from the Brien Holden Vision Institute and those optometrists requesting hard copies, questionnaires were delivered with the regular spectacle courier and returned the following week by the same method.

As the data collection window neared its end, some optometrists who had not yet returned the questionnaire were contacted by the researcher and had the questionnaire completed telephonically. This method was used successfully by Hatcher *et al.*, (2014) in her study involving responses from public sector doctors and dentists. For qualitative interviews, 11 optometrists (1 from each health district) were randomly selected. A suitable date and time was arranged with them, with the interview being recorded only after verbal permission was obtained from the participant.

3.6.2 DISTRICT HEALTH CO-ORDINATORS

After obtaining permission from their respective district managers, co-ordinators were emailed and faxed questionnaires. After 3 attempts to obtain the questionnaire, 1 more attempt at a telephonic interview was offered. After this last attempt, the co-ordinator was excluded from the study. For qualitative interviews, due to time and scheduling constraints, 4 district co-ordinators (1 from a geographically diverse health district) were randomly selected. Following an agreed date and time, the interview was conducted with verbal permission being obtained for it to be recorded.

3.7 SAMPLE SIZE

3.7.1 PUBLIC SECTOR OPTOMETRISTS

Within the PSO cadre, there were 51 professionals across the 11 health districts serving in the public sector. All PSO's were contacted to complete the questionnaire. Eleven optometrists (1 from each health district) were asked to participate in the qualitative interview.

3.7.2 DISTRICT HEALTH CO-ORDINATORS

All 11 co-ordinators serving during the time of the study were contacted to complete the questionnaire, four district co-ordinators (from geographically diverse areas of the province) were asked to participate in the qualitative aspect of the study.

3.8 INCLUSION CRITERIA

All optometrists working within the public sector health system, based at regional or district hospitals or clinics were included in the study. All district health co-ordinators, who addressed eye health in their portfolio, were included.

3.9 EXCLUSION CRITERIA

Public sector optometrists and district co-ordinators who did not wish to participate in the study or failed to respond after 3 attempts to contact them were excluded from the study.

3.10 STUDY LOCATION AND TIMELINES

The investigation occurred at a national level – within the 11 health districts of KwaZulu-Natal province. The survey tools were distributed to optometrists and district co-ordinators from June 2014 until October 2014. Interviews with selected participants occurred in November 2014.

3.11 PILOT STUDY

In order to ensure that the questionnaires were appropriate and would elicit the information required they were tested on a small sample of PSOs. Since no previous study had addressed the research question, new tools had to be developed. The tools used for this investigation were therefore not previously validated. They did however; borrow questionnaire design concepts from previously used tools designed by Oduntan (2007) and Kotzee (2006). The pilot study therefore allowed for the validation of the tools. Five optometrists from the PSO category were randomly selected, asked to complete the questionnaire (delivered by email, courier or website) and after evaluation of their responses asked to complete it again at a later stage. The pilot study revealed minor misunderstandings in wording of certain questionnaires, options and instructions. The tool was subsequently edited to be less ambiguous and more concise in phrasing of questions.

3.12 DATA CONSIDERATIONS

3.12.1 DATA MANAGEMENT

Upon receipt of questionnaires, a reference number was assigned to each. This allowed for easier identification and anonymity during analysis. Questionnaires, if not received by fax, were printed and filed according to the category of provincial health district. Qualitative interviews were recorded using QuickVoice® Recorder on the iPad ® and subsequently transcribed verbatim as far as possible.

3.12.2 DATA CAPTURING

Prior to capture, questionnaires were checked immediately upon receipt for completeness. The online nature of the tools limited response error, but in the case of missing data participants were contacted again to obtain clarity. Questionnaires were then captured on MS Excel® software package. Validation rules for entries and data-checking prompts were designed into the programme to ensure that data was captured properly. For qualitative data, a grid containing the name of optometrists and their responses to each question was created and populated with the transcribed verbal responses.

3.12.3 ANALYSIS

Data was then exported to the Statistical Package for Social Sciences (SPSS) software programme for analysis. Analysis included the calculation of frequencies; distributions of demographic data and responses. Statistical associations using the Fischer's Exact test was used, at the 5% significance level. For qualitative data, responses were read several times with recurring words and phrases highlighted. Similar sentiments were collated and categorized with recurring themes identified. In some cases, important qualitative comments were themselves selected and used to summarise identified themes.

For demographic data, the following assumptions were made:

- a. **Age:** All were categorised into participants under (and including) the age of 30 and all participants over the age of 30
- b. **Sex:** Males and females were classified
- c. **Population group:** The Statistics South Africa classification was used where Black is meant to denote of African origin and Indian is meant to denote of Indian origin (Statistics SA, 2014). Coloured is meant to denote of mixed race and White implies of European/Caucasoid origin
- d. **Origin:** Respondent's background was categorised as either 'rural' or 'urban'
- e. **First job:** First time employees were differentiated from optometrists who had previous work experience.

CHAPTER 4: RESULTS

This chapter presents the results of the study and is divided into two sections. The first part is a presentation of data collected from optometrists and the second from KZN Health district coordinators. Each section is then further subdivided to discuss the specific objectives of the study.

4.1 STUDY SAMPLE: PUBLIC SECTOR OPTOMETRISTS

The sampling frame comprised of all public sector optometrists working at a Department of Health institute across the 11 Health Districts of KZN province. An 80% (41 out of 51) response rate was received, with 100% responses from eThekweni and iLembe. The lowest response rate was from Sisonke health district (67%). Forty percent (16 out of 41) participants responded by fax, 27% (11 out of 41) responded by email and the remainder by online questionnaire and telephonic interview.

Table 4.1 shows the number of participants per health district of KwaZulu-Natal. The table also lists the number of hospitals as categorised by the type of service provided within the district health system. Majority of participants (93%; 38 out of 41) were from regional and district hospitals with the remainder were from tertiary and community health centres.

Table 4.1 Response rates from optometrists per health district of KwaZulu-Natal.

Name of District	Number and hospital type	Number of Optometrists in District	Number Optometrists responded	Percentage of Optometrists responded (%)
eThekweni	6 regional	8	8	100
	1 district			
	1 tertiary			
iLembe	4 regional	4	4	100
Amajuba	4 regional	6	5	83
	1 district			
Umzinyathi	4 district	5	4	80
Uthungulu	2 district	5	4	80
	2 regional			
Ugu	3 district	4	3	75
	1 regional			
Umkhanyakude	3 district	4	3	75
Zululand	3 district	4	3	75
Sisonke	2 district	3	2	67
Umgungundlovu	1 district	4	2	50
	1 tertiary			
Uthukela	1 community	4	2	50
	health centre			
	1 regional			
Total		51	41	80

4.2 PUBLIC SECTOR OPTOMETRISTS

4.2.1 RECRUITMENT

4.2.1.1 Demographics

Table 4.2 describes salient demographics of participants per health district. Respondent's ages ranged from 22-45 years, with a mean age of 29.68 (\pm 6.37) years. The gender ratio amongst the participants was approximately 1:3 with 14 (34%) male and 27 (66%) female. Distribution of the participants by ethnicity found Indian (11 out of 41; 27%) and African (30 out of 41; 63%). Fifty three percent of optometrists reported their origin as rural, while 39% of participants are first time employees. Sixty eight percent of participants were single, with the remainder married or divorced.

Table 4.2 Demographics of participants ($n=41$)

Category	<i>n</i> (%)	p-values
Age group [years]		
≤30	30 (73.2)	0.003
>30	11 (26.8)	
Sex		
Male	14 (34.2)	0.042
Female	27 (65.9)	
Population group		
African	29 (70.7)	0.003
Indian	12 (29.3)	
Origin		
Rural	22 (53.7)	0.639
Urban	19 (46.3)	
First job		
Yes	16 (39.0)	0.160
No	25 (61.0)	
District		
Amajuba	5 (12.2)	0.619
eThekweni	8 (19.5)	
ILembe	4 (9.76)	
Sisonke	2 (4.9)	
Ugu	4 (9.8)	
Umgungundlovu	2 (4.9)	
Umkhanyakude	3 (7.3)	
Umzinyathi	4 (9.8)	
Uthukela	2 (4.9)	
Uthungulu	4 (9.8)	
Zululand	3 (7.3)	
Total	41 (100)	

4.2.1.2 Social circle and levels of influence

In terms of social circle members who influenced their career choice, the following people were the most commonly occurring medical professionals: friends (56%; 23 out of 41), cousins (46%; 19 out of 41) and aunts (24%; 10 out of 41). The level of influence on optometrists' career choice from their social circles stated was also reported. The following relationships, sisters (37%; 3 out of 8), brothers (33%, 1 out 3) and uncles (25%; 1 out of 4) have most significantly influenced their choice of career. Figure 4.1 depicts the social circle members and level of influence of each as reported by optometrists. No parents were found to be health professionals, with 9 participants reporting that nobody in their social circle was involved in a medical profession.

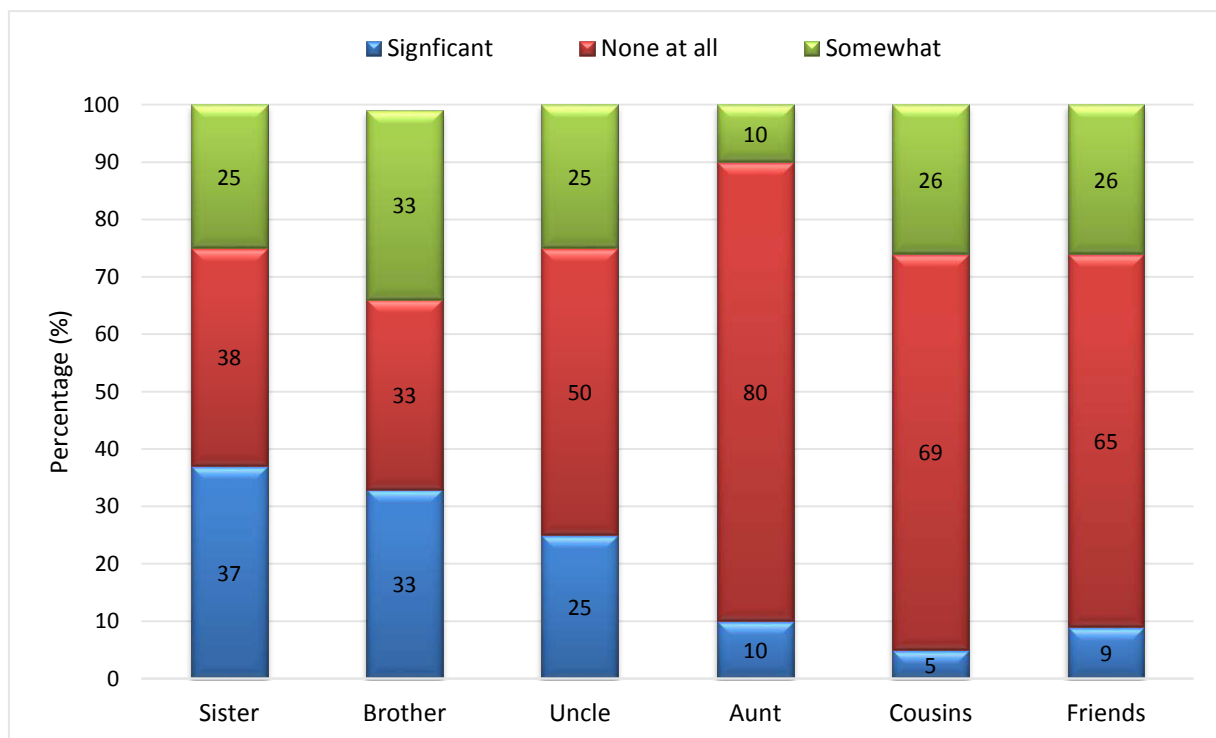


Figure 4.1 Social circle members and level of influence on career choice (n=41)

Interviews with optometrists presented several reasons for choosing the profession. Thematically, four of the eleven optometrists knew that they had inclinations toward the medical field. This is summed up in one response: *“I always wanted to work in health, work with people and to help them.”* As per Figure 4.1, participants mentioned influence by members of their social circle. Interviews also revealed that exposure to other optometrists influenced the decision of 3 participants to study optometry. One participant noted: *“My parents both wore glasses and I’ve went with them when they went for refractions – I was impressed by the job.”* Another participant said that *“I used to volunteer at Ingwavuma Hospital while he [the male student optometrist] used to help there during his final year holidays – he inspired me to think about optometry.”*

4.2.1.3 Education and training

Majority of the optometrists studied at the University of KwaZulu-Natal (78%, 32 out of 41), with others graduating from University of Johannesburg (15%, 6 out of 41) and Limpopo (7%, 2 out of 7). Interviews revealed that 3 optometrists chose University of KwaZulu-Natal as they were already studying towards a Bachelor of Science (B.Sc.) degree at the same university. *“I did B.Sc. in my first year and realized it was not what I wanted to do. I looked around and optometry was the most appealing – UKZN was the obvious choice”*, reported one participant. Five optometrists stated that UKZN was the most convenient and closest to home. Upon completion of their optometry degrees, student’s ages ranged from 21 to 27 years with a mean age of 22.95 (± 1.73) years.

Seven of the participants are currently pursuing further studies. One optometrist studying for a Master’s Degree in Optometry chose it to *“improve academically and improve healthcare to patients”*. Two participants enrolled for a Master’s in Public Health programme to *“understand public health’s [influence] on programme implementation”* and to *“contest better posts, particularly in Management”*. Business and finance studies were chosen by 4 optometrists as it *“create[s] flexibility for higher posts considerations other than...optometry”*; it was *“a change in career”* or *“should management position arise, can apply for it”*.

4.2.1.4 Previous work experience

For 39% (16 out of 41) optometrists, working in the public sector was their first job after graduation. On the other hand, 25 out of 41 reported a variety of modes of practice they were previously engaged in and the amount of time. Most time, before current engagement, was spent in working at another hospital or full time private practice for 5.2 (± 2.9) mean years and 4.6 (± 4.4) mean years, respectively. Other mode of practice mentioned were Non-Governmental Organisations (NGOs). Table 4.3 shows the modes of practice and their respective mean times and median times.

Table 4.3 Modes of practice for optometrists not having public sector work as their first job

Mode of practice	Mean (Std. Deviation), Years	Median(Interquartile range, IQR), Years
Full time private practice	4.6 (4.4)	3.0 (IQR: 1-9)
Locum in private practice	1.4 (1.5)	1.0 (IQR: 0.5-2)
Worked at another hospital	5.2 (2.9)	4.8 (IQR: 2.5-8.5)
Worked at University	1.3 (0.6)	1.0 (IQR: 1 - 2)
Not employed	0.8 (0.2)	0.8 (IQR: 0.7 -1)
Other	0.6 (0.3)	0.6 (IQR: 0.5 – 0.8)

4.2.1.5 Exposure to public service

In interviews, 81% of optometrists noted the influence of public sector exposure in undergraduate training to their career choice and current clinical work. One optometrist recalled “*Outreach programmes, like Stanger, was the activity that introduced me to public sector optometry...ignited my love for it. After Phelophepa, in our final year, I knew that after I graduate, I want to go into public sector*”. Other participants, noted that “*third and final year clinical rotations made it easy to work in public sector and deal with patients*”.

4.3 REASONS FOR CHOOSING TO WORK IN THE PUBLIC SECTOR

Reasons for choosing to work in the public sector were varied. Table 4 shows the categories of reasons, the reasons and the frequency of occurrence. Participants were allowed to choose more than one option. The most occurring reasons were bursary/loan obligation (53.7%), wanting to make a difference and good working hours (51.2%), free weekends (46.3%), and wanting to learn more (46.3%).

Table 4.4 Ranking of reasons why optometrists choose to work in the public sector ($n=41$).

Category	Reason	Frequency ($n=41$) (n, %)
Personal	Wanted to make a difference	21 (51.2)
	Wanted to learn more	19 (46.3)
	Bored with private practice	6 (14.6)
	Curiosity	2 (4.9)
	Self-realization	2 (4.9)
Social	Good working hours	21 (51.2)
	Free weekends	19 (46.3)
	Social recognition	1 (2.4)
	Family tradition	0 (0.0)
Job related	Job security	14 (34.1)
	Job benefits	11 (26.8)
	Better salary	5 (12.2)
	Better career path	2 (4.9)
Education/training	Bursary/loan obligation	22 (53.7)
	Previous exposure to public sector work in undergraduate studies	9 (22.0)
Private Sector	Could not afford to open your own practice	11 (26.8)
	Less responsibility than private sector	6 (14.6)
	More responsibility than private sector	2 (4.9)
	Could not get a job in the private sector	1 (2.4)

4.3.1 PERSONAL REASONS

“*Wanting to make a difference*” and “*wanting to learn more*” were reasons cited by 51.2% (21 out of 41) and 46.3% (19 out of 41) participants, respectively. After categorising by hospital type, ‘wanting to make a difference’ was highest reported in regional hospitals by 72.2% (13 out of 18) of optometrists. There was an association between wanting to make a difference with the type of hospital within the district health system ($p=0.04$).

4.3.2 SOCIAL REASONS

“*Good working hours*” was reported by 51% (21 out of 41) of the participants as a reason to work in the public sector. Sixty three percent (12 out of 27) women, 90% (10 out of 11) of Indians and 74% (14 out of 19) participants of urban origin cited “*good working hours*” as a reason to work in the

public sector. There was a statistically significant association between reporting of “*good working hours*” as a reason to work in the public sector and the following; gender ($p = 0.05$), race ($p = 0.00$), and origin ($p = 0.01$). Furthermore, 46.3% (19 out of 41) optometrists reported “*free weekends*”. However, there was no association between this reason and gender ($p = 0.51$), age ($p=0.48$), race ($p = 0.07$), employment status ($p = 0.51$), origin ($p = 0.21$), or hospital type within district health system ($p = 0.93$).

4.3.3 JOB RELATED

“*Job benefits*” and “*job security*” was reported by 11 (26.8%) and 14 (34.1%) out of 41 optometrists, respectively. Also, “*better salary*” was chosen by 12.2% (5 out of 41) of the participants. For 36.6% (4 out of 11) of Indians, “*better salary*” was reported, and for all optometrists (100%; 2 out of 2) at a tertiary hospital it was the most commonly recurring reason. A statistically significant association was found between “*better salary*” and the following; race ($p = 0.01$) and hospital type ($p = 0.02$).

4.3.4 EDUCATION/TRAINING RELATED

Bursary/Loan obligations were reported by 53.7% (22 out of 41) of optometrists. After categorising by hospital level, bursary/loan obligations were highest reported in district hospitals by 75% (15 out of 20) of optometrists. A statistically significant association was observed between bursary/loan obligations and the following variables:

Race: with 70% of Africans (21 out of 30) choosing this option ($p = 0.01$), gender: 11 out of 27 females (40.7%) ($p = 0.05$), employment status ($p = 0.01$), 70% of under 30-year olds (21 out of 30) age, and background origin: 72.7% of rural origin participants (16 out of 22) ($p < 0.05$). Women were 0.2 (95% CI: 0.04-0.83) times less likely to report bursary or loan obligation as a reason to work in the public sector compared to males.

4.3.5 PRIVATE SECTOR RELATED

Just over a quarter of optometrists (26.8%; 11 out of 41), chose to work in the public sector because they “*could not afford to open [their] own practice*”. For this and other private sector optometry related reasons, no association was found between the categories of age, gender, origin, employment status, and hospital level.

4.4 RETENTION

Respondents were asked to rank the need for interventions related to their retention i.e. what will influence them to stay in the public sector and how urgently is it needed. Figure 4.2 below displays the level of need for 6 highest ranked interventions. Improving salaries, career pathway management and recognition were rated the highest, while strengthening community relations, social activities and reduction in workload were rated the lowest (not shown). Other interventions also included improving staff numbers and placements and advocating for increased profile of the profession. The proceeding section investigates analysis of these interventions interspersed with qualitative interviews.

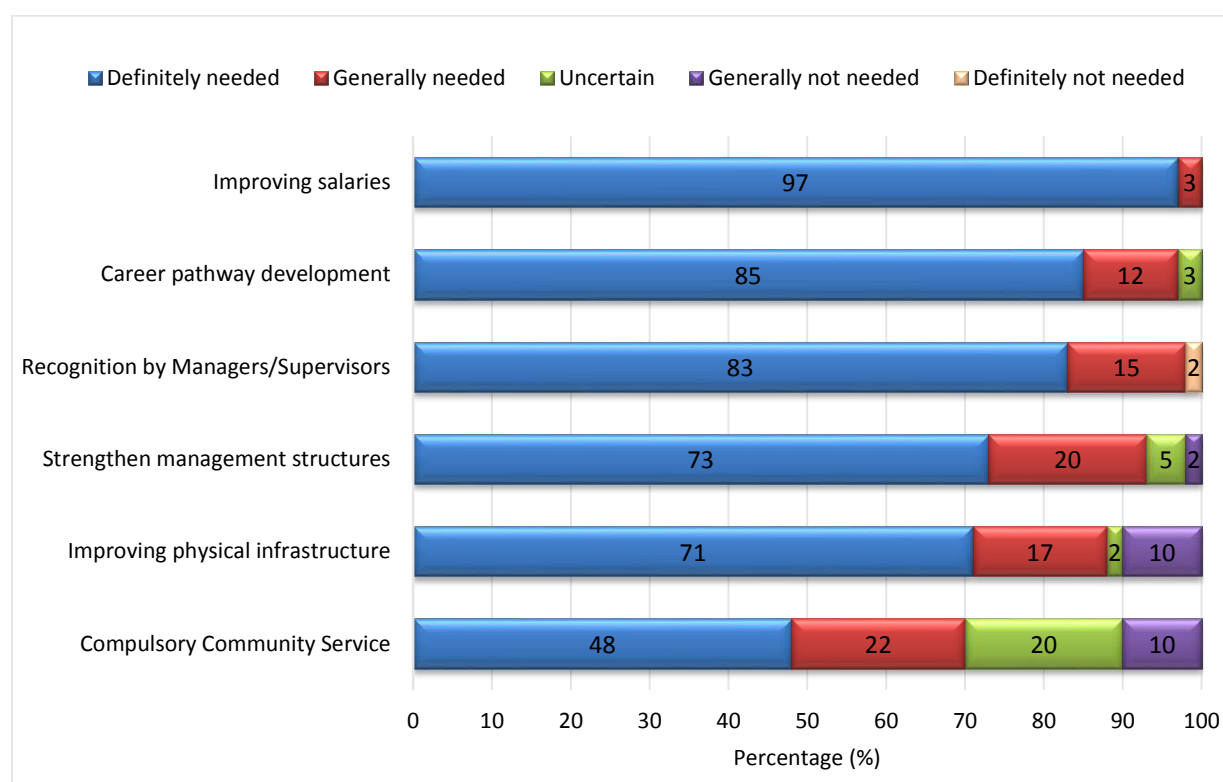


Figure 4.2 Levels of need for retention interventions as suggested by public sector optometrists (n=41)

4.4.1 SALARY AND OTHER FINANCIAL INCENTIVES

Improving salaries was ranked the most needed with 98% (40 out of 41) of responses. Optometrists were asked to comment on what an acceptable salary was given the present economic climate. A mean of R28 726.39 (\pm R8 853.74) per month was found. There was no association with demographic categories.

In interviews, optometrists were questioned on how they arrived at an acceptable monthly salary. Majority of participants (8 out of 11) benchmarked the salary of other allied health professionals (pharmacy, physiotherapy, radiography) to provide this figure. *“Physiotherapists on community service earn more than full-time optoms”*, one participant observed. Another illustrated that *“We don’t earn the same as other professionals with a 4 year degree; salary needs to be on the same scale”*.

Occupational Specific Dispensation (OSD) has seemed to have little effect on improving the financial situation of Optometrists. *“It [OSD] has not helped, over and above basic salary – the basic salary is too low to begin with”* stated one optometrist. The uneven implementation of Rural Allowance (RA) was noted with one optometrist noting that *“Physio’s and radiographers are getting allowances and we are not”* while another observed that *“unions want us to join to them to better represent us but there are so many unions”*.

4.4.2 CAREER AND PERFORMANCE MANAGEMENT

With 85% of responses (35 out of 41), career management was the second highest needed intervention. There was no association with demographic categories. Discussions with optometrists revealed recurring themes around career pathway development and performance management. Regarding progression onto higher grades optometrists felt *“it took too long to progress...to move up grades - pharmacy is shorter. Needs to be consistency across Allied Health Professions”*. Inconsistencies around the hospital orientation and induction process have occurred with one optometrist noting that *“induction was poor....there was too much and irrelevant information”*, while four (36%) participants mentioned that no hospital induction or orientation occurred *“even after 3 years at the hospital”*. An emerging theme was the lack of implementation of performance management systems. *“The hospital has an EPMDS [Employee Performance Management and Development System] to evaluate us....I had to design my own job description! How do I evaluate myself?”*. Another optometrist observed that *“according to my Manager - everyone gets a ‘3’ ”* (a satisfactory performance rating on EPMDS).

4.4.3 RECOGNITION

Recognition rated as a necessary intervention for their retention by 83% (34 out of 41) of optometrists, however, there was no association with demographic categories. In interviews with participants, two themes emerged from further discussion. “*Recognition*” was interpreted to be either (a) recognition of the profession or (b) recognition of the individual in the work environment. For the first theme, comments from participants included “*The management does not recognise the importance of the eye clinic*”, while another optometrist noted that “*We are not recognised as optometrists in the public sector*”. Another participant noted that “*There is prioritization of other departments other than the eye clinic/optometry clinic*”. From a clinical perspective an optometrist remarked... “*we are not recognised; our place in the system is not understood. [We are] just used as refractionists*”.

Regarding the second theme, there appears to be inconsistent recognition of health workers. In some districts optometrists are “*recognised at award ceremonies, that includes the whole eye unit*”. A participant noted that “*we are recognised by patients and receive praise from them in the community and sometimes on local radio*. In other responses, recognition appears to be politically motivated. One optometrist observed that “*we are recognised only at WSD [World Sight Day] events where the MEC [Member of Executive Committee for the Province] will be in attendance handing out free glasses/spectacles. Management recognises us when there is a political agenda*”. One participant also noted that “*people do not even know that there is an eye unit at this hospital*”.

4.4.4 IMPROVE EQUIPMENT AND PHYSICAL INFRASTRUCTURE

Improving equipment and infrastructure was rated by 71% (29 out of 41) participants. There was an association between this intervention and age ($p = 0.04$), race ($p = 0.02$). From an age perspective, this intervention was highest rated by optometrists under the age of 30 (80%; 24 out of 30). Eighty percent (24 out of 30) of African participants also ranked this the highest.

Interviews with optometrists yielded commonly occurring themes. Eighteen percent (2 out of 11) reported satisfaction with equipment at their hospitals, “*but needed more space*”. The remaining participants expressed challenges with inadequate equipment, processes or budgets to obtain equipment and providing a service to patients.

“*With equipment, we have a horrible situation at present. 5 optoms are sharing 2 trial frames – and these are frames that were our own. We tried the process for ordering – but budget has been exhausted, we were told*”, observed one optometrist. Where budget does exist for equipment, challenges with the ordering process occur, as evidenced by one optometrist who mentioned: *I don't have a trial frame at present, I submitted [a motivation] to my manager, who submitted to Cash Flow*

[Division in the hospital that requisitions equipment]. *If they cannot obtain 3 quotes [for equipment], it has to go out on tender...I'm still waiting; it's been under 2 years*". Another participant discussed that *"we use our equipment, but we really need tonometers to detect glaucoma"*. Similarly, a participant commented that *"we have little equipment at present and can only refer. Glaucoma patients are not treated properly, not given the best service"*. One optometrist observed, *"with the equipment that I have at present, I can merely refer patients"*. These sentiments point to a lack of efficient service delivery due to lack of proper equipment.

4.4.5 STRENGTHEN MANAGEMENT/STRUCTURES RELATIONS

This intervention was rated by 73% (30 out of 41) participants. However, there was no association with demographical categories. Discussions with optometrists revealed varying experiences with managers and hospital management structures. *"When it comes to supervisors/managers in optometry you feel like you are an outsider...no one is interested in eyes"*, one optometrist indicated. Another mentioned that *"we need managers to motivate on our behalf. I am only really engaged when the manager needs something from me"*. These comments describe a sense of apathy from management. Competing interests from managers appear to hamper some optometrists as noted in *"my manager is a Medical Officer doing ophthalmology; he prioritizes and he too has his own problems with his requests. Senior Management is of little or no help"*.

Change in hospital reporting structure was shown to assist optometrists, as evidenced by the following statement: *"A new medical manager has picked up that we should not be reporting to ophthalmology but directly to the medical manager himself. This has made my life much easier, as now, I'm the one who directly communicates with him and says what is needed...As a result I've been able to negotiate...and we are now awaiting our own space for optometry separate from what ophthalmology is requesting"*.

In this case, direct reporting to managers with awareness of unique optometry needs facilitated participant's needs. Further discussions revealed positive working relations with district co-ordinators, based at the Health District Office. Eight out of eleven optometrists (72%) enjoyed support from district co-ordinators. One participant noted: *"District co-ordinator A is very supportive and always offering advice. I talk to her when I need help...There is also good communicating, cc'ing me when she emails my manager"*. Another observed that *"there is good support from district co-ordinator B; he is able to co-ordinate well with other optoms....We are very lucky to have district co-ordinator B as district co-ordinator"*.

The remaining comments about district co-ordinators revealed perceived lack of knowledge of optometry needs: *"District Co-ordinator C does not know anything about eyes, equipment or what is needed. How will someone fight for you, if they don't know about eyes?"*; prioritizing other needs

“District Co-ordinator D is a busy person who focusses on ON (Ophthalmic Nurse) training” and minimal interaction “...in 6 months, I’ve seen district co-ordinator E once at a function, and then district co-ordinator E called us once to find out which optoms were in the clinic – no reason for the call”. The comments above reveal inconsistent approaches to public sector optometrist management both at hospital and district level.

4.4.6 COMPULSORY COMMUNITY SERVICE (CS)

As an intervention to motivate their retention, this option was rated by 48% (20 out of 41) of participants. There was no association with statistical categories.

Three commonly occurring themes emerged in interviewing optometrists:

1. Improved clinical skill
2. Improved access to services delivery,
3. Increase in posts leading to improved recognition of the profession.

One commonly occurring theme involved CS leading to better clinicians due to exposure to different patients. This is illustrated in one comment where the optometrist notes that *“at a public service level, optoms are given the exposure to calibre of patient not consulted within private practice”*. Another participant noted that with a *“variety of cases, after community service they will become better clinicians irrespective of private or public sector career choice”*.

A second theme emerged around improved access to services due to CS for optometrists. One noted that *“working in rural areas, the transport system is very bad for patients. With community service, patients will be seen at clinics closer to their homes, complicated cases seen at [a district] hospital only. [This will incur] less expense to patients”*. Another optometrist observed that *“most rural districts are geographically very large making it difficult to efficiently and effectively frequent outreach visits. Compulsory community service will improve accessibility of optometry services to such health care facilities”*.

For 7 out of the 11 interviewed (63%), CS would lead to an increase in optometry posts while simultaneously increasing professional recognition. This is noted in one response: *“It [CS] will increase the numbers in public sector and [we will] have more voice when raising issues with government. Another participant felt CS would employ and retain more optoms, cause less congestion in private sector, and promote the profession”*.

The above mentioned themes are encapsulated in an observation, noted below: *“By strengthening compulsory community service will help the [sic] top bosses so-called ministers of health and they will definitely see the impact optometrists have in helping our poor communities since they will be at least be found in almost many if not all public hospitals. They will maybe start improving the infrastructure*

in hospitals and creating better posts levels and redesigning the whole structure for improvement of a better life for all. Newly [sic] graduates will have good exposure to the public sector systems and many more poor communities, where there was no optometrist in their health centre, will benefit". The above comments highlight multifaceted benefits of CS, as perceived by presently serving public sector optometrists.

4.4.7 CONTINUOUS PROFESSIONAL DEVELOPMENT (CPD)

The theme of support for CPD activities arose in interviews with optometrists. Currently, two out of 11 participants (18%) mentioned regular CPD activities at their hospitals through a weekly or monthly 'journal club' (unusual or challenging clinical cases and how they were treated are shared with other eye health professionals).

The remaining optometrists expressed challenges with attending CPD activities. *"We are expected to attend conferences to learn more so it benefits them [the hospital] but are not given days off to attend; we have to take leave days,"* noted one participant. In other hospitals, optometrists reported *"we are given leave for CPD workshops, but no transport, accommodation...we have to support ourselves"*. One participant noted that *"we don't get support from our managers for CPD even if we motivate for it; it is always difficult for hospitals to release funds or arrange transport"*. The comments above seem to reflect managerial, budgeting and administrative issues that hinder optometrists from engaging in CPD activities.

4.4.8 FUTURE PLANS

Optometrists were asked to indicate their intention to stay in current institution over the next 3-5 years. If they could not see themselves at their institute, they were asked why and what alternate forms of employment would they seek.

Table 4.5 describes the profile of optometrists that had responded to their future plans. At least 22 (54%) of participants could not see themselves working at their institute. Most commonly cited reasons for this possible departure ranged from lack of career management and poor salary (21%) to poor equipment/infrastructure (15%) and lack of recognition (12%). An association between race ($p=0.00$) and hospital level ($p=0.00$) exists with 90% of Indians (10 out of 11) and all (100%; 2 out of 2) participants reporting choosing to leave after 3-5 years of service.

Optometrists were asked of their future plans if they were to leave their current jobs. Commonly occurring responses included further study in a non-optometric field (59%), full time private practice (46%), academia (20%), post-graduate studies (20%) and not practicing optometry (22%). Figure 4.3 below, shows their responses.

Table 4.5 Profile of optometrists and reasons for exiting their current jobs.(n=40)

Do you see yourself at your current institution in the next 3-5 years? (n,%)	Yes (n = 18)	No (n = 22)	
Age			
<=30	11 (61)	19 (86)	<i>p=0.14</i>
>30	7 (39)	3 (14)	
Gender			
Male	5 (28)	9 (41)	<i>p=0.51</i>
Female	13 (72)	13 (59)	
Population			
African	8 (44)	21 (95)	<i>p=0.01</i>
Indian	10 (56)	1 (5)	
Origin			
Rural	7 (39)	14 (63)	<i>p=0.01</i>
Urban	11 (61)	8(36)	
Level of Institute			
CHC	1 (6)	0 (0)	<i>p=0.01</i>
District	4 (22)	15 (68)	
Regional	11 (61)	7 (32)	
Tertiary	2 (11)	0 (0)	
Work history and experience			
First time employee	6 (40)	9 (60)	<i>p=0.75</i>
Previously employed	12 (48)	13 (52)	
Reasons for exiting current job			
Career management		7 (21)	<i>p=0.75</i>
Salary		7 (21)	
Equipment/Infrastructure		5 (15)	
Working conditions		4 (12)	
Recognition		4 (12)	
Personal Reasons		3 (9)	
Management relations		2 (6)	
Study further		1 (3)	
CPD		1 (3)	

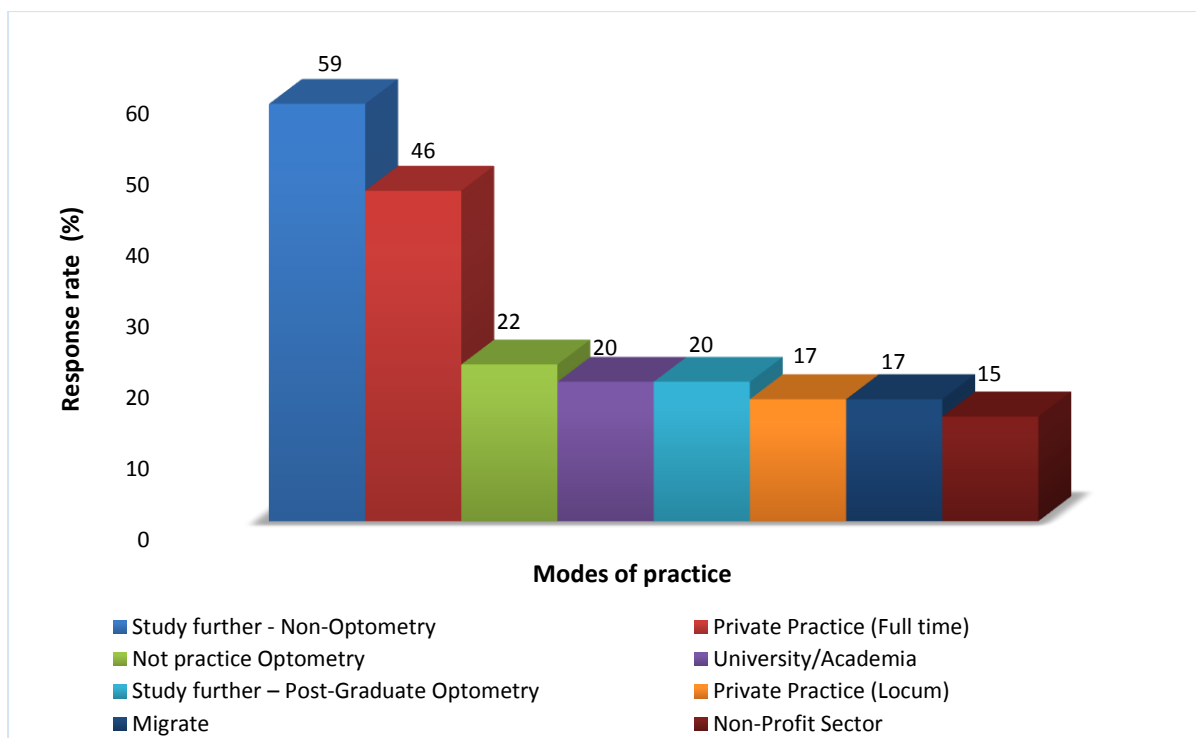


Figure 4.3 Possible modes of future practice if public sector optometrists exit their current jobs (n=41).

The preceding section provided a quantitative and qualitative analysis of public sector optometrist responses. Associations were drawn between recruitment reasons for career choice and levels of need for retention interventions. The next section evaluates responses from district co-ordinators from the 11 health districts of KwaZulu-Natal.

4.5 DISTRICT CO-ORDINATORS (DC's)

4.5.1 PROFILE AND BACKGROUND OF DC's

A 75% (9 out of 12) response rate for questionnaires sent to district co-ordinators was obtained. Due to scheduling and time constraints, a purposive sample of 4 district co-ordinators was chosen for telephonic interviews. To ensure a wide variety of responses, co-ordinators from the northern, southern, western and central regions of the provinces were selected. Just under half (44%) of the district co-ordinators were in their post for a period of 7-10 years. Fifty-five percent of participants were trained in health care prior to taking up this position, with the rest having a background in social sciences and business/management.

4.5.2 READINESS FOR PUBLIC SECTOR SERVICE

All DC's (100%) felt that optometrists were adequately prepared to enter the workforce following graduation. A commonly recurring theme for this overwhelming response was discovered as prior

training and exposure. One participant reported that graduated optometrists have “*extensive training and education at the various universities*”. Another said: “*they are clinicians. [They’ve] examined patients on Phelophepa, University, Clinics, and Hospitals*”. Another district co-ordinator concurred with their counterpart: “*they have acquired adequate training to manage general eye health in the community*”. One sub-theme revolved around the work attitude and ethic of optometrists. One participant noted: “*they are able to work independently, without supervision after employment*”; while another observed “*they are quite enthusiastic to work, rendering services*”. An important observation comment comes from a district co-ordinator, from a largely rural health district: “*when they arrive in the public sector they show interest in working even in the most remote areas and they do not choose the place of work, immediately they are placed they just go straight to their work places and render services*”.

4.5.3 REASONS WHY OPTOMETRISTS CHOOSE PUBLIC SERVICE

Personal: For this category, district co-ordinators felt that optometrists chose to work in the public sector to learn more (67%, 6 out of 9) and wanting to make a difference (56%, 5 out of 9).

Social: The most commonly reason cited by 67% (6 out of 9) district co-ordinators was the prospect of free weekends that attracted optometrists to public service.

Job related: Job security was highest rated for this category with 67% (6 out of 9) of co-ordinators responding that this was a major factor.

Education/Training: For this category, 88.9% (8 out of 9) of participants felt that optometrists choose bursary/loan obligation reason to work in the public sector.

Private sector: Being unable to afford opening their own practice was a reason 55% (5 out of 9) of district co-ordinators felt optometrists chose public service.

4.5.4 RECRUITMENT OF OPTOMETRISTS

Six district co-ordinators reported actively recruiting optometrists, using a variety of methods with advertising on the Department of Health website being the most popular (55%). Four health districts actively used study bursary/loans as a method to recruit optometrists, with one district retaining the optometrist after their obligation had been met. Only 33% (3 out of 9) of the district co-ordinators had challenges in recruiting optometrist, with salary, lack of career pathway and scarce skills allowances being inhibiting factors.

Interviews with district co-ordinators described the process of recruiting optometrists and associated challenges. One interviewee stated: “*Hospital management identifies the need for an optometrist... looking at their [hospital’s] cash flow, workload, etc. and they make a recommendation to financial*

management for a new person. The district office supports the hospital by making a bursary available...the District Human Resource Development Department advertises and recruits new optometrists". Another co-ordinator mentioned that "it's not easy to recruit optometrists. Bursary is given to students; but geographic location deters them from coming back. Some optoms rather pay back [the] bursary amount than come and work in district. We did have BHVI [Brien Holden Vision Institute] to assist with finding optoms for district...but it's not easy!" Given the comments above there appears to be a system to recruit optometrists but difficulties exist in filling these posts.

4.5.4.1 Rural origin and public service

"In your experience, does the urban or rural background of the student influence their decision to work in the public sector?" For students with rural backgrounds, a sense of community was inherent in their decision to work in the public service. This theme is apparent in two participant's answers: *"If one grew [up] in the community, socially, they are able to identify the needs of the community...and thereafter [the student] decides to study and qualify to meet the needs of the community".* Another remarked: *"students from rural areas like to make a difference in their own community".* Reactions were varied from other participants, with one district co-ordinator feeling that *"those coming from urban background find it difficult to adjust to rural life"* while, another felt that *"rural students prefer to work in town/city"*. Another participant observed that being *"underprivileged influences optometrist to go to public sector...as...most of them require bursaries and they have to work at public sector after they have graduated."*

Lastly, the comments above represent dichotomous views on the influence of rural origin on public sector career choice. These views, however, should be considered in context of retention strategies as presented in the following section.

4.5.5. RETENTION OF OPTOMETRISTS IN THE PUBLIC SECTOR

The length of retention of optometrists in public service ranges from 2.75 to 10 years, with an average of 5.63 years \pm 2.48.

Similar to optometrists, district coordinators were asked to rank interventions that should put into place to better retain optometrists. In descending order, recognition by Managers/Supervisors (89%, 8 out of 9), improving salaries, career pathway development, and improving equipment and infrastructure (all 78%, 7 out of 9) were the highest ranked.

4.5.5.1 Recognition

Interviews with co-ordinators revealed a lack of recognition of the profession. One co-ordinator pointed out that *"optometry as a career must be recognized as a profession (like pharmacy or*

dentistry). *Optometrists must be [sic] remunerated adequately*". Another participant acknowledges that *"recognition needs to be addressed, as this hasn't happened much"*. In terms of individual recognition *"it is usually done at facility level"* stated one participant. Another district is known to host year-end functions where Optometrists are recognised for their work. The above responses illustrate the inconsistent nature of recognition by managers/supervisors.

4.5.5.2 Salary

For the co-ordinators that responded, salary expectations for optometrists should be from R22 567 to R45 833, with an average of R33 210 ± R10 083 per month. One co-ordinator noted that *Increase in salary will help in retention of optometrists in the public sector*. Another co-ordinator mentioned that *"rural allowance and other [financial incentives] are a provincial directive"* while another noted that *"the facility's HR [Human Resource] Department is responsible for implementing any financial benefits to optometrists"*. The comments above provide insight into the bureaucratic structure of Department of Health regarding implementing salary and other financial benefits.

4.5.5.3 Career management

Interviews with co-ordinators suggest that hospital level departments and managers are responsible for career management of optometrists. A co-ordinator observed that *Facility HRD [Human Resource Development]* is *"responsible for careers. Although, I am not sure if information is given to all optoms..."*. Another participant said *"The District HRD office is meant to support facility HRD and assist with informing optoms of career pathways"*. In terms of performance management, a co-ordinator noted that *"no EPDMS [Employee Performance and Development System] [reports] come to the District office – they are all handled at the institute"*. These statements reveal a decentralised HR systems and processes with facility level departments expected to perform career and performance management evaluation.

4.5.5.4 Equipment and physical infrastructure

Discussions with co-ordinators revealed historical challenges to this aspect. *"The District Office had [financial] allocations for all programmes. About 4-5 years ago funding was taken away from our offices. And were told 'funds are where service happens'"*. From this statement, control of budgets was removed from District offices and given solely to the hospital facility. The effect of this decision is noted in the following statement made by a co-ordinator: *"Motivations [for equipment] are made to the medical committees. Due to the Public Financial Management Act, you need a committee to make decisions. It depends on individual committees – some work slowly; some are fast"*.

From a district perspective, *"requests for equipment are done at the facility level"*. Optometrists are encouraged to engage in the request and budgeting process. This is illustrated in the comment:

“optometrists should be involved in institute budgeting, completing the NSI [Non-Stock Item] form and request what they need...It is also our duty to liaise with the institute to ensure that optometrists have good equipment and work area and accommodation. Optometrists also need to come forward with their challenges and obstacles; there needs to be open communication with hospital management”. The statements above reveal challenges in hospital budgeting and procurement system, but also show the need for optometrists to raise awareness of difficulties with the system.

The preceding pages analysed the profile of currently serving public sector optometrists in KZN province. It also investigated the views of district co-ordinators to better understand their challenges in implementing retention and recruitment activities. An explanation of results observed in the study will be explored in the discussion section.

CHAPTER 5: DISCUSSION, LIMITATIONS, CONCLUSIONS, AND RECOMMENDATIONS

The aim of this study was to investigate recruitment and retention elements that would appeal to and maintain present and future public sector optometrists in KwaZulu-Natal province, South Africa. This section provides an evaluation of the findings in context of the research's objectives. It also provides limitations of the present study and recommendations for future research.

5.1 OPTOMETRISTS

5.1.1 DEMOGRAPHICS

5.1.1.1 Gender

The study found 66% of the sample to be female and 34% male optometrists, with a male-to-female ratio of approximately 1:3.

Comparisons with other studies can be challenging, as previously alluded, there are limited studies regarding the profile of public sector optometrists. Africa-wide surveys of eye health cadres did not measure gender numbers or ratios (Palmer *et al.*, 2014a), while some African studies (Eze and Maduka-Okafor, 2009), reported collective gender figures and not on optometrists alone. In South Africa, Lecouna (2007), counted the number of public sector optometrists per province but did not include gender. A 2010 study of KZN optometrists (Mashige and Naidoo, 2010) found 55% of participants were women. This study, however, included all modes of practice and did not distinguish public from private sector.

There are similarities between the national and institutional gender profile of qualified optometrists and the KZN public sector sample. Nirghin *et al.*, in 2011, found an exact female/male proportion (66%/34%) in all post-1994 registered students in the country. This could be attributed to the post-apartheid Government's strategy to redress gender imbalances in higher education as previously mentioned in Section 2.2.2.1 (Odhav, 2009). An additional study of presently registered optometry School students (Mashige and Oduntan, 2011) found a similar ratio of females to males. The author assigns this to females taking more interest in the course or better entrance results than males, hence were given priority for admission. While both these studies provide cross-sectional profiles of students pre-graduation, studies of post-graduation research cohorts are needed to determine if similar ratios are maintained for public sector optometrists.

Lastly, if there are proportionally more females in optometry schools, it may be logical to assume that there will be more females in the public sector. This discussion will further explore other reasons associated with women choosing the public sector.

5.1.1.2 Population group

The study found that Africans (73%, 30 out of 41) and Indians (37%, 11 out of 41) comprised the sample of participants. Historically, the University of KwaZulu-Natal, has been training mainly African and Indian optometrists since the first 4 year programme began in 1980 (Mashige, 2010). It would thus be reasonable to assume larger representation of these population groups. It is also important to note that in the post-democracy period, the racial distribution of graduates increased by 2% for Coloureds, 21% for Africans, Indians increased by about 7% of graduates while Whites decreased by about 30% (Nirghin *et al.*, 2011).

Most conspicuous is the lack of White and Coloured optometrists in public service in KZN. At a university level, small enrolment numbers of these racial groups have been noted (Mashige, 2010). The University of KwaZulu-Natal plans to increase the number of White and Coloured undergraduate students by developing a comprehensive marketing strategy to achieve equity targets in the future. In another study, Mashige and Oduntan (2011), found that the proportion of Coloured students across the country is low in all optometry Schools. It was argued that this could be attributed to the fact that the Western Cape province has the highest number of Coloured people, and without an optometry school in that province, representation of this race group will be low (Nirghin *et al.*, 2011).

With the proposed compulsory community service for all optometrists looming, this may well be a manner to bring about proportional representation across all population groups in the province. Anecdotal, there are also plans to start a School of Optometry in the Western Cape, thus increasing the number of Coloured graduates creating a potential supply for the public sector. Further research might also be warranted into proposed career choices of Coloured and White optometrists and reasons for not considering a public sector post.

5.1.1.3 Age and previous work experience

For easier statistical manipulation and comparison, the sample was divided into under and over 30 years of age. This study found that just less than three quarters (73%) of the participants are under the age of 30 and just fewer than 40% are first time employees. While there appears to be no global trend in age related profiles of health workers (World Health Organisation, 2006), findings in this study are contradictory to demographics of Nigerian (Ebuehi and Campbell, 2011) and Zambian (Mutale *et al.*, 2013) rural health workers (27% and 26% respectively under 30 years) and South African nurses (4% under the age of 30) (George *et al.*, 2009).

The number of professionals under the age of 30 and for those that are first time employees is statistically associated with those who have chosen to work in the public sector due to bursary/loan obligations. It would thus seem that the recent introduction of study bursaries has led to a cadre of

public sector optometrists that is largely young, economically mobile and relatively inexperienced. These characteristics could impact on service delivery as their inexperience could lead to poor patient management, while mobility could impact on sustainability of the service, if after loan obligations have been met there is a mass exodus of professionals. Furthermore, the present sample is a mix of multigenerational professionals - Millennials (born between 1980 and 2000) and Generation X's (born between 1963 and 1980). It will bode well for human resource managers to be cognisant of these characteristics as career pathways, workforce motivation, recruitment and retention strategies are known to differ between these groups of professionals (Sherman, 2006).

5.1.2 RECRUITMENT

5.1.2.1 Rural Origin Vs Urban Origin

Just over half of the participants in the public sector were of rural origin (53%, 22 out of 41). It has been previously shown that students of rural origin are more likely to return to a rural career (de Vries and Reid, 2003; McAuliffe and Barnett, 2009;; Anzenberger *et al.*, 2011). For the purposes of this study, 'rural' was considered to be areas outside major urban areas, provincial capitals and towns as per previous rural origin studies of South African doctors (de Vries and Reid, 2003) and health science students (Tumbo *et al.*, 2009). Relative to de Vries and Reid, (2003), this investigation found a higher percentage of rural origin students practicing in a rural/public sector setting. In another study, 77% of qualified public sector working pharmacists were of rural origin, a percentage higher than this research study (Dambisya *et al.*, 2007).

Mashige's study of South African optometry students found a high level of urban origin students (73%) (Mashige, 2011). A similarly high percentage (79%) of urban origin students was found in Ghana optometry schools (Boadi-Kusi *et al.*, 2014). If optometry schools can be considered a potential supply of public sector optometrists, a review of the rural origin of selected candidates may be warranted. In this study, the difference between UKZN optometry school profile and the public sector institute's profile is significant for future retention strategies as it does seem as if rural students tend to return to these areas to practice. In the larger context of eye health human resources in Africa, selection of rural origin students may bring some equity to the mal-distribution between urban and rural eye health resources.

5.1.2.2 Influence of social circle on career choice

Figure 4.2 illustrates the influence of social circle members in influencing the career choice of participants. Most obvious is the lack of parents who are medical professionals and their role in affecting this choice. Significant influence was applied by siblings and extended family (aunts and uncles). This appears contradictory to studies conducted by Pinchot (2008), Kolasinski (2007), Shah

(2004) and Maharaj (2008) who found strong parental influence affecting career choice in surgery, rheumatology, urology and allied health professions. Findings in this study partly concur with Mashige and Oduntan (2011) who found that ‘neither parents nor relatives had a significant influence on career choice in optometry’. This result, however, does resonate with Schultheiss’ theory of the influence of siblings on career choice, where siblings are relied on by their sibling career seekers for levels of psycho-social support (Schultheiss *et al.*, 2002).

5.1.2.3 Career and institute choice

More than three quarters of the sample graduated from the University of KwaZulu-Natal with the remainder attending the Universities of Johannesburg (UJ) and Limpopo (UL). The participant from UJ was not accepted at UKZN while UL graduates were keen on a change of province and mode of practice. Given the geographic location of the study, it is reasonable to assume that a large number of optometrists would have graduated from UKZN. UKZN was also chosen due to financial reasons, convenience and proximity to home – sentiments echoed in Mashige and Oduntan (2011).

Reasons for choosing optometry are not dissimilar from findings from Saudi Arabia (Oluwale, 2012), Ghana (Boadi-Kusi *et al.*, 2014) and South Africa (Mashige and Oduntan, 2011) – a desire to help others and job availability after graduation were the most commonly expressed motives. In interviews with participants, it also emerged that exposure to clinical role models (visiting optometrists with parents, volunteering with an optometry student, for example) had some influence on their career choice. This corresponds with studies of optometry students (Mashige and Oduntan, 2011) young doctors (Paice *et al.*, 2002), and clinical nurses (Perry, 2009).

5.1.2.4 Reasons for choosing to work in the public sector

From a personal perspective, a sense of altruism (wanting to make a difference) and knowledge gaining (‘wanting to learn more’) were the highest reported reasons for choosing to work in the public sector. These choices appear to parallel reasons given by other eye health professionals. Studies by Gedde *et al.* (2005) and Noble *et al.* (2007) and found similar motivations in future ophthalmologists. In optometry, studies from Saudi Arabia, Ghana, and South Africa also attest to this (Boadi-Kusi *et al.*, 2014; Mashige and Oduntan, 2011; Oluwale, 2012).

‘Good working hours’ and ‘free weekends’ were highest rated motivations from a social standpoint. It may very well be that the regular working hours of state institutions, lack of clinical rotations and lack of work on weekends, unlike doctors or nurses, is attractive to optometrists. The flexibility of working hours was also mentioned in studies of future ophthalmologists (Lambert *et al.*, 2008) and optometrists (Mashige and Oduntan, 2011, Boadi-Kusi *et al.*, 2014).

From a job-related perspective, ‘job benefits’ was selected by the majority of participants in this category. Department of Health employees are known to receive medical aid contributions, home loan allowances, paid leave days and service bonuses (thirteenth cheque) (Parliamentary Monitoring Group, 2014b). While there is no published report on workplace benefits as attraction for eye health personnel, systematic reviews of job satisfaction amongst nurses, benefits were known to contribute to overall job satisfaction (Lu *et al.*, 2012).

Bursary and loan obligations were reported to be the most common reason for choosing public sector work for just over half the sample (53%, 22 out of 41). Bursaries are made available annually to candidates through the KZN Department of Health (KZN Department Of Health, 2014e). Districts support students through their studies and students are then expected to fulfil their obligations and serve in the district through a ‘year for year work back agreement’. For 2015, the KZN Department of Health, has made some R200 million (approximately \$17 million) available in bursaries for allied health professionals (South African Broadcasting Corporation, 2014). Wilson *et al.*, (2009), noted that this strategy may result in more health workers, but the long term effect on the rural health workforce is not clear. Given the large number of optometrists currently completing their bursary obligations coupled with the large number of optometrists who predict leaving the sector, within the next 3-5 years (Section 4.2.3), it may bode well for district health planners to revisit retention strategies to mitigate a large loss of staff.

Prior exposure to public sector work during undergraduate studies was a motivating factor for career choice and current clinical work. As per section 2.2.5.2, several interventions of exposure and sensitisation of undergraduate students to public health theory and practical work have been implemented at UKZN. While this exposure may have directly influenced one optometrist to choose public sector work (See Section 4.2.15), prior exposure has certainly prepared students to work in a public sector setting. One optometrist remarked that “[UKZN’s] curriculum has a focus on pathology, but also a holistic approach of treating patients – a difference I noticed with other universities that only see patients in final year”.

Not being able to open their own private practice was a reason to work in the public sector for 26.8% (11 out of 41) of the sample. With regulation of the profession, optometrists can start up their own independently functioning optometric practice or buy into a franchised model. With either option, start-up costs can be quite exorbitant for the recently graduated optometrist. Given bursary obligations, optometrists may not be able to start their own practice immediately. Further, with a large number of graduates being produced from an optometry school in the province, there is already a large number of well-established optometrists, creating competition for these new graduates.

5.1.3 RETENTION

5.1.3.1 Improving salaries

This was the highest ranked intervention needed to retain KZN optometrists in the public sector. Given occupational specific dispensation additions, salaries for a Grade 1 optometrist, is marked at R211 902 (\$18 219) per year or R18 491 (\$1 589) per month (Public Servants Association of South Africa, 2014). When asked to comment on what would be an ideal salary, given the present economic climate, an average of R344 712 (\$29 637) per year or R28 726 (\$2 469) per month emerged, almost R10 000 (\$1000) more than the present salary. When queried on how this ideal salary was derived, participants mentioned looking at personal financial obligations and also benchmarking against other allied health professionals (especially, pharmacists) in the similar Grade.

With South Africa's Consumer Price Index (CPI) on the rise over the last 5 years (Statistics South Africa, 2014b), additional financial pressure has been placed on everyday consumers for products, goods and services. It would seem that optometrists in the public sector, irrespective of marital status, are not immune to this pressure, hence a need for a higher salary. In comparison to other professions in the same Grade (Grade 1 Pharmacy salaries begin at R464 241 (\$40 018) or R38 686 (\$3 334) per month), a higher salary level does exist, but needs to be taken into context of the additional rural Allowance. As previously mentioned, optometrists were not considered on the initial round of Rural Allowance recipients and Health Trade Unions are still negotiating to have them included. What is apparent, though, is the large disparity in salaries between allied health professionals, which lobbying and advocacy through professional associations or public sector forums can try to reduce.

It is also worth recalling that rural allowances do not necessarily translate to improved retention, as Reid has shown for community service doctors (Reid, 2004). It would appear that combination of financial and non-financial incentives would be a proposed model to improve retention. This was found in a recent study of North West Province health professionals (Chelule and Madiba, 2014).

5.1.3.2 Career management

Career pathway or management was the second most needed intervention ranked by public sector participants. Ranking career progression after financial rewards was also found in systematic review of motivation and retention of health workers in developing countries (Willis-Shattuck *et al.*, 2008). Like Willis-Shattuck *et al.*, (2008) findings, career development should be linked with a broad human resource management (HRM) strategy.

The KZN Provincial Administration advocates a HRM framework that includes induction, career progression tracking and performance management (KZNWorks, 2012). In this study, reports of lack of induction, job descriptions, performance feedback and career tracking are signs of poor

implementation of this framework. It is recommended that HR departments revisit this HRM framework and provide appropriate induction and training to managers and optometrists alike.

5.1.3.3 Recognition by managers/supervisors

Recognition was rated by 83% (34 out of 41) of optometrists as a necessary intervention for their retention. The WHO notes that recognition of health staff as a global policy recommendation to improved retention (World Health Organisation, 2010b). Public recognition measures such as health days, awards and titles at local, national and international level create conditions to increase motivation of staff and contribute to their retention. In this study, for districts that implement them, there are instances of aforementioned recognition measures of public sector optometrists, with almost all districts observing World Sight Day.

From a professional perspective, some participants do not feel that they are being utilised fully. Some participants also felt that optometry does not receive the proper recognition and prioritization at a hospital level. The Global Competency-Based Model of Scope of Practice in Optometry (World Council of Optometry, 2014c) defines 3 broad areas, over and above refraction, that optometrists can participate in. Awareness of this scope of practice by hospital and district management might ensure increased utilisation of optometrists. Lastly, it has been noted that further research is needed to examine the effect of recognition on retention of the health workforce (Willis-Shattuck *et al.*, 2008; World Health Organisation, 2010).

5.1.3.4 Management relations

This intervention was ranked fourth by 73% (30 out of 41) participants. Current studies have pointed to the importance of good management relations and leadership in improving health workforce motivation (Kotzee and Couper, 2006; Dambisya *et al.*, 2007). The present study finds varying degrees of management and leadership, and lack of personal and professional support.

In some low-resources settings, it may be that some managers are not adequately trained to deal with staff and human resource challenges (Willis-Shattuck *et al.*, 2008). In some institutes, task-shifting may see clinicians assigned managerial duties and may not have adequate time or inclination to fully support staff (Ferrinho, 2012). Irrespective of the situation, managers need to have adequate skill and/or support to deal with human resource situations to ensure a motivated and supported workforce.

5.1.3.5 Equipment and physical infrastructure

Just over 70% of optometrists ranked this as an important intervention to aid in their retention. Interviews with optometrists have revealed that essential equipment is either not available or has to be shared amongst optometrists. Discussions have also shown that there are bureaucratic process for

budgeting and ordering equipment that hampers the procurement of equipment. Both of these situations resulted in a less than optimal service to patients, which included referrals of patients and inconvenience to patients. Findings of this study are similar to Patel *et al.*, (2010) who noted that lack of equipment can be frustrating for eye care staff and have an impact on (a) their ability to deliver high-volume, high quality services, (b) their motivation and, (c) retention.

The Public Finance Management Act (No. 1 of 1999) passed in 2000, requires all government departments ‘to ensure transparency and expenditure control...and to set the operational procedures for borrowing, guarantees, procurement and oversight over the various national and provincial revenue funds’ (National Treasury, 2014). To this end, many hospitals and public sector departments have instituted several procedures for the proper ordering, quotation and receiving of equipment. It is possible that these financial processes are implemented either inefficiently or officiously, as one district co-ordinator observed. A better understanding of the process by facility managers and optometrists may assist in alleviating this challenge.

5.1.3.6 Community service (CS)

While CS has not yet been implemented for optometrists, the current sample of participants (78%, 32 out of 41) has expressed support for it. Optometrists feel that CS will improve clinical skills, increase access to services for patients and increase the number of health professionals in the public sector. These sentiments are echoed in findings in Puerto Rico, Turkey, Thailand (Frehyowt *et al.*, 2010) and South Africa (Reid, 2004).

The use of CS as a vehicle to promote the profession of optometry, however, is beyond the basic objectives of CS as stated by the Department of Health. One can assume that this points to a desire for the recognition of the optometry profession in the larger health care delivery system.

5.1.3.7 Continuing professional development

Continuing Professional Development (or Continuing Medical Education) has been associated with retention of the health workforce (Kotzee and Couper, 2006; Willis-Shattuck *et al.*, 2008; Wilson *et al.*, 2009). Not only do they increase skill and knowledge, but also add a networking component with other health workers and may limit the sense of professional and social isolation (World Health Organisation, 2010b).

This study has found that there are financial (cost of transport, accommodation) and administrative (leave days to attend, motivating for support) issues which hamper optometrists from attending CPD workshops and activities. Regarding the financial aspect, there are several online platforms (e.g. Graduate Institute of Optometry, Eyesite.co.za) and others that offer CPD points for optometrists at a reduced cost relative to flights, transport and accommodation. In terms of the administrative

challenges, it is recommended that the importance of CPD activities are highlighted and linked with career pathway development (World Health Organisation, 2010b). The outcomes from the CPD activity can increase the optometrist's skills and knowledge of patient care making them better clinicians which can subsequently enhance the clinical service offered at the institute.

5.2 DISTRICT CO-ORDINATORS (DC's)

In interviews, district co-ordinators related strategies and challenges they encountered in recruiting and retaining public sector optometrists.

5.2.1 RECRUITMENT OF OPTOMETRISTS

5.2.1.1 Study bursaries

The offering of study bursaries is the primary method of recruiting optometrists into the public sector in KwaZulu-Natal province, with almost all districts offering bursaries for 2015 (KZN Department Of Health, 2014e).

The creation of bursaries by a district is highly dependent on hospital management planning and communicating needs to district co-ordinators. This may not always be the case, as evidenced by the following statement by a district co-ordinator, *"Supervisors have their own plans for their institutes... Sometimes you feel like an outsider to them..."* For effective bursary creation, it would bode all parties well to communicate regularly and effectively to ensure synergy of plans.

The use of bursaries for students of rural origin has been well documented in the USA, Canada and Australia as a method to increase rural health professionals. The effectiveness of this method on long term retention has not been documented and is suggested that future research be conducted on this aspect.

5.2.1.2 Advertising of posts

For district co-ordinators, advertising of optometry posts on the Department of Health website was the most common manner to recruit optometrists. At a university level, Mashige and Oduntan, (2011) found that marketing of optometry study opportunities through mainstream media was not very effective in recruiting students into the profession. This was particularly true for students in rural areas that may not have access to internet based marketing methods. Investigating other innovative community based methods to market bursaries (e.g. Open Days at high schools) might serve districts well.

5.2.1.3 Rural origin and public service

From district co-ordinators' experiences, they have found that some rural students, can identify with communities, choose to work in rural areas, while some rural students prefer to work in urban areas. On the other hand, urban students may find it harder to adjust and may not work longer than the length of their bursaries. Similar findings were found in systematic reviews of the community service intervention (Frehyowt *et al.*, 2010). This study found that just over a third (34%, 14 out of 41) of rural origin participants and a fifth (20%; 8 out of 41) urban origin participants did not see themselves at their institute over the next 3-5 years. Given the above, it may be important for HR planners and hospital managers to focus on retention efforts to make present optometrists stay on longer.

5.2.1.4 Reasons for choosing to work in the public sector

Direct statistical comparisons could not be made between optometrist's reasons and district co-ordinator's perceived reasons for choosing public service due to the different sample sizes. What can be noted, by observing reasons within the categories, is the similarity between health professionals and the district co-ordinator choices. Both sets of participants rated 'wanting to learn more' and 'job security' as important reasons, for example. This perhaps bodes well for relations between optometrists and district co-ordinators.

The following section evaluates retention strategies and challenges as experienced by district co-ordinators in their respective districts.

5.2.2 RETENTION OF OPTOMETRISTS

The National Health Act. 61 of 2003, sought to provide a framework for a unified health system for South Africa. (Acts Online, 2013). One of its tenets is to establish a health system based on decentralized governance, granting more managerial and financial autonomy to health districts. At the district level in KZN, this has been taken one step further where budgeting for eye health programmes is done at the institute level by Hospital management, with oversight done at the district level by district co-ordinators. The discussion that follows is placed within the above context with regards to the interventions that co-ordinators feel are essential to retain optometrists in their districts.

5.2.2.1 Recognition of optometrists

District co-ordinators acknowledge that recognition of optometrists needs to be prioritised. It is up to the individual facility to appropriately budget and market eye health services to the community. They are aware of year-end ceremonies and community outreach activities where public recognition of optometrists occurs.

Some co-ordinators feel that optometry needs to share the same status as other allied health professions – both in support and remuneration. Given that district co-ordinators function within a hierarchical management structure with broad financial decisions regarding salary coming down from a Provincial Head Office, there is little that they can do.

5.2.2.2 Salary

In terms of salary expectations, responding DC's felt that optometrists should be earning an average of R398 508 (\$34 351) per year or R33 209 (\$2 862) per month. This is some R15 000 (\$1 293) more than present Grade 1 salaries and approximately R5 000 (\$431) more than the ideal salary suggested by optometrists.

The fact that DC's ranked recognition higher than salary is indicative of the need for non-financial incentives, along with an acceptable salary, for retention of the workforce.

5.2.2.3 Career pathway development

Performance management and other human resource management activities occur at the facility level, with the District office supporting and guiding the process. Optometrists previously mentioned that employee evaluations are not given the full importance they deserve and are considered a paper exercise. Furthermore, it is interesting to note that employee evaluations are not shared with district co-ordinators. It would appear that the devolution of certain HR processes to the facility level has effects on performance management and ultimately career pathing of optometrists. To this end, it would be imperative for DC's to engage facility level HR and managers to ensure that health workers' career needs are monitored and developed.

5.3.2.4 Equipment and infrastructure

The challenge of procuring equipment has been discussed from the optometrist's perspective above. While budgeting and motivation again occurs at the institute level, DC's encourage optometrists to engage their managers to ensure proper equipment is timeously budgeted for using the proper channels. DC's also request optometrists to have clear communication between hospital managers and themselves and to highlight challenges and obstacles for speedy resolution.

5.3 CONCLUSIONS

The key findings, aligned to the specific objectives of this study, reveal the following:

1. Determine a demographic and educational profile of optometrists presently working in the public sector in KwaZulu-Natal.

The current team of optometrists working in KZN's public sector hospitals are:

- a) Mainly African, female, under the age of 30.
 - b) Professionals that had either an urban or rural origin.
 - c) May have been influenced by siblings or aunts/uncles to pursue a career in health where they most likely attended University of KwaZulu-Natal Optometry School.
 - d) The public sector post was not necessarily their first job (worked in private practice full time or at another hospital).
-
2. Compile a list of factors that make optometrists choose the public sector:
 - a) For half of these professionals, they were personally motivated to want to make a difference and to learn more.
 - b) From a social perspective, the ability to enjoy free weekends and have good working hours were reasons.
 - c) In terms of the job itself, job security and the benefits that it brings was attractive to about a third of optometrists.
 - d) Just over half of Optometrists chose to work in the public sector due to a bursary obligation from their respective districts.
 - e) Relative to their private sector experience, optometrists opted to work at a hospital because it was too expensive to open their own practice.
-
3. Identify interventions that would retain presently serving optometrists in the public sector:
 - a) Improving salaries to be on par with other allied professionals.
 - b) Career progression through better human resource management systems.
 - c) Recognition – for the individual optometrist and for the profession in general.
 - d) Improvement of physical infrastructure and efficient, timeous provision of appropriate equipment.
 - e) Strong and supportive hospital management with good leadership, communication and planning.

4. Obtain insight from the Department of Health in KwaZulu-Natal (District Health Co-ordinators) regarding strategies and challenges experienced with recruiting and retaining public sector optometrists.
 - a) In recruiting new optometrists, bursaries were the primary strategy used by Districts.
 - b) Marketing of posts need to be innovative and beyond mainstream media, especially if wanting to recruit in rural areas.
 - c) In retention of health staff, district co-ordinators ranked the importance of interventions similarly as optometrists.
 - d) Despite facilities having control of budgets, better engagement, communication and planning is needed with hospital management and optometrists.

5.4 LIMITATIONS

1. An 80% response rate could have been increased if questionnaires were distributed at CPD workshops or Public Sector Forum meetings as all participants would have been at one venue.
2. At the inception of the research, district co-ordinators were identified as key informants due to their intimate knowledge of the programme. In the course of the study, budgets and programming was devolved to hospital management by National instruction. To this end, interviews with facility managers, who are now closer to the eye programmes, would have revealed more insights.
3. Defining of the participant's area of origin could have been enhanced. Respondents were asked to merely indicate which area best describes where they grew up. Although this method has been used by Mashige and Oduntan (2011) and Fine (1997), other studies (Reid, 2011; Couper, 2007) have asked participants to indicate the postal code of their hometowns – this was used against a national database to classify the rural/urban nature of participant's background.

5.5 RECOMMENDATIONS

1. Recruitment:

- a) Marketing of optometry as a career to be done in innovative ways, especially in rural areas through Open Days and community-based events
- b) At University level, selection criteria for optometry to consider rural origin students that may have siblings or extended family as health professionals and/or bursary obligations.
- c) Selection criteria to include White and Coloured applicants to redress racial equity and perhaps bring provincial representivity to public sector optometry.

- d) More exposure to clinical work in public sector setting in undergraduate studies.

2. Retention:

- a) Advocating for salaries and benefits comparable to other allied health professions through public sector forum and/or health trade union
- b) Better human resource management by facility HR units and/or engagement at hospital and district level.
- c) Optometrists to be pro-active in budgeting and procurement process [for equipment, CPD activities,] and to raise challenges with supervisor and district co-ordinators timeously
- d) Investigation of online CPD activities for hospitals that have limited budget for optometrists.
- e) District co-ordinators to prepare for the financial, logistical and operational challenges the implementation of community service for optometrists might bring.

3. Research:

- a) More research needs to be conducted amongst public sector optometrists to better understand their challenges and motivation.
- b) Effects of recruitment and retention interventions for public service optometrists need investigation.
- c) Research on a longitudinal cohort of students from the time of entry to optometry school, through undergraduate training and even after graduation needs to be conducted. No such study for optometrists has been done yet.
- d) An investigation into the reasons why optometrists exit the public sector will be helpful for HR planners and Districts alike.

CHAPTER 6 - REFERENCES

Acts Online. (2013). National Health Act, 2003 (Act No. 61 of 2003). [Online]. Available from - <http://www.acts.co.za/national-health-act-2003/>. [Accessed: 19 October 2014].

Anzenberger, P., Popov, S. B., and Ostermann, H. (2011). Factors that motivate young pharmacists to work in rural communities in the Ukraine. *Rural and Remote Health*. [Online]. Available from - <http://www.rrh.org.au>. [Accessed: 28 February 2014].

Ausman, J., Javed, A., Ahmed, S., Abdul Samad, M., Pour, A., Mathew, E., Shaikh, R., Al-Sharbatti, S., and Sreedharan, J. (2013). Social factors influencing career choice in a medical school in the United Arab Emirates. *Education in Medicine Journal*. [Online]. Available from - <http://www.eduimed.com/index.php/eimj/article/view/16>. [Accessed: 14 October 2014].

Awases, M., Gbary, A., Nyoni, J., and Chatora, R. (2004). Migration of health professionals in six countries: a synthesis report. World Health Organization WHO-AFRO DHS. [Online]. Available from - <http://www.afro.who.int/dsd/migration6countriesfinal.pdf>. [Accessed: 28 June 2014].

Boadi-Kusi, S. B., Kyei, S., Mashige, K. P., Abu, E. K., Antwi-Boasiako, D., and Halladay, A. C. (2014). Demographic characteristics of Ghanaian optometry students and factors influencing their career choice and institution of learning. *Advances in Health Sciences Education*. [Online]. 19(2). Available from - <http://link.springer.com/article/10.1007%2Fs10459-014-9505-9>. [Accessed: 13 September 2014].

Brien Holden Vision Institute. (2014a). Academic Vision Centre handed over in Malawi. [Online]. Available from - <http://www.brienholdenvision.org/media-centre/latest-news/803-academic-vision-centre-handed-over-in-malawi.html>. [Accessed: 22 October 2014].

Brien Holden Vision Institute. (2014b). Eye care needs. [Online]. Available from - <http://www.brienholdenvision.org/global-eye-care/eye-care-needs.html>. [Accessed: 1 April 2014].

Brien Holden Vision Institute. (2014c). HR Development. [Online]. Available from <http://www.brienholdenvision.org/global-eye-care/human-resource-development.html>. [Accessed: 5 April 2014].

Buykx, P., Humphreys, J., Wakerman, J., and Pashen, D. (2010). Systematic review of effective retention incentives for health workers in rural and remote areas: Towards evidence-based policy. *Australian Journal of Rural Health*. 18: 102-109.

Campbell, J., Dussault, G., Buchan, J., Pozo-Martin, F., Guerra Arias, M., Leone, C., Siyam, A., and Cometto, G. (2013). A universal truth: no health without a workforce. Forum Report, Third Global

Forum on Human Resources for Health, Recife, Brazil. Global Health Workforce Alliance (GHWA) and World Health Organization (WHO). [Online]. Available from - <http://www.who.int/workforcealliance/knowledge/resources/hrhreport2013/>. [Accessed: 5 February 2014].

Carter, R. G. (1987). The relation between personal characteristics of physicians and practice location in Manitoba. *Canadian Medical Association Journal*. 136(4): 366-368.

Chelule, P. K., and Madiba, S. (2014). Assessment of the effectiveness of rural allowances as a strategy for recruiting and retaining health professionals in rural public hospitals in the North West Province, South Africa: management of health care services. *African Journal for Physical Health Education, Recreation and Dance: Public Health Research as a cornerstone of health services reform*: Supplement 1. 20: 84-90.

Clemens, M. A., and Pettersson, G. (2008). New data on African health professionals abroad. *Human Resources for Health*. [Online]. Available from - <http://www.human-resources-health.com/content/6/1/1>. [Accessed: 23rd April 2009].

Couper, I. D., Hugo, J. F. M., Conradie, H., and Mfenyana, K., (2007). Influences on the choice of health professionals to practice in rural areas. *South African Medical Journal*. 97(11): 1082-1086.

Courtright, P., Ndegwa, L., Msosa, J., and Banzi, J. (2007) Use of our existing eye care human resources: assessment of productivity of cataract surgeons trained in eastern Africa. *Archives of Ophthalmology*. 125: 684-687.

Dambisya, Y. M., Modipa, I. S., and Legodi, M. G. (2007). Factors influencing the distribution of pharmacy graduates of the University of the North, South Africa. *East African Medical Journal*. 84(10): 481-8.

Dambisya, Y. M., Malema, N., Dulo, C., Matinhure, S., and Kadama, P. (2014) The engagement of east and Southern African countries on the WHO Code of Practice on the International Recruitment of Health Personnel and its implementation. Regional Network for Equity in Health (EQUINET): Discussion Paper 103. [Online]. Available from - <http://www.Hrhresourcecenter.org/node/5808>. [Accessed: 13 October 2014].

de Vries, E., and Reid, S. (2003). Do South African medical students of rural origin return to rural practice? *South African Medical Journal*. 93(10): 789-793.

Department of Health (2014). Human Resources for Health: South Africa. HRH Strategy for the Health Sector: 2012/13 – 2016/17. [Online]. Available from - <http://www.health.gov.za/straticdocs.php>. [Accessed: 28 October 2014]

Dieleman, M., Cuong, P. V., Anh, L. V., and Martineau, T. (2003). Identifying factors for job motivation of rural health workers in North Vietnam Human. Resources for Health. [Online]. Available from - <http://www.human-resources-health.com/content/1/1/10>. [Accessed: 28 November 2012].

Discovery. (2014). Discovery Foundation. [Online]. Available from- <https://www.discovery.co.za/portal/individual/corporate-view-content?corporateNodeName=discovery-foundation>. [Accessed: 28 October 2014].

Ditlopo, P., Blaauw, D., Bidwell, P. and Thomas, S. (2011). Analyzing the implementation of the rural allowance in hospitals in North West province, South Africa Journal of Public Health. [Online]. 32: S80-S93. Available from - <http://www.palgrave-journals.com/jphp/journal/v32/n1s/full/jphp201128a>. [Accessed: 26 June 2014].

Ditlopo, P., Blaauw, D., Rispel, L. C., Thomas, S, and Bidwell, P. (2013). Policy implementation and financial incentives for nurses in South Africa: A case study on the occupation-specific dispensation. [Online]. *Global Health Action*. 6: 19289. Available from - <http://www.ncbi.nlm.nih.gov/pubmed/23364085>. [Accessed: 12 June 2014].

Dunbabin, J. S., and Levitt, L. (2003). Rural origin and rural medical exposure: their impact on the rural and remote medical workforce in Australia. *Rural and Remote Health*. [Online]. Available from - <http://www.rrh.org.au>. [Accessed: 3 December 2013].

Easterbrook, M., Godwin, M., Wilson, R., Hodgetts, G., Brown, G., Pong, R., and Najgebauer, E. (1999). Rural background and clinical rural rotations during medical training: effect on practice location. *Canadian Medical Association Journal*. 160(8): 1159-1156.

Ebuehi, O. M., and Campbell, P. C. (2011). Attraction and retention of qualified health workers to rural areas in Nigeria: a case study of four LGAs in Ogun State, Nigeria. *Rural and Remote Health*. [Online]. 11: 1515. Available from - <http://www.rrh.org.au>. [Accessed: 6 June 2014].

Edge, J. S., and Hoffman, S. J. (2013). Empirical impact evaluation of the WHO Global Code of Practice on the International Recruitment of Health Personnel in Australia, Canada, UK and USA. *Globalization and Health*. [Online]. Available from - <http://www.globalizationandhealth.com/content/9/1/60>. [Accessed: 8 February 2014].

Exavery, A., Lutambi, A. M., Wilson, N., Mubyazi, G. M., Pemba, S., and Mbaruku, G. (2013). Gender-based distributional skewness of the United Republic of Tanzania's health workforce cadres: a cross-sectional health facility survey. *Human Resources for Health*. [Online]. Available from - <http://www.human-resources-health.com/content/11/1/28>. [Accessed: 10 February 2014].

Eze, B. I., and Maduka-Okafor, F. C. (2009). An assessment of the eye care workforce in Enugu State, south-eastern Nigeria. *Human Resources for Health*. [Online]. Available from - <http://www.human-resources-health.com/content/7/1/38>. [Accessed: 17 September 2014].

Ferrinho, P., Sidat, M., Goma, F., and Dussault, G. (2012). Task-shifting: experiences and opinions of health workers in Mozambique and Zambia. *Human Resources for Health*. [Online]. Available from - <http://www.biomedcentral.com/content/pdf/1478-4491-10-34.pdf>. [Accessed: 17 July 2014].

Ferry, T. R., Fouad, N. A., and Smith, P. L. (2000). The role of family context in a social cognitive model for career-related choice behavior: A math and science perspective. *Journal of Vocational Behavior*. 57(3): 348-364.

Fine, L. E. (1997). Perceptions, expectations and realities of the graduating class of 1995 at Rand Afrikaans University, Department of Optometry. *South African Optometrist*. 56: 6-14.

Fryer, G. E. Jr., Stine, C., Vojir, C., and Miller, M. (1997). Predictors and profiles of rural versus urban family practice. *Family Medicine*. 29(2): 115-118.

Frehywot, S., Mullan, F., Payne, P. W., and Rossa, H. (2010). Compulsory service programme as a means of deploying and retaining health workers in rural, remote and underserved areas – a global analysis. *Bulletin of the World Health Organization*. 88(5): 364-370.

Gedde, S. J., Budenz, D. L., Haft, P., Tielsch, J. M., Lee, Y., and Quigley, H. A. 2005. Factors influencing career choices among graduating ophthalmology residents. *Ophthalmology*. 112(7): 1247-1254.

George, G., Quinlan, T., and Reardon, C. (2009). Human resources for health: a needs and gaps analysis of Human Resources for Health in South Africa. Durban. [Online]. Health Economics and HIV and AIDS Research Division (HEARD). Available from - <http://www.heard.org.za/heard-resources/2009#journal-articles>. [Accessed: 3 December 2013].

George, G., and Rhodes, B. (2012). Is there really a pot of gold at the end of the rainbow? Has the Occupational Specific Dispensation, as a mechanism to attract and retain health workers in South Africa, levelled the playing field? *BMC Public Health*. [Online]. 12: 613. Available from - <http://www.biomedcentral.com/1471-2458/12/613>. [Accessed: 14 May 2014].

George, G., Atujuna, M., and Gow, J. (2013). Migration of South African health workers: the extent to which financial considerations influence internal flows and external movements. *BMC Health Services Research*. [Online]. 13: 297. Available from - <http://www.biomedcentral.com/1472-6963/13/297>. [Accessed: 19 August 2014].

Global Health Workforce Alliance. (2014). [Online]. Available from - <http://www.who.int/workforcealliance/about/en/> [Accessed: 29 August 2014].

Grobler, L. A., Marais, B. J., Mabunda, S. A., Marindi, P. N., Reuter, H., and Volmink, J. (2009). Interventions for increasing the proportion of health professionals practising in rural and other underserved areas. *Cochrane Database of Systemic Reviews*. [Online]. Available from - <http://www.ncbi.nlm.nih.gov/pubmed/1916025>. [Accessed: 17 July 2014].

Gupta, N., and Dal Poz, M. R. (2009) Assessment of human resources for health using cross-national comparison of facility surveys in six countries. *Human Resources for Health*. [Online] Available from - <http://www.human-resources-health.com/content/7/1/22>. [Accessed: 30 October 2013].

Hagopian, A. Zuyderduin, A. Kyobutungi, N. and Yumkella, F. (2009). Job satisfaction and morale in the Ugandan health workforce. *Health Affairs*. 28(5): 863-875.

Hansraj, R. (2009). The perspective of optometry students of the Phelophepa train regarding its role in developing experiential skills. *South African Optometrist*. 68(2) 61-69.

Hatcher, A., Onah, M., Kornik, S., Peacocke, J., and Reid, S. (2014). Placement, support, and retention of health professionals: national, cross-sectional findings from medical and dental community service officers in South Africa. *Human Resources for Health*. 12:14. [Online] Available from - <http://www.human-resources-health.com/content/12/1/14>. [Accessed: 11 November 2014].

Health Professionals Council of South Africa. (HPCSA). (2014a). [Online]. South Africa. Available from - <http://www.hpcsa.co.za>. [Accessed: 9 July 2014].

Health Professionals Council of South Africa. (HPCSA). (2014b). [Online]. Continuing professional development Guidelines for the health care professionals: January 2011. Available from - http://www.hpcsa.co.za/Content/Docs/guidelines_2011.pdf. [Accessed 16 July 2014].

Health Professionals Council of South Africa. (HPCSA). (2014c). [Online]. Protecting the public. Guiding the professions. Available from - http://www.hpcsa.co.za/uploads/editor/UserFiles/downloads/publications/annual_reports/hpcsa_annual_report_2011_2012.pdf. [Accessed: 28 October 2014].

Health Systems Trust. (2004). More cash for health workers in rural areas. [Online]. Available from - <http://www.hst.org.za/news/more-cash-health-workers-rural-areas>. [Accessed: 21 September 2014].

Health Systems Trust. (2011). Human Resource Strategy for the Health Sector: 2012/13 - 2016/17. [Online]. Available from - <http://www.hst.org.za/publications/human-resource-strategy-health-sector-201213-201617> [Accessed: 21 September 2014].

Health Systems Trust. (2014). District Health Barometer 2007/08 [Online]. Available from - <http://www.hst.org.za/publications/district-health-barometer-200708> [Accessed: 29 September 2014].

Henderson, L. N., and Tulloch, J. (2008). Incentives for retaining and motivating health workers in Pacific and Asian countries. *Human Resources for Health*. [Online]. 6: 18. Available from - <http://www.human-resources-health.com/content/6/1/1>. [Accessed: 1 August 2014].

Holden, B. A., and Resnikoff, S. (2002). The role of optometry in VISION 2020. *Community Eye Health Journal*. 15(43): 33-36.

Holden, B. A., Fricke, T. R., May Ho, S., Wong, R., Schlenther, G., Cronjé, S., Burnett, A., Papas, E., Naidoo, K. S., and Frick, K. D. (2008). Global vision impairment due to uncorrected presbyopia. *Archives of Ophthalmology*. 126(12): 1731-1739.

Ingram, D. V., and Culham, L. E. (2001). Ophthalmologists and optometrists - interesting times? *British Journal of Ophthalmology*. 85: 769-70.

International Agency for the Prevention of Blindness. (2014a) VISION 2020. [Online] Available from - <http://www.iapb.org/vision-2020>. [Accessed: 1 December 2014].

International Agency for the Prevention of Blindness. (2014b). IAPB Africa Human Resources for Eye Health Strategic Plan 2014-2023. [Online] Available from - <http://www.iapbafrica.co.za/resource/resourceitem/493/1> [Accessed: 11 September 2014].

Joubert, M. (2009). Deregulation in the South African Optometry Industry. A research report submitted in partial fulfilment of the Requirements of University of Stellenbosch for the degree of Masters of Business Administration. [Online]. Available from - <http://scholar.sun.ac.za/handle/10019.1/924>. [Accessed: 30 June 2014].

Kok, P., and Collinson, M. (2006). Migration and urbanisation in South Africa. Report 03-04-02. [Online]. Statistics South Africa. Pretoria. Available from - <http://www.statssa.gov.za/publications/report-03-04-02/report-03-04-02.pdf>. [Accessed: 10 August 2014].

Kolasinski, S. L., Bass, A. R., Kane-Wanger, G. F., Libman, B. S., Sandorfi, N., and Utset, T. (2007). Subspecialty choice: why did you become a rheumatologist? *Arthritis and Rheumatism*. 57(8): 1546 - 1551.

Kotzee, T., and Couper, I. D. (2006). What interventions do South African qualified doctors think will retain them in rural hospitals of the Limpopo province of South Africa? *Rural and Remote Health*. [Online]. 6(3): 581. Available from -<http://www.ncbi.nlm.nih.gov/pubmed/16965219>. [Accessed: 22 October 2014].

KZN Department of Health. (2014a). Hospital Revitalisation Programme. [Online] Available from - <http://www.kznhealth.gov.za/revite.htm>. [Accessed: 12 March 2014].

KZN Department of Health. (2014b). Hospitals, CHC's and Clinics. [Online] Available from - http://www.kznhealth.gov.za/heath_institutions.htm. [Accessed: 12 March 2014].

KZN Department of Health. (2014c). iLembe Health District Newsletter. [Online] Available from - http://www.kznhealth.gov.za/ilembe/newsletter/September_2014.pdf. [Accessed: 12 May 2014].

KZN Department of Health.(2014d). KZN Health Bursaries. [Online] Available from - <http://www.kznhealth.gov.za/bursaries.htm> [Accessed: 12 November 2014].

KZN Department of Health. (2014d). Annual Performance Plan for 2013/14 - 2015/16 [Online] Available from - http://www.kznhealth.gov.za/Annual_Performance_Plan_KZN_DOH_APP_2013.14_2015.16.pdf. [Accessed: 3 November 2014]

KZN Department of Public Works. (2014) Provincial policy framework on retention of employees in the workplace. [Online]. Available from - <http://www.kznworks.gov.za/Vmenu/PolicyLegislation.Aspx>. [Online]. [Accessed: 16 June 2014].

Lambert, T. W., Goldacre, M. J., and Bron, J. A. (2008). Career choices for ophthalmology made by newly qualified doctors in the United Kingdom, 1974–2005. *BMC Ophthalmology*. [Online]. Available from - <http://www.biomedcentral.com/1471-2415/8/3>. [Accessed: 8 March 2014].

Laven, G., and Wilkinson, D. (2003). Rural doctors and rural backgrounds: how strong is the evidence? A systematic review. *Australian Journal of Rural Health*. 11(6): 277-284.

Lecouna, K. (2007). A Situational Analysis of the Eye Care Programmes in the 53 Health Districts in South Africa in 2006. A Dissertation submitted in partial fulfilment of the Requirements of London School of Hygiene and Tropical Medicine for the Master's Degree in Community Eye Health. [Online]. Available from - http://www.lshtm.ac.uk/library/MSc_CEH/2006-07/471649.pdf

Lehmann, U., Dieleman, M., and Martineau, T. (2008) Staffing remote rural areas in middle- and low-income countries: A literature review of attraction and retention. *BMC Health Services Research*. [Online]. Available from - <http://www.biomedcentral.com/1472-6963/8/19>. [Accessed: 19 September 2012].

Lewallen, S., Mahande, M., Tharaney M., Katala S., and Courtright, P. (2007) Surgery for trachomatous trichiasis: findings from a survey of trichiasis surgeons in Tanzania. *British Journal of Ophthalmology*. 91: 143–145.

Lu, H., Barriball, K. L., Zhang, X., and While, A. E. (2012). Job satisfaction among hospital nurses revisited: A systematic review. *International Journal of Nursing Studies*. 49(8): 1017-1038.

Maharaj, S. H. (2008). An investigation of the factors affecting the career choice of selected health-care students (physiotherapy, chiropractic, medicine and occupational therapy) in KwaZulu-Natal. A Dissertation submitted in partial fulfilment of the Requirements of Durban University of Technology for the Master's Degree in Technology: Chiropractic. [Online]. Available from - <http://ir.dut.ac.za/handle/10321/501> [Accessed: 30 May 2014]

Mahlathi, P. (2009). Occupational specific dispensation for occupational specific dispensation for medical and dental practitioners, pharmaceutical and EMS personnel. [Online]. Available from - <http://www.pmg.org.za/report/20090818-occupational-specific-dispensation-health-department-briefing>. [Accessed: 2 February 2011].

Makapela, N. C., and Useh, U. (2013). Rural allowance and the retention of health professionals in selected hospitals in the North West Province of South Africa. *Journal of Human Ecology*. 44(2): 129-138.

Manafa, O., McAuliffe, E., Maseko, F., Bowie C., MacLachlan, M., and Normand, C. (2009). Retention of health workers in Malawi: perspectives of health workers and district management. *Human Resources for Health*. [Online]. Available from - <http://www.human-resources-health.com/content/7/1/65>. [Accessed 10 September 2012].

Management Sciences for Health. (2002). Editor's Note. Creating a work climate that motivates staff and improves performance. *The Manager*. Boston. 11(3): 1- 22.

Mangoedi, M. (2014). Email. 3 November 2014.

Mashige, K. P. (2010). Optometric education at Westville: past, present and future. *The South African Optometrist*. 69(1): 11-20.

Mashige, K. P., and Naidoo, K. S. (2010) Optometric practices and practitioners in KwaZulu-Natal, South Africa. *The South African Optometrist*. 69(2): 77-85.

Mashige, K. P., and Oduntan, O. A. (2011). Factors influencing South African optometry students in choosing their career and institution of learning. *The South African Optometrist*. 70(1): 21-28.

Mashige, K. P., Rampersad, N., and Oduntan, O. A. (2013). Perceptions and opinions of graduating South African optometry students on the proposed community service. *The South African Optometrist*. 72(1): 11-18.

Masnack, K., and Gavzey, R. (2004). What Is an Optometrist? *Optometry and Vision Science*. 81(5): 289-290.

Mathauer, I., and Imhoff, I. (2006). Health worker motivation in Africa: the role of non-financial incentives and human resource management tools. *Human Resources for Health*. [Online]. Available from - <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1592506/>. [Accessed: 16 January 2011].

Mathonsi, N. 2014. Email. 6 November.

Matsosoi, M. B., and Strachani, B. (2011) Human Resources for Health for South Africa: HRH Strategy for the Health Sector 2012/13 - 2016/17. In: *South African Health Review 2011*. [Online] Available from - <http://www.hst.org.za/publications/south-african-health-review-2011>. [Accessed: 7 December 2013].

Meyer, M., and Kirsten, M. (ed). (2005). *Introduction to Human Resource Management*. Cape Town: New Africa Books.

McAuliffe, T., and Barnett, F. (2009). Factors influencing occupational therapy students' perceptions of rural and remote practice. *Rural and Remote Health*. [Online]. 9(1): 1078. Available from - <http://www.rrh.org.au>. [Accessed: 30 April 2009].

McQuerrey, L. (2014). Family factors influencing career choices. [Online]. Available from - <http://work.chron.com/family-factors-influencing-career-choices-11176.html>. [Accessed: 11 November 2014].

Molinari, D. L., and Monserud, M. A. (2008). Rural nurse job satisfaction. *Rural and Remote Health*. [Online]. Available from - <http://www.rrh.org.au>. [Accessed: 5 August 2014].

Moodley, V. 2014. Email. 20 October 2014.

Mullan, F., Frehywot, S., Omaswa, F., Buch, E., Chen, C., Greysen, S. R., Wassermann, T. Abubakr, D. E. E., Awases, M., Boelen, C., Diomande, M. J. M. I., Dovlo, D., Ferro, J., Haileamlak, A., Iputo, J., Jacobs, M., Koumaré, A. K., Mipando, M., Monekosso, G. L., Olapade-Olaopa, E. O., Rugarabamu, P., Sewankambo, N. K., Ross, H., Ayas, H., Chale, S. B., Cyprien, S., Cohen, J., Haile-Mariam, T., Hamburger, E., Jolley, L., Kolars, J. C., Kombe, G., and Neusy, A. J. (2011). Medical schools in sub-Saharan Africa. *The Lancet*. 9771(377): 1113-1121.

Müller, A., Murenzi, J., Mathenge, W., Munana, J., and Courtright, P. (2010). Primary eye care in Rwanda: gender of service providers and other factors associated with effective service delivery. *Tropical Medicine and International Health*. 15(5): 529-533.

Mutale, W., Ayles, H., Bond, V., Mwanamwenge, M. T., and Balabanova, D. (2013). Measuring health workers' motivation in rural health facilities: baseline results from three study districts in Zambia. *Human Resources for Health*. [Online]. 11:8. Available from - <http://www.human-resources-health.com/content/11/1/8>. [Accessed: 4 May 2014].

Naidoo, K. 2008. Personal communication. 20 October.

Naidoo, K. 2014. Personal communication. 27 December

Naidoo, K., Gichuhi, S., Basáñez, M. G, Flaxman, S. R., Jonas, J. B., Keeffe, J., Leasher, J. L., Pesudovs, K., Price, H., Smith, J. L., Turner, H. C., White, R. A., Wong, T. Y., Resnikoff, S., Taylor, H. R., and Bourne, R. R. (2014a). Prevalence and causes of vision loss in sub-Saharan Africa: 1990-2010. *British Journal of Ophthalmology*. 98: 612-618.

Naidoo K., Jaggernath, J., Bilotto, L., Chinanayi, F., and Govender P. (2014b). WCO Public Health Survey: Public Health Education in Optometric Institutions. Unpublished study..

Naidu, C., Irlam, J., and Diab, P. N. (2013). Career and practice intentions of health science students at three South African health science faculties. *African Journal of Health Professions Education*. 5(2): 68-71.

National Treasury. (2014) Legislation - Public Finance Management Act - PFMA. [Online]. Available from - <http://www.treasury.gov.za/legislation/pfma/>. [Accessed: 5 December 2014].

Newman, C. (2014) Time to address gender discrimination and inequality in the health workforce. *Human Resources for Health*. [Online]. Available from - <http://www.human-resources-health.com/content/12/1/25>. [Accessed: 12 November 2014].

Nirghin, U., Ebrahim Khan, N., and Mashige, K. P. (2011). Institutional, gender and racial profiles of South African optometrists. *The South African Optometrist*. 70(3): 123-128.

Noble, J., Schendel, S., Daniel, S., Baerlocher, M. O. (2007). Motivations and future trends: a survey of Canadian ophthalmology residents. *Canadian Journal of Ophthalmology*. 42(6):821-825.

National Union of Public Service and Allied Workers. (2014). Rural Allowance for Optometrists: We are striving to ensure that the optometrists are also considered for rural allowance; matter has been tabled at National PHSDSBC for further deliberations. We indeed put the workers first!!! [Facebook status update]. Available from - https://www.facebook.com/permalink.php?story_fbid=685687691472307&id=283186488389098.

Nxumalo, F. (2014). Interview. 29 Jul 2014.

Odhav, K. (2009). South African post-apartheid higher education policy and its marginalisations. *SA-eDUC Journal*. 6(1): 20-48.

Oduntan, A. O. (2006). Thirty years of optometric education at Turfloop (1975-2005): A historical and educational overview. *The South African Optometrist*. 65(1): 34-40.

Oduntan, A.O., Louw, A., Moodley, V. R., Richter, M., and Von Poser, P. (2007). Perceptions, expectations, apprehensions and realities of graduating South African optometry students. *South African Optometrist*. 66(3): 94-108.

Oduntan, O. A., Mashige, K. P., Kio, F. E., and Boadi-Kusi, S. B. (2014). Optometric education in Africa: historical perspectives and challenges. *Optometry and Vision Science*. 91(3): 359-365.

Ojeda, B. S., Creutzberg, M., Pandolfo Feoli, A. M., da Silva Melo, D., and Corbellini, V. L. (2009). Nursing, nutrition and physiotherapy students: career choice. *Latin American Journal of Nursing*. 17(3): 396-402.

Oluwole, O. C. (2012). Factors Influencing Choice of Specialty amongst Nigerian Ophthalmologists. *Pakistan Journal of Ophthalmology*. 28(1): 10-13.

Ovenseri-Ogbomo, G. O., Kiob, F. E., Mornyc, E. K., Amedod, A. O., and Oriowoe, O. M. (2011). Two decades of optometric education in Ghana: Update and recent developments. *The South African Optometrist*. 70(3): 136-141.

Paice, E., Heard, S., and Moss, F. (2002). How important are role models in making good doctors? *BMJ*. 325(7366): 707-710.

Palmer, J. J., Chinanayi, F., Gilbert, A., Pillay, D., Fox, S., Jaggernath, J., Naidoo, K., Graham, R., Patel, D., and Blanchet, K. (2014a). Mapping human resources for eye health in 21 countries of sub-Saharan Africa: current progress towards VISION 2020. *Human Resources for health*. [Online]. 12: 44. Available from - <http://www.human-resources-health.com/content/12/1/44>. [Accessed: 20 October 2014].

Palmer, J. J., Chinanayi, F., Gilbert, A., Pillay, D., Fox, S., Jaggernath, J., Naidoo, K., Graham, R., Patel, D., and Blanchet, K. (2014b). Trends and implications for achieving VISION 2020 human resources for eye health targets in 16 countries of sub-Saharan Africa by the year 2020. *Human Resources for Health*. [Online]. 12: 45. Available from - <http://www.human-resources-health.com/content/12/1/45>. [Accessed: 27 October 2014].

Parliamentary Monitoring Group. (2014a). Hospital Revitalisation Programme and Retention of Health Professionals: Department briefings. [Online]. Available from - <http://www.pmg.org.za/>

minutes/20050823-hospital-revitalisation-programme-and-retention-health-professionals-department-bri. [Accessed: 7 May 2014].

Parliamentary Monitoring Group. (2014b). National Department of Health Annual Report 2013/14. [Online] Available from <http://www.pmg.org.za/policy-documents/2014/09/30/national-department-health-annual-report-201314-0> [Accessed 8 May 2014]

Pascolini, D., and Mariotti, S. P. (2010). Global estimates of visual impairment. *British Journal of Ophthalmology*. [Online]. Available from - <http://bjo.bmj.com/content/early/2011/11/30/bjophthalmol-2011-300539.full.pdf+html>. [Accessed: 13 April 2012].

Patel, D., Mercer, E., and Mason, I. (2010). Ophthalmic equipment survey 2010: preliminary results. *Community Eye Health Journal*. 23(73): 23-25.

Perry, R. N. (2009). Role modelling excellence in clinical nursing practice. *Nurse Education in Practice*. 9(1): 36-44.

Pinchot, S., Lewis, B. J., Weber, S. M., Rikkers, L. F., and Chen, H. (2008). Are surgical progeny more likely to pursue a surgical career? *Journal of Surgical Research*. 147(2): 253-259.

Potter, J. M. (1995). Characteristics of Alaskan family physicians as determinants of practice location. *Alaska Medicine*. 37(2): 49-52.

Public Servants Association of South Africa. (2014). Public Health and Social Development Sectoral Bargaining Council (PHSDSBC): Resolution 4 of 2009. Available from - <https://www.psa.co.za/phsd-sbc-0>. [Accessed: 9 September 2014].

Public Service Commission. (2014). Report on the Assessment of the Implementation of the Human Resource and Financial Management Delegations Frameworks. [Online]. Available from - http://www.psc.gov.za/documents/reports/2014/PSC_Delegations_Report.pdf. [Accessed: 6 September 2014].

Puertas, E. B., Arósquipa, C., and Gutiérrez, D. (2013). Factors that influence a career choice in primary care among medical students from high-, middle-, and low-income countries: a systematic review. *Pan American Journal of Public Health*. 34(5): 351-358.

Rabinowitz, H. K, Diamond, J. J, Hojat, M., and Hazelwood, C. E. (1999). Demographic, educational and economic factors and retention of physicians in rural Pennsylvania. *Journal of Rural Health*. 15: 212-218.

Reid, S. (2004). Monitoring the effect of the new rural allowance for health professionals. Health Systems Trust. [Online]. Available from - <http://www.hst.org.za>. [Accessed: 20 July 2010].

Reid, S. J., Couper, I. D., and Volmink, J. (2011). Educational factors that influence the urban-rural distribution of health professionals in South Africa: A case-control study. *South African Medical Journal*. 101(1): 29-33.

Rolfe, I. E., Pearson, S. A., o' Connell, D. L., and Dickinson, J. A. (1995). Finding solutions to the rural doctor shortage: the roles of selection versus undergraduate medical education at Newcastle. *Australian and New Zealand Journal of Medicine*. 25(5): 512-517.

Ross, A., and Reid, S. J. (2009). The retention of community service officers for an additional year at district hospitals in KwaZulu-Natal and the Eastern Cape and Limpopo provinces. *South African Family Practice*. 51(3): 249-253.

South African Broadcasting Corporation. (2014). KZN Health Department offers R200 million in bursaries. [Online] Available from - http://www.sabc.co.za/news/a/940bc38044bf7df28516fd3bf_e17c0b1/KZN-Health-Department-offers-R200-million-in-bursaries. [Accessed: 16 October 2014].

Schultheiss, D. E. P., Palma, T. V., Predragovich, K. S., and Glasscock, J. M. J. (2002). Relational influences on career paths: Siblings in context. *Journal of Counselling Psychology*. 49(3): 302-310.

Science Daily. (2010). Parents still major influence on child's decision to pursue science careers.[Online]. Available from - <http://www.sciencedaily.com/releases/2010/02/100220204814.htm>. [Accessed: 27 April 2014].

Shah, J., Manson, J., and Boyd, J. (2004). Recruitment in urology: a national survey in the UK. *Royal College of Surgeons of England*. 86(3): 186-189.

Shannon, C. K. (2006). A gender-based study of attitudes and practice characteristics of rural physicians in West Virginia. *West Virginia Medical Journal*. 102(6): 22-25.

Sherman, R. (2006). Leading a multigenerational nursing workforce: Issues, challenges and strategies. *OJIN: The Online Journal of Issues in Nursing*. [Online]. 11(2). Available from - http://gm6.nursingworld.org/MainMenuCategories/ANAMarketplace/ANAPeriodicals/OJIN/TableofContents/Volume112006/No2May06/tpc30_216074.html. [Accessed: 18 October 2012].

Shickle, D., and Hogg, R. (2012). What is ophthalmic public health? OT Continuing education and training. Available from - http://www.optometry.co.uk/uploads/exams/articles/cet_13_january_2012_shickleandhogg.pdf. [Accessed: 1 December 2014].

Singaravelu, H., White, L. J., and Bringaze, T. B. (2005). Factors influencing international students' career choice: A comparative study. *Journal of Career Development*. 32(1): 46-59.

Smith, J. D., White C., Roufeil L., Veitch C., Pont L., Patel B., Battye K., Luetsch K., and Mitchell C. (2013). A national study into the rural and remote pharmacist workforce. *Rural and Remote Health*. [Online] Available from - <http://www.rrh.org.au/articles/subviewaust.asp?ArticleID=2214>. [Accessed: 29 July 2014].

Snow, R. C., Asabir, K., Mutumba, M., Koomson, E., Gyan, K., Dzodzomenyo, M., Kruk, M., and Kwansah, J. (2011). Key factors leading to reduced recruitment and retention of health professionals in remote areas of Ghana: a qualitative study and proposed policy solutions. *Human Resources for Health*. [Online]. 9: 13. Available from - <http://www.human-resources-health.com/content/9/1/13>. [Accessed: 7th October 2014].

South African Government. (1997). White Paper for the Transformation of the Health System in South Africa. South Africa - Towards a National Health System. Government Gazette, [Online]. Available from - <http://www.gov.za/documents/index.php>. [Accessed: 5 July 2014].

Statistics South Africa. (2014a). Mid-year population estimates: 2014. South Africa. [Online]. Available from - <http://beta2.statssa.gov.za/publications/P0302/P03022014.pdf>. [Accessed: 13 September 2014].

Statistics South Africa. (2014b). Inflation [Online]. Available from - http://beta2.statssa.gov.za/?page_id=735&id=3. [Accessed: 21 November 2014].

Stevens, G. A., White, R. A., Flaxman, S. R., H. Price, J. B. Jonas, J. Keefe, Leasher, J., Naidoo, K., Pesudovs, K., Resnikoff, S. Taylor, H., and Bourne, R. R. A. (2013). Global prevalence of vision impairment and blindness magnitude and temporal trends, 1990-2010. *Ophthalmology*. 120(12): 2377-2384.

Strasser, R. (2001). Training for rural practice: lessons from Australia. *Canadian Family Physician*. 47: 2196-2198.

Talley, R. C. (1990). Graduate medical education and rural health care. *Academic Medicine*. 65(12): S22-S25.

Thammatacharee, N., Suphanchaimat, R., Wisaijohn, T., Limwattananon, S., and Putthasri, W. (2013). Attitudes toward working in rural areas of Thai medical, dental and pharmacy new graduates in 2012: a cross-sectional survey. *Human Resources for Health*. 11:53.

Tian, J., Atkinson, N. L., Portnoy, B., and Gold, R. S. (2007). A systematic review of evaluation in formal continuing medical education. *Journal of Continuing Education in the Health Professions*, 27(1): 16-27.

Tumbo, J. M., Couper, I. D. and Hugo, J. F. M. (2009). Rural-origin health science students at South African universities. *South African Medical Journal*. 99(1): 54-56.

United Nations. (1998). Department of Economic and Social Affairs. Principles and Recommendations for Population and Housing Censuses. [Online]. Available from - http://unstats.un.org/unsd/publication/seriesM/seriesm_67Rev2e.pdf. [Accessed: 2 July 2014].

University of KwaZulu-Natal. (2014). Discipline of Optometry. [Online] Available from - <http://optometry.ukzn.ac.za/Undergraduatecourses.aspx>. [Accessed: 20 October 2014].

Van den Berg, L., and De Villiers, M. R. (2003). CPD – The learning preferences of general practitioners. *South African Family Practice*. 45(3): 10-12.

Vision Aid Overseas. (2015). Where we work. [Online]. Available from - <http://www.visionaidoverseas.org/zambia>. [Accessed: 4 January 2015].

Wilkinson, D., Beilby, J., Thompson, D. J., Laven, G. A., Chamberlain, N. L., and Laurence, C. O. (2000). Associations between rural background and where South Australian general practitioners work. *Medical Journal of Australia*. 173: 137-140.

Willis-Shattuck, M., Bidwell, P., Thomas, S., Wyness, L., Blaauw, D., and Ditlopo, P. (2008). Motivation and retention of health workers in developing countries: a systematic review. *BMC Health Services Research*. [Online]. Available from - <http://www.biomedcentral.com/1472-6963/8/247>. [Accessed: 6 April 2010].

Wilson, N. W., Couper, I. D., de Vries, E., Reid, S., Fish, T., and Marais, B. J. (2009). A critical review of interventions to redress the inequitable distribution of healthcare professionals to rural and remote areas. *Rural and Remote Health*. [Online]. Available from - <http://www.rrh.org.au>. [Accessed: 18 August 2012].

Winn, C. S., Chisholm B. A., and Hummelbrunner, J. A. (2014). Factors affecting recruitment and retention of rehabilitation professionals in Northern Ontario, Canada: a cross-sectional study. *Rural and Remote Health*. [Online]. Available from - <http://www.rrh.org.au>. [Accessed: 1 August 2014].

World Council of Optometry. (2014a). Who is an optometrist? [Online]. Available from <http://www.worldoptometry.org/en/about-wco/who-is-an-optometrist/index.cfm>. [Accessed: 3 April 2014].

World Council of Optometry. (2014b). Policy Development. [Online]. Available from -[http:// www.worldoptometry.org/en/about-wco/what-we-do/policy_development.cfm](http://www.worldoptometry.org/en/about-wco/what-we-do/policy_development.cfm). [Accessed: 3 April 2014].

World Council of Optometry. (2014c). A Global Competency-Based Model of Scope of Practice in Optometry Policy Development. [Online]. Available from - http://www.worldoptometry.org/filemanageroot/site_assets/governance_documents/global_competencies_model.pdf. [Accessed: 3 April 2014].

World Health Organization (WHO). (2000). The World Health Report. Health Systems: Improving Performance. [Online]. Available from - http://www.who.int/whr/2000/en/whr00_en.pdf. [Accessed: 1 June 2013].

World Health Organization (WHO). (2004). International migration of health personnel: A challenge for health systems in developing countries. [Online]. Available from - <http://www.who.int/whr/2000/en>. [Accessed: 1 May 2010].

World Health Organization (WHO). (2006). The World Health Report 2006: Working together for Health. [Online]. Available from - <http://www.who.int/whr/2006/en>. [Accessed: 1 May 2010].

World Health Organization (WHO). (2007). Global Initiative for the Elimination of Avoidable Blindness: Action plan 2006-2011. [Online]. Available from - http://www.who.int/blindness/Vision2020_report.pdf [Accessed: 13 October 2014].

World Health Organization (WHO). (2008a). Department of Human Resources for Health. Issue 2. Spotlight on Statistics: Gender and health workforce statistics. [Online]. Available from - <http://www.who.int/hrh/statistics/spotlight/en/>. [Accessed: 1 October 2014].

World Health Organization (WHO). (2008b). The Kampala declaration and agenda for global action. [Online]. Available from: http://www.who.int/workforcealliance/knowledge/resources/kampala_declaration/en/. [Accessed: 22 August 2013].

World Health Organization (WHO). (2010a). WHO Global Code of Practice on the International Recruitment of Health Personnel. The 63rd World Health Assembly. [Online]. Available from - http://www.who.int/hrh/migration/code/full_text/en/. [Accessed: 11 June 2013].

World Health Organization (WHO). (2010b). Increasing access to health workers in remote and rural areas through improved retention. [Online]. Available from - <http://www.who.int/hrh/retention/guidelines/en>. [Accessed: 28 April 2014].

World Health Organization (WHO). (2011). Global Health Workforce Alliance: Reviewing progress, renewing commitment. Progress report on the Kampala declaration and agenda for global action. [Online]. Available from - http://www.who.int/workforcealliance/knowledge/resources/KDAGA_progressreport_2011. [Accessed: 7 July 2013].

World Health Organization (WHO). (2012). Gender, women, and health. [Online]. Available from - <http://www.who.int/gender/whatisgender/en/>. [Accessed 22 August 2014].

World Health Organization (WHO). (2013). What is a refractive error? [Online]. Available from - <http://www.who.int/features/qa/45/en/>. [Accessed 3 March 2014].

World Health Organization (WHO). (2014). Universal eye health: a global action plan 2014–2019. [Online]. Available from - <http://www.who.int/blindness/actionplan/en/> [Accessed 3 June 2014].

Zurn, P., Dal Poz, M. R., Stilwell, B., and Adams, O. (2004). Imbalance in the health workforce. *Human Resources for Health*. Available from - <http://www.biomedcentral.com/content/pdf/1478-4491-2-13.pdf>. [Accessed 2 August 2013].

CHAPTER 7: APPENDICES

Appendix A: Optometrist Information and Consent Form

INFORMATION DOCUMENT

Study title: Recruitment and retention of Public Sector Optometrists in KwaZulu-Natal (KZN)

Dear Colleague,

Introduction:

I, Prasad Ramson, am doing research involving Public Sector Optometrists in KZN

In this study I want to learn why Optometrists, presently in the public sector, choose to work in the public sector and what conditions would make them stay on longer.

Invitation to participate: I therefore, humbly request that you participate in this research study.

What is involved in the study Optometrists currently working in the public sector will be contacted. They will be given questionnaires to complete and will be required to return them via post, email or fax. The questionnaires have simple check-box options and a few short questions. It should not take you more than 10 minutes to complete.

Potential Benefits This study will provide a picture of what work factors should be strengthened or improved by Government to enable public sector Optometrists to have a satisfying career of public sector service. It will also attempt to give Government Human Resource planners a better idea of what interventions need to be put into place to attract future Optometrists into the public sector.

Your participation is voluntary and your refusal to participate will not disadvantage you at any time. You may also leave the study at any time if you so desire.

Confidentiality: While every effort will be made to keep personal information confidential, some information may be disclosed if required by law. I trust that this will not deter your participation in any way.

If you would like more information or have any concerns about the study, please contact:

Mr. Prasidh Ramson

Cell: +27 839 83 83 64

prasidhr@gmail.com

You may contact the Administrator or the Chair of the University of KwaZulu-Natal's Biomedical Research Ethics Committee (BREC) to report complaints or problems.

Contact details of BREC Administrator or Chair – for reporting of complaints/ problems:

Biomedical Research Ethics, Research Office, UKZN, Private Bag X54001, Durban 4000

Telephone: +27 (0) 31 260 4769 / 260 1074

Fax: +27 (0) 31 260 2384

Administrator: Ms P Ngwenya Email: ngwenyap@ukzn.ac.za

Chair: Email: Prof D R Wassenaar c/o ngwenyap@ukzn.ac.za

CONSENT DOCUMENT

Name of study: Recruitment and retention of Public Sector Optometrists in South Africa

Consent to Participate in Research

In a 2006 study, it was found that only 74 Optometrists work in the Public Sector in South Africa (Lecouna, 2007). With South Africa's population of 50 million, and 80% reliant on some form of public health care; this translates to a large number of people, using an already overcrowded public health system. Without compulsory community service, not all graduating Optometrists enter the public sector with very few opting to voluntarily choose this mode of practice. Optometrists that are already in the public system face challenges in delivering a service and staying motivated to do so.

The aim of this study is to investigate what conditions would attract new Optometrists to the public sector. It would also attempt to define what job factors would keep presently working Optometrists within the same sector

You have been asked to participate in a research study where you will complete a questionnaire and return it via post, email or fax. The questionnaire should not take you more than 10 minutes to complete. It has check-box options and space to write down your thoughts,

You may contact Prasad Ramson on 0839 83 83 64 at any time if you have questions about the research or if you are injured as a result of the research. You may contact the Biomedical Research Ethics Office on 031-260 4769 or 260 1074 if you have questions about your rights as a research participant.

Your participation in this research is voluntary, and you will not be penalized or lose benefits if you refuse to participate or decide to stop at any time.

If you agree to participate, you will be given a signed copy of this document and the participant information sheet which is a written summary of the research.

The research study, including the above information, has been described to me. I understand what my involvement in the study means and I voluntarily agree to participate. I have been given an opportunity to ask any questions that I might have about participation in the study.

Signature of Participant

Date

Appendix B: Optometrist Data Collection Tool

Dear Public Sector Optometrist,

INSTRUCTIONS:

Please complete the following questionnaire honestly and to the best of your knowledge. Please attempt **all** questions.

Some questions will require you to place a **cross (X)** in the box of your choice; others will ask you to write down your thoughts. You may use the reverse side of this page if you need more space.

Thank you for your time and input,
Prasidh Ramson

A: DEMOGRAPHIC DETAILS										
1.Name/Surname [Optional]										
2.Gender	M		F		3. Age					
4.Name of Institution										
5.Title at Institution										
6. Province	EC	GP	KZN	LP	NC	NW	FS	WC	MP	
7.Marital status	Single			Married			Divorced			
8.Population Group	African		Coloured		Indian		White		Other	
9.Religion										
10. Which of the following best describes where you grew up?	Rural	Urban	Semi-Rural		Semi-Urban					
11.In your social circle, are any of the following healthcare professionals? (You may choose more than one)	<input type="checkbox"/> Mom <input type="checkbox"/> Dad <input type="checkbox"/> Sister <input type="checkbox"/> Brother <input type="checkbox"/> Uncle <input type="checkbox"/> Aunt <input type="checkbox"/> Cousins <input type="checkbox"/> Friends <input type="checkbox"/> None of the above			12. To what extent do you think their career choice has influenced yours?			<input type="checkbox"/> None at all <input type="checkbox"/> Somewhat <input type="checkbox"/> Significantly			
B: EDUCATION										
1.At which University did you obtain your Optometry degree and when did you obtain it?	<input type="checkbox"/> University of KwaZulu-Natal <input type="checkbox"/> University of Johannesburg <input type="checkbox"/> University of the Free State <input type="checkbox"/> Rand Afrikaans University <input type="checkbox"/> University of Limpopo <input type="checkbox"/> North West University <input type="checkbox"/> Other – please specify below _____					<u>1.1 Year of completion:</u> _____				
2. How old were you when you completed your Optometry degree?										
3. Do you think that your Undergraduate training; has prepared you for work in the public sector?	Yes					No				
4. If No to the above, what do										

<p><i>you think Universities should do to prepare Optoms for public sector work?</i> <i>(You may use the reverse side of this page if you need more space)</i></p>			
<p>5. Are you registered for any other degree(s)/courses currently? If yes, please list</p>			
<p>6. Why have you chosen to do this degree/course (in question 5)?</p>			
C:PREVIOUS EMPLOYMENT			
<p>1. Is this your first job after graduating?</p>	Yes		No
<p>2. If No, where did you work previously and for how long?</p>	Previous employment	How long? (Years)	How long?(Months)
	Private Practice (full-time)		
	Private Practice (locum)		
	Another Hospital		
	University		
	Not employed		
	Other-please specify		
<p>3. Why did you choose to work in the Public Sector? <i>(You may choose more than one option; list continues on next page...)</i></p>	<input type="checkbox"/> Better salary. <input type="checkbox"/> Better career path <input type="checkbox"/> Wanted to make a difference <input type="checkbox"/> Job benefits <input type="checkbox"/> Previous exposure to public sector work in undergraduate studies <input type="checkbox"/> Less responsibility than private sector <input type="checkbox"/> Bursary/loan obligation <input type="checkbox"/> More responsibility than private sector <input type="checkbox"/> Good working hours <input type="checkbox"/> Social recognition <input type="checkbox"/> Could not get a job in the private sector <input type="checkbox"/> Free weekends <input type="checkbox"/> Bored with private practice <input type="checkbox"/> Curiosity <input type="checkbox"/> Self-realization <input type="checkbox"/> Wanted to learn more <input type="checkbox"/> Family tradition <input type="checkbox"/> Could not afford to open your own practice <input type="checkbox"/> Job security <input type="checkbox"/> Other – please specify <hr/> <hr/> <hr/>		

	Managers/Supervisors.....	_____
	<input type="checkbox"/> Other , please list and rank	
	1. _____	_____
	2. _____	_____
	3. _____	_____
4. What do you think should be the gross minimum salary for Public Sector Optometrists, given the present economic climate?	R _____	
E: PUBLIC HEALTH		
1. What do you understand by the term District Health System ?		
2. Have you heard of the Vision 2020 campaign?	Yes	No
3. If Yes, briefly describe what you know about this campaign?		
F: FUTURE PLANS		
1. Do you see yourself at your current institution in the next 3-5 years?	Yes	No
2. If No, please elaborate why not? (You may use the back of this page)		
3. If you have to leave the public sector, which of the following would you consider doing? (You may choose more than one option)	<input type="checkbox"/> Private Practice (full-time) <input type="checkbox"/> Private Practice (Locum) <input type="checkbox"/> Non-Profit Sector <input type="checkbox"/> I would not practice Optometry <input type="checkbox"/> Study further - in a non Optometry field <input type="checkbox"/> University/Academia <input type="checkbox"/> Study further – Post graduate Optometry <input type="checkbox"/> Migrate... To which country? [Please fill below] _____ _____ <input type="checkbox"/> Other _____ _____	
4. Do you think compulsory community service for future Optometrists' is a good idea? (You may use the back of this page)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Maybe Please elaborate why, _____ _____ _____ _____	

[illegible]

1. **Fax** back to Prasidh (086 244 1075 or 031 2023858)
2. **Scan and email** to Prasidh (prasidhr@gmail.com)

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Appendix C: Optometrist Interview Tool

Recruitment and Retention of Public Sector Optometrists in KZN

Date of Interview: _____ Time start: _____ Time end: _____

Name of Optometrist: _____

1. Recruitment

- 1.1 Career choice: Why did you choose to study Optometry? Was there one particular influential experience?
- 1.2 UKZN: What were some of the reasons to choose UKZN for your studies?
- 1.3 Undergraduate study: Do you think Undergraduate training prepares one for public service? How do you think UKZN prepared you?

2. Retention (Financial)

- 2.1 Are you aware of Occupational Specific Dispensation (OSD)? Has the OSD helped you in your personal financial commitments?
- 2.2 What do you think of the proposed Rural Allowance?
- 2.3 What other financial incentives will assist you in the public sector?
- 2.4 How did you arrive at your ideal gross minimum salary for Optoms?

3.Retention (Non-Financial)

- 3.1 Please can you say a little more about the interventions to make you stay on longer in the public sector...
 - i. Equipment and infrastructure. What is the present situation and how do you think it can be improved?
 - ii. Recognition. Have there been activities to recognise you and/or the eye clinic? What are some of these activities?
 - iii. CPD. How do you obtain CPD points annually? What support do you get from hospital management to achieve these?
 - iv. Management relations/relations with District Co-ordinator. How would you describe your interaction with hospital and district management? How do you think it can be improved?
 - v. Career/performance management. Describe the process for reviews of your performance – how frequently, how does it occur, who is involved, what kind of feedback do you get?
 - vi. Community service for future Optometrists. What do you think of this proposed idea?

4. Future plans

3.2 If you plan to stay on...what are some of the enabling/positive factors that your Hospital/District is doing to make you stay on?

3.3 If you are not planning to stay on...what else can be done to improve the current situation?

5. Do you have any additional thoughts, suggestions and recommendations?

6. Do you have any questions for me?

Appendix D: District Co-ordinator Information and Consent Form

INFORMATION DOCUMENT

Study title: Recruitment and retention of Public Sector Optometrists in KwaZulu-Natal (KZN)

Dear District Co-ordinator

Introduction:

I, Prasad Ramson, am doing research involving Public Sector Optometrists in KZN.

In this study I want to learn about why Optometrists choose to work in the public sector and what conditions would make them stay on longer. I would also like to find out from District Health Co-ordinators about efforts to recruit/retain them in their district.

Invitation to participate: I therefore humbly request that you participate in this research study.

What is involved in the study District Co-ordinators from all 11 districts will be contacted. They will be given questionnaires to complete and will be required to return them via post, email or fax. The questionnaires have check-box options and a few short questions. It should not take you more than 15 minutes to complete.

Potential Benefits This study will provide a picture of what work factors should be strengthened or improved by Health Departments to enable public sector Optometrists to have a satisfying and productive career of public sector service.

It will also attempt to give Government Human Resource planners a better idea of what interventions need to be put into place to attract future Optometrists into the public sector.

Your participation is voluntary and your refusal to participate will not disadvantage you at any time. You may also leave the study at any time if you so desire.

Confidentiality: While every effort will be made to keep personal information confidential, some information may be disclosed if required by law. I trust that this will not deter your participation in any way.

If you would like more information or have any concerns about the study, please contact:

Mr. Prasidh Ramson

Cell: +27 839 83 83 64

prasadhr@gmail.com

You may contact the Administrator or the Chair of the University of KwaZulu-Natal's Biomedical Research Ethics Committee (BREC) to report complaints or problems.

Contact details of BREC Administrator or Chair – for reporting of complaints/ problems:

Biomedical Research Ethics, Research Office, UKZN, Private Bag X54001, Durban 4000

Telephone: +27 (0) 31 260 4769 / 260 1074

Fax: +27 (0) 31 260 2384

Administrator: Ms P Ngwenya Email: ngwenyap@ukzn.ac.za

Chair: Email: Prof D R Wassenaar c/o ngwenyap@ukzn.ac.za

CONSENT DOCUMENT

[Please read and sign]

Name of study: Recruitment and retention of Public Sector Optometrists in KwaZulu-Natal (KZN)

Name of Principal Investigator: Mr. Prasidh Ramson

Consent to Participate in Research

Dear District Co-ordinator,

In a 2007 study, it was found that only 74 Optometrists work in the Public Sector in South Africa¹. This large proportion of the public places an additional burden on already overcrowded public health system.

Without compulsory community service, not all graduating Optometrists enter the public sector with very few opting to voluntarily choose this mode of practice. Optometrists that are already in the public system face challenges in delivering a service and staying motivated to do so. The Department of Health despite its best efforts, experiences challenges in recruiting and retaining Optometrists.

The aim of this study is to investigate what conditions would attract new Optometrists to the public sector. It would also attempt to define what job factors would keep presently working Optometrists within the same sector. This study will also look at the Department of Health's perceptions of Public Sector Optometrists and attempts to recruit/retain them.

You have been asked to participate in a research study where you will complete a questionnaire and return it via post, email or fax. The questionnaire should not take you more than 15 minutes to complete. It has check-box options and space to write down your thoughts,

You may contact **Prasidh Ramson** at 0839 83 83 64 at any time if you have questions about the research or if you are injured as a result of the research.

You may contact the **Biomedical Research Ethics Office** on **031-260 4769 or 260 1074** if you have questions about your rights as a research participant.

Your participation in this research is voluntary, and you will not be penalized or lose benefits if you refuse to participate or decide to stop at any time.

If you agree to participate, you will be given a signed copy of this document and the participant information sheet which is a written summary of the research.

The research study, including the above information, has been described to me. I understand what my involvement in the study means and I voluntarily agree to participate. I have been given an opportunity to ask any questions that I might have about participation in the study.

Signature of Participant

Date

1. Lecouna K., A Situational Analysis of the Eye Care Programmes in the 53 Health Districts in South Africa in 2006. 2007.

Appendix E: District Co-ordinator Data Collection Tool

Dear District Co-ordinator

Please complete the following questionnaire to the best of your knowledge. Some questions will require you to place a cross (X) in the box of your choice; others will ask you to write down your thoughts. You may use the reverse side of this page if you need more space.

*Thank you for your time and input,
Prasidh Ramson*

A: DEMOGRAPHIC DETAILS										
1.Name/Surname [Optional]										
2.Gender	M			F			3. Age			
4.Province	EC	GP	KZN	LP	NC	NW	FS	WC	MP	
5. What is your present title within the Department of Health?										
6 Number of years in this post	1-3		4-6		7-9		>10			
B: EDUCATION										
1.Describe your education and/or training background	<input type="checkbox"/> Social sciences <input type="checkbox"/> Eye care <input type="checkbox"/> Health care <input type="checkbox"/> Business/Management <input type="checkbox"/> Other, please specify <hr/> <hr/> <hr/>									
2. Do you think that Optometrists are adequately prepared for work in the public sector upon graduation?	Yes					No				
2.1 If Yes , please elaborate.										
2.2 If No , what do you think Universities should do to prepare Optoms for public sector work? (You may use the reverse side of this page if you need more space)										

C:PUBLIC SECTOR OPTOMETRISTS			
1. Why did you think Optometrists choose to work in the Public Sector? (You may choose more than one option)	<input type="checkbox"/> Better salary <input type="checkbox"/> Better career path <input type="checkbox"/> Wanted to make a difference <input type="checkbox"/> Job benefits <input type="checkbox"/> Previous exposure to public sector work in undergraduate studies <input type="checkbox"/> Less responsibility than private sector <input type="checkbox"/> Bursary/loan obligation <input type="checkbox"/> More responsibility than private sector <input type="checkbox"/> Good working hours <input type="checkbox"/> Social recognition <input type="checkbox"/> Could not get a job in the private sector <input type="checkbox"/> Free weekends <input type="checkbox"/> Bored with private practice <input type="checkbox"/> Curiosity <input type="checkbox"/> Self-realization <input type="checkbox"/> Wanted to learn more <input type="checkbox"/> Family tradition <input type="checkbox"/> Could not afford to open their own practice <input type="checkbox"/> Job security <input type="checkbox"/> Other – please specify <hr/> <hr/> <hr/>		
2. How long, on average, do you retain Optometrists in the public sector in your District?	_____ years _____ months		
3. Do you recruit Optoms?	Yes		No
3.1 If Yes , how did you recruit Optoms into the Public Sector? (You may choose more than one option)	<input type="checkbox"/> Advertise in the newspaper <input type="checkbox"/> Elicit assistance from NGO <input type="checkbox"/> Radio adverts <input type="checkbox"/> Advertise on Department of Health website <input type="checkbox"/> Visit Universities <input type="checkbox"/> Other – please specify <hr/> <hr/> <hr/>		
4. Do you have difficulties in recruiting Optoms?	Yes		No
4.1 If Yes , what are the barriers to recruitment? (You may choose more than one option)	<input type="checkbox"/> Salary <input type="checkbox"/> Lack career path <input type="checkbox"/> Little Job satisfaction		

<p>than one option)</p>	<input type="checkbox"/> Lack of Job benefits <input type="checkbox"/> Inadequate supervision <input type="checkbox"/> Minimal Job security <input type="checkbox"/> Other – please specify <hr/> <hr/> <hr/>	
<p>5. What are the enabling factors for recruitment of Optoms into the Public Sector? (You may choose more than one option)</p>	<input type="checkbox"/> Better salary <input type="checkbox"/> Better career path <input type="checkbox"/> Opportunity to make a difference <input type="checkbox"/> Job benefits <input type="checkbox"/> Bursary/loan <input type="checkbox"/> Opportunity to learn more <input type="checkbox"/> Job security <input type="checkbox"/> Less responsibility than private sector <input type="checkbox"/> More responsibility than private sector <input type="checkbox"/> Good working hours <input type="checkbox"/> Free weekends <input type="checkbox"/> Other – please specify <hr/> <hr/> <hr/>	
<p>6. In your experience, does the urban or rural background of the student influence their decision to work in the public sector?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No Please elaborate <hr/> <hr/> <hr/>	
<p>7. What interventions do you think the Department of Health should put into place to retain Optoms in the in the Public Sector?</p> <p><u>Rank them in order:</u> 1- definitely needed 2- generally needed 3- uncertain 4- generally not needed 5- definitely not needed e.g. If you feel that Reducing the workload is definitely needed to keep Optometrists working in the Public Sector write 1 next</p>	<input type="checkbox"/> None..... <input type="checkbox"/> Improving the physical infrastructure (clinic set-up; equipment etc.)..... <input type="checkbox"/> Strengthen management structures/relations..... <input type="checkbox"/> Improving working relations with other colleagues/departments..... <input type="checkbox"/> Reducing the workload..... <input type="checkbox"/> Mentoring by other Optometrists/Ophthalmologists	<p style="text-align: center;">Ranking</p> <hr/> <hr/> <hr/> <hr/> <hr/>

<i>retention</i> of Optometrists	3. _____
5. List any planned strategies the DoH has for <i>recruitment</i> of Optometrists?	1. _____ 2. _____ 3. _____
6. Do you think compulsory community service for future Optometrist's is a good idea?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Maybe Please elaborate why, _____ _____ _____ _____ _____

General - Any other comments/observations/suggestions:

Thank you for taking time to answer this questionnaire!

Appendix F: District Co-ordinator Interview Tool

Recruitment and Retention of Public Sector Optometrists in KZN

Date of Interview: _____ Time start: _____ Time end: _____

Name of District and Co-ordinator: _____

1. Background

1.1 Please say a little about your professional background and how you came to be a district co-ordinator?

1.2 What are your roles and responsibility regarding the eye programme in your district?

2. Recruitment

2.1 What is the process for identifying the need, motivating and budgeting for Optometrists in the district? How do you engage with this process?

2.2 Who's responsible for implementing any financial benefits to Optoms:

a. Occupational Specific Dispensation?

b. Rural Allowance?

2.3 What is the process for physically advertising an Optometry post? How does your office engage with this process?

3. Retention

3.1 Please describe your role in the following interventions. What is the interaction between you and the Optometrist at the Hospital, in terms of:

a. Requesting new equipment in the clinic. Does your office get involved in the ordering and procurement process?

b. Career pathway management. Do you have any involvement or is that Hospital based in an Optometrist moving up different grades and salary scales.

c. Recognition of Optoms. Does your office get involved in any way in recognising Optometrists in newsletters, award ceremonies, etc.

d. CPD activities for Optometrists. How does your office support the hospital to support CPD activities?

e. What is your opinion on relations between Hospital Management, Optometrists and your office? How do you think they can be enhanced? What improvement between Hospital and District to work better?

4. Do you have any additional thoughts, suggestions and recommendations?

5. Do you have any questions for me?