RESEARCH REPORT

STRATEGIES TO IMPROVE THE RETENTION OF HEALTH CARE WORKERS IN RURAL CLINICS OF THE CAPRICORN DISTRICT, LIMPOPO PROVINCE

By

Mola K.J.

Submitted in fulfilment of the requirements of the

Degree: Masters of Nursing Science

in the

Faculty of Health Sciences

School of Health Care Sciences

at the

University of Limpopo

Supervisor: Prof RN Malema

Co-Supervisor: Prof TM Mothiba

2018

DECLARATION

I, Mola Khomotso Jeanette, declare that **STRATEGIES TO IMPROVE THE RETENTION OF HEALTH CARE WORKERS IN RURAL AREAS OF THE CAPRICORN DISTRICT, LIMPOPO PROVINCE** is my own work and that all sources I have used or quoted have been indicated and acknowledged by means of complete references and that this work has not been submitted before for any other degree at any institution.

……. **……..**

Signature **Date**

Abstract

Introduction and background

The shortage of human resources in rural areas remains a crisis, especially in subSaharan Africa, affecting rural primary health centres. The purpose of this study was to identify and describe factors influencing the retention of health care workers in rural clinics, in order to develop strategies to improve retention in rural clinics.

Methodology

A quantitative research method and descriptive design was used in this study. The population was professional nurses and operational managers in rural clinics. Simple random sampling was used to select the clinics, the professional nurses and operational managers. The sample size were 210 professional nurses and operational managers. Only 170 professional nurses and operational managers participated in the study. Data were collected using a questionnaire, and all ethical principles were adhered to. The data was analysed using SPSS version 22.0.

Results

The study revealed that there are complex interconnecting factors that affect retention. It was further revealed that age is the core factor affecting retention (P= 0.001) with 19 (100%) of those aged < 30 years intending to leave rural practice. Furthermore, more than half of the respondents 118 (87.06%) were dissatisfied with the salary they earned. Only 1 (0.6%) of the respondents had a masters' degree.

Conclusion

It is therefore concluded that both financial and non-financial incentives such as education, improving working conditions and relationship with colleagues needs to be incorporated in order to improve nurse retention.

Key words: Retention, migration, rural health care workers, job satisfaction

Acknowledgements

I am grateful to God for giving me the strength and for instilling me with wisdom which helped me in writing my project, I give Him thanks and praise.

I would like to express a special gratitude:

To my supervisor Prof RN Malema for her support, thought-provoking suggestions and encouragement which helped me complete this study. Who despite her busy schedule invested so much time in this project. Her patience towards me, helped me in coordinating the project and made research more fascinating.

To my co-supervisor Prof TM Mothiba for her constant motivation, mentorship and support throughout the study, and for also believing in me.

To the University for giving me the opportunity to conduct the study.

To all the professional nurses and managers who took part in this study and making this project a success.

To the Limpopo Department of Health and all nursing managers for giving me the permission to conduct this study.

Furthermore, I am grateful to my parents Sarah and Samuel Mola and my siblings Itumeleng, Lebogang and Kgaugelo for their continuous moral and emotional support and encouragement throughout this journey.

Special thanks to my granny, Mariam Mantsho for being there for me, and encouraging me to work hard and follow my dreams.

Deepest appreciation to my friends and colleagues for their understanding and standing by me throughout this journey.

Table of contents

Figures

Tables

Definition of concepts

Strategies - A plan of action to achieve a long-term or overall aim (Oxford, 2014). In this study, strategies refers to plans of action to improve the retention of health care workers in rural clinics of the Capricorn District, Limpopo Province.

Improve - To make or become better (Oxford, 2010). In this study, it refers to making better strategies to retain health care workers in rural clinics of the Capricorn District, Limpopo Province.

Retention - The action of absorbing and continuing to hold a substance (Oxford, 2010). In this study, it means preventing health care workers from leaving their employment in the rural clinics.

Healthcare workers - as defined by WHO (2010) are people who are engaged in actions that mainly intend to enhance health. In this study, healthcare workers refers to professionals such as nurses/midwives and supervisors in clinics.

Rural – Sparsely populated, large geographical area with limited infrastructure and access to resources (WHO, 2010). In this study, rural refers to the Aganang, LepelleNkupi, and Molemole municipalities of the Capricorn District where the professional nurses work and have limited resources to provide services.

Clinic - A place where outpatients are given medical treatment or advice, especially of a specialist nature (Oxford, 2010). In this study, it refers to where health care workers render primary health care services to communities.

Abbreviations

HCW –Health Care Workers

IMCI – Integrated Management of Childhood Illness

NIMART – Nurse Initiated Management of Antiretroviral Treatment

PMTCT – Prevention of Mother-to-Child Transmission

SA – South Africa

SANC – South African Nursing Council

SPSS – Statistical Package for Social Sciences

WHO – World Health Organization

Chapter 1
Overview of the study

1.1 Introduction and background

Human resources are critical in ensuring the delivery of quality health care services to the communities (International Organisation of Migration, 2006). Inability to retain health care workers in rural areas leads to staff shortages, and thus jeopardises the health of the communities. The International Organisation of Migration (2006) reported that there is a global shortage of health care workers, caused by the migration of these health care workers from rural to urban areas.

Wurie, Mohamed and Wiiter (2016) states that the inability to retain health care workers in rural health facilities leads to staff shortages. According to Buchan and Aiken (2010), nursing shortages are due to the unwillingness to work under certain conditions and cannot be quantified; hence, it becomes challenging when dealing with it.

Various strategies have been implemented in order to reduce rural-urban migration of health care workers. In Tonga, Connell and Brown (2004) found that nurses were rotated more regularly between hospitals, departments, rural and urban clinics than their counterparts in other Pacific countries. Seemingly, this rotation of nurses prevented burnout. It also increased staff development and encouraged sharing of skills amongst health care workers (Connell & Brown, 2004). However, Minore, Boone, Katt, Kinch and Birch (2005) argue that, clients may discharge themselves from care when health care providers are continually changing and may be reluctant to seek medical care, resulting in an exacerbation of their condition.

The Ministry of Health (2006) in British Columbia also created a variety of rural nursing retention strategies to address the problem of migration of health care workers. Developing the health care professionals and making nursing education more accessible was one of the major focus for the Ministry's rural nursing retention strategies (Ministry of Health of British Columbia, 2006). The Ministry of Bangladesh has also dedicated funding to rural nursing research and has provided research

conference opportunities for nurses in rural communities (Ministry of Health of British Columbia, 2006).

Over the years, the shortage of human resources in rural areas also remained a crisis, especially in Sub-Saharan Africa, affecting rural primary health centres (Bardad, 2017). This shortage affects access to good health care services for many developing countries in Africa such as Ghana and Kenya (Robert, 2013). Therefore, the government of Ghana and Kenya through the Ministry of Health implemented a number of strategies to ensure equitable distribution of health sector human resources.

The strategies for retaining staff included payment of a rural allowance of up to 30% of the monthly salary to health staff who accept posting to rural areas, increasing of salaries, providing them with opportunities to engage in private practice, offering post basic education courses for clinical staff, and paying of vehicle allowances (Robert, 2013; Ndetei, Ongecha, Mutiso, Kuria, Khasakhala & Kenyakenya, 2008). However, these interventions have been applied for over ten years but have not resolved the issue of migration, raising concerns regarding the effectiveness of the strategies implemented (Robert, 2013).

South Africa implemented a policy after the apartheid era in 1994 to ensure equitable access of health services to everyone by introducing the primary health care approach (Rispel, 2016). However, South Africa is facing a challenge in the provision of quality nursing care, caused by a shortage of nurses that are unequally distributed between rural and urban areas (Rispel, 2015; Bagraim, 2013).

Strategies employed in South Africa to improve retention include (Rural Health Advocacy Project, 2009, Lehman, 2008):

- The introduction of scarce and rural allowance;
- The initiation of the midlevel clinical associate programme;
- The introduction of Occupational Specific Dispensation which came into effect in 2008 and restructured the wages for professional nurses, and; The upgrading of health infrastructure in the country.

1.2 Problem statement

A report was published in 2011 revealing figures for registered nurse shortages in South Africa, indicating a 60% shortage in the Limpopo Province (Health Systems Trust, 2011). According to Aiken (2012), Limpopo is regarded as a rural province and still has an average nurse-patient ratio of 1:700 clients. This ration exceeds the World Health Organization's absolute minimum nurse to patient standard ratio of 1:50 (WHO, 2013).

The Capricorn District of the Limpopo Province has a population density of 59.2 people per km^2, which falls within the poorest district. The district in 2015/2016 had the worst percentage of fixed PHC facilities, of 5%, in the country and staffing levels that did not meet the country's standards (Massyn, Peer, English, Padarath, Barron & Day, 2016). Subsequently, it was observed by the researcher that the clinics, due to a shortage of nurses, are faced with overflow of patients daily, accompanied by long waiting queues. Furthermore, transmitted diseases, such as HIV and TB, are treated at the primary level together with more chronically ill patients, making it difficult for these rural public clinics to meet all the community's health needs (Maillacheruvu & McDuff, 2014).

It was thus of interest to the researcher to identify the factors affecting the retention of nurses in rural clinics and to further develop appropriate strategies to improve their retention from study results and literature.

1.3 Preliminary literature review

1.3.1 Factors affecting retention versus job satisfaction

Health care managers acknowledge the link between retention and job satisfaction (Murrow & Nowak, 2005). While there is an overlap between the various factors affecting retention in rural clinics, retention is based on the working and living experiences of the employee in the rural clinics. Barriers to retention are mainly due to job dissatisfaction, which induces demotivation and absenteeism (Van Dormael, Dugas, Kone, Coulibaly, Sy, Marchal & Desplas, 2008). Van Dormael et al. (2008)

define job satisfaction as the willingness to work in a rural area for an extended period, and is mostly influenced by living conditions.

Choi, Cheung, and Pang (2012) conducted a cross-sectional survey, involving 1271 registered nurses, on the attributes of nursing work environments as a predictor of registered nurses' job satisfaction and intention to leave. The survey revealed that working conditions such as relationships with co-workers, professionalism and lack of resources, caused job dissatisfaction and therefore lead to migration from rural to urban areas (Choi, Cheung & Pang, 2012). Additionally, a systemic literature review of published studies on factors impacting healthcare professionals' recruitment and retention in rural and remote areas found that, rural origin, career development, family ties and pay affects retention (Mbemba, Gagbon & Babrant, 2016).

1.3.2 Initiative by the World Health Organization regarding retention

In recent years, there has been increased interest from both researchers and policymakers to identify and implement effective solutions to address the shortages of health workers in remote and rural areas (WHO, 2010). In response to this increased interest and perceived need, the World Health Organization launched a programme of action called "Increasing access to health workers in remote and rural areas through improved retention" (WHO, 2010). The programme aims to expand the knowledge base in this domain and to provide evidence-based global recommendations to address the problem of retention, while at the same time provide support to countries that need to address this problem (WHO, 2010).

1.3.3 Shortage of nurses globally

Approximately one half of the world's population lives in rural areas; however, there is a shortage of well-trained healthcare workers in rural areas which are serviced by only

38% of the total nursing workforce and by less than 25% of the total physicians' workforce (WHO, 2010). This indicates that there is a maldistribution of health care workers to a very large population that seriously needs health care services.

According to Dolea, Stormont and Braichet (2010), these shortages of healthcare workers is caused by migration from rural to urban areas, thus leaving rural areas understaffed resulting in burnout for the remaining staff.

There are inadequate health care systems in Africa, with sub-Saharan Africa facing the challenge of health professionals migrating from rural to urban areas for greener pastures (WHO, 2010). In Africa, there are 57 countries, including South Africa, with a critical shortage of healthcare workers. A deficit of 2.4 million doctors and nurses, especially in rural areas, has been reported (Henderson & Tulloch, 2008).

1.4 Theoretical framework

Herzberg's theory for motivation at the workplace was used to guide this study. It is a two-factor theory that states factors that cause job satisfaction and job dissatisfaction in the workplace. Motivating factors includes: Achievement, recognition for contribution, the work itself, responsibility, career development and advancement. Job dissatisfaction factors, also called "hygiene factors", include: Institutional policies and administration, supervision, interpersonal relationships with supervisor and colleagues, working conditions, salary levels, status and security (Herzberg, 2003).

The relevance of Herzberg's theory to the study was the need to identify factors that cause job dissatisfaction in order to develop appropriate management strategies to address the issue of migration of health workers from rural to urban clinics. For example, attending to salary levels, improving working conditions and introducing other allowances will reduce job dissatisfaction and therefore increase staff retention.

1.5 Research questions

The following research questions guided the researcher throughout the study:

- What are the factors affecting the retention of rural health care workers in rural clinics of the Capricorn District, Limpopo Province?

- What strategies can be described to improve the retention of health care workers in the rural clinics of the Capricorn District, Limpopo Province?

1.6 Aim of the study

- To describe strategies to improve the retention of health care workers in rural clinics of Capricorn District, Limpopo Province.

1.7 Objectives of the study

- To determine the factors affecting the retention of rural health care workers in rural clinics of the Capricorn District, Limpopo Province.

- To describe strategies to improve the retention of health care workers in rural clinics of the Capricorn District, Limpopo Province.

1.8 Research methodology

A quantitative research approach was used to determine the factors affecting the retention of health care workers in rural clinics of the Capricorn District, Limpopo Province.

1.8.1 Study site

The study was conducted in the Capricorn District, one of the 5 districts of the Limpopo Province of South Africa. The Capricorn District consists of five municipalities namely:

Aganang, Lepelle-Nkumpi, Blouberg, Polokwane and Molemole municipality.

1.8.2 Study design

A descriptive design was used to describe the factors affecting the retention of health care workers in rural clinics of the Capricorn District, Limpopo Province.

1.8.3 Population and sampling

The population of the study was professional nurses and operational managers working at the selected clinics.

Simple random sampling was used to sample the clinics in each municipality and to sample the professional nurses within each clinic.

1.9 Data collection

Data was collected using a self-administered questionnaire on factors affecting the retention of rural health care workers and the strategies to improve retention of rural health care workers, designed by the researcher. The questionnaire (Annexure B) was written in English and was made up of four sections; namely: socio-demographic data, factors affecting retention of nurses, the intent to leave rural and strategies to improve retention.

1.10 Data analysis

Data was analysed using the Statistical Package for Social Sciences (SPSS) version 22 software. Data was coded by the researcher and was analysed using tables and graphs with the help of a statistician. The Chi-square test was used to determine an association between socio-demographics and factors affecting retention with the

intention to leave rural practice. A Pearson bivariate correlation was done to correlate educational qualifications with monthly income and a one sample T-test was done to determine the significance of marital status and having or not having a postgraduate diploma in primary health care.

1.11 Validity and reliability

To assess and evaluate the accuracy of the instrument, it was tested for validity and reliability before the data was collected.

1.11.1 Validity

The researcher did a thorough literature review to ensure that the questionnaire had enough content regarding the subject matter. The questionnaire was discussed with operational managers of the clinics who were not part of the research study for review. The questionnaire was also submitted to the supervisor and co-supervisor for input and review.

1.11.2 Reliability

Reliability was ensured by pre-testing the questionnaire on 8 professional nurses and 5 operational managers in clinics which were not part of the main study. Chrobach's Alpha for salary satisfaction and other benefits was 0.731, interpersonal relations amongst colleagues was 0.715, clinic infrastructure and accommodation 0.671, opportunities for promotion and career development 0.631, and availability of sports grounds, shopping centres and towns was 0.625.

1.12 Ethical considerations

Permission to conduct the study was obtained from the Turfloop Research Ethics Committee (TREC/77/2016: PG), the Limpopo Department of Health Research Ethics Committee (Ref: 4/2/2), the Capricorn District Primary Health Care Acting Manager, the operational managers and the professional nurses in charge of the clinics. Participation was voluntary. Respondents filled in consent forms and no names were

written on the questionnaire. Data was kept in a safe place and no information was divulged.

1.13 Bias

The researcher used simple random sampling to sample the clinics to avoid sampling errors and to give all respondents an equal opportunity to participate in the study. All the professional nurses in the selected clinics formed part of the study. The statistician and study supervisor were consulted to assess the questionnaire.

1.14 Significance of the study

The study would identify core factors affecting the retention of rural nurses and may further assist in the development of appropriate management strategies that would help in the retention of rural clinic professional nurses. Successful implementation of the strategies would ensure that there is equitable distribution of health professionals between rural and urban clinics. This will result in improvement of the health needs of the population, and decrease staff shortages and fatigue amongst professional nurses. Furthermore, the Department of Health will save money on the recruitment and orientation of new employees.

Outline of the study

The contents of each chapter are summarised in order to provide a short presentation of what to expect in the dissertation. Chapters are outlined below:

Chapter 1: This chapter introduces the study. It includes the background on retention of nurses, the problem statement, a preliminary literature review, the theoretical framework, research questions, and the aims and objectives of the study. The study site, study design, population and sampling, data collection, data analysis, validity and reliability, ethical considerations, bias and significance of the study are also outlined.

Chapter 2: This chapter discusses the literature reviewed pertaining to the topic of the study, with regards to what is already known about the topic and what measures have been applied previously in other settings to resolve the problem.

Chapter 3: This chapter describes the research design and methods used in the study and explains how the researcher was to achieve the intended objectives. This includes the research approach, study design, population, sampling, data collection method, data analysis, ethical considerations, and measures used to ensure validity and reliability and reduce bias.

Chapter 4: This chapter presents the data analysis, presentation and interpretation. Data collected by means of a questionnaire was analysed using SPSS and the data is presented by means of bar graphs, pie charts and tables. The data is then interpreted based on the results.

Chapter 5: This chapter discusses the study results which are substantiated using literature and the theoretical framework.

Chapter 6: In this chapter the researcher draws a conclusion, the developed strategies are described, and recommendations and limitations of the study based on the study findings.

1.15 Conclusion

This chapter discussed the background of the study, a preliminary literature review, the problem statement, research questions, the aim, and objectives, and described the research design and methodology together with the ethical considerations. Chapter discusses the literature reviewed.

Chapter 2
Literature review

2.1 Introduction

A literature review is a process involving critical evaluation of what is already known about the topic at hand by accredited scholars and researchers (Taylor, 2016). Chapter 2 presents a literature review on strategies to improve the retention of health care workers in rural clinics. The focus is on the factors that influence the migration of health care workers in order to describe appropriate strategies. In addition, literature on implications of migration, challenges and opportunities of rural practice, and models of job satisfaction are explored.

2.2 The migration of health care workers

The African continent is facing a collapse of the health care system as they cannot deliver quality health services that are accessible and efficient, which is exacerbated by rural urban migration of health care workers (Saraladevi, Plange-Rhule, Roger, Tutt & Eastwood, 2009). Migration causes maldistribution of the health workforce with rural areas having the least number of human resources (Wurie, Mohamed & Witter, 2016).

Oosthuizen, Ehlers and Jooste (2005) indicated that the trend of migration of health care workers from rural to urban areas will continue, until developed and developing countries have managed to address the factors that force nurses to migrate. With the increasing growth of migration, it is therefore critical to understand factors associated with nurse retention in order to analyse health care service quality, efficiency, effectiveness and sustainability.

According to El-Jardali, Mohamad, Jamal, Dimassi, Dumit, McEwen, Maha and Murray (2013), the nursing workforce is not consistent and nurses have different expectations at certain life stages and in different settings. Bourke, Taylor, Humphreys and Wakerman (2013) add that rural health is subjective and health workers have different perspectives, resulting in shortages of health care workers in rural areas.

2.3 Factors affecting retention of rural health care workers

Although job satisfaction has always been linked to retention, a gap remains in identifying the core factors which causes the migration of health care workers due to job dissatisfaction (Lynn Wieck, Dols & Northam, 2009). The boundaries between personal, social and professional life are broken down in rural nursing, hence professional, social and personal factors need to be considered when addressing rural nurse retention (MacLeod, Kulig, Stewart, Pitblado, Banks & D'Arcy, 2004). Rural health postings are often not considered by health care workers due to a number of factors, as explained below:

2.3.1 Socio-demographics

A number of the core socio-demographic variables that play an important role in nursing retention are explained below:

- **Age**

Age has an influence on the intention to remain in rural practice. Ingersoll, Olsan, Drew-Cates, DeVinney and Davies (2002) conducted a quantitative survey in New York on job satisfaction and organisational commitment. The survey showed that nurses who were over 50 years of age reported higher levels of job satisfaction and intent to stay in rural practice than younger nurses. Johnson, Fyfe and Snadden (2006) validates this by reporting that nearing retirement age influences nurses to stay in their current position for security reasons.

- **Rural background**

Hegney, McCarthy, Roger-Clark and Gorman (2002a) conducted a survey in Queensland on the factors affecting rural nurse retention, and found that a very specific personal factor influence the decision to continue within rural practice. According to the survey, the predictor for retention is the rural background of the healthcare worker and/or positive work experiences in rural areas (Hegney et al., 2002a). Of the

respondents of the study, 60% agreed that growing up in a rural area could influence individuals to accept a post in a rural area (Hegney et al., 2002a).

However, Henderson-Betkus and MacLeod (2004) argue that wanting to raise a family and practice in a rural area is considered a personal choice and being raised in a rural area has nothing to do with an individual's willingness to accept a post in a rural health care institution.

- **Educational level**

Education level can also affect retention of nurses. According to WHO report in 2013, in order to achieve universal health coverage, a well-trained and competent health staff component is required, which could be achieved through professional growth (WHO, 2013). Malatsi, Decock, Depooter, Delobelle, Rawlinson and Ntuli (2011) report that younger and more educated nurses are likely to express an intention to leave. Hayes et al. (2006) also indicates that highly educated employees are likely to leave for greener pastures. A quantitative study done by Kash, Naufal, Dagher and Johnson (2010) about the nursing practice environment, reported that the intention to leave was determined by an individual's educational level, and was significantly higher for nursing directors.

In contrast, Ingersoll, Olsan, Drew-Cates, DeVinney, and Davies, (2002) conducted a correlational analysis on demographic and job satisfaction data. In this study it was found that nurses with higher levels of education and those in managerial posts were more satisfied with their job (Ingersoll, Olsan, Drew-Cates, DeVinney, & Davies, 2002). Herzberg also indicates that achievement is a psychological need and can result in an employee becoming motivated and thus result in retention (Herzberg, 2003).

- **Work experience**

Work experience is one of the factors that may affect retention. Hayes, Pallas, Dufield, Shamian, Buchan & Hughes (2006) state that highly experienced nurses have job satisfaction and are likely to stay in an organisation, while less experienced nurses are

generally younger with fewer home commitments and are therefore likely to leave an organisation.

- **Family needs and commitments**

Family always comes first and their needs can influence nurse retention. HendersonBetkus and MacLeod (2004) surveyed 124 public health nurses in rural northern British Columbia, and reported that rural nurses are more likely to leave rural practice if the primary industry is suffering. Equally, the researchers Johnson, Fyfe and Snadden (2006) found that spouses' employment is a major predictor of retention, and suggest retention strategies should focus more on spousal employment than on personal job or community satisfaction.

When people are married they prefer staying together rather than long distance relationships, thus an individual would usually attempt to get a transfer to work near their spouses. Based on these findings, future retention strategies should include job match initiatives or professional development programs for spouses (Johnson, Fyfe & Snadden, 2006).

2.3.2 Monetary factors

WHO defines incentives as "all rewards and punishments that providers face as a consequence of the organizations in which they work, the institution under which they operate and the specific interventions they provide" (WHO, 2010). Incentives for health workers are broadly seen as either financial or non-financial.

Financial and non-financial incentives have been applied in developing countries to attract health workers to remote areas, coupled with a compulsory service programme (Freywot, Mullan, Payne & Ross, 2010). In many developing countries, nurses have lower salaries, possibly making remuneration a potentially powerful strategy for attracting and retaining health workers in rural areas (Mathauer & Imhoff, 2006). Although increasing of salaries has been a common approach in countries such as the Philippines, Thailand, Zambia and Kenya, to mention a few, evidence indicates that

implementing it as stand-alone intervention often has limited impact. Therefore, it should be combined with non-financial incentives (Mathauer & Imhoff, 2006).

The WHO estimates that approximately 40% of nurses will leave the profession in the next decade due to workload and low pay (WHO, 2013). There are few financial incentives for the younger generation to stay in the profession. Serneels, Lindelow, Garcia-Montalvo and Barr (2007) support this statement by indicating that money is needed to retain nurses, especially young nurses.

Countries such as South-Africa, Kenya and Thailand offer higher pay in the rural areas as a way of retaining staff. In addition, non-financial incentives, such as improved housing and professional growth, makes it easier to get nurses to take jobs in the rural areas (Serneels, Lindelow, Garcia-Montalvo & Barr, 2007).

2.3.3 Organisational factors

Organisational factors such as information technology, working conditions, HIV/AIDS epidemic, and poor management also play an important role in retention of nurses and are explained below:

- **Information technology**

Bhattacharya & Ramachandran (2015) conducted a study exploring job satisfaction and retention among health care professionals. This study revealed that information technology was one of the factors that can influence job satisfaction and intention to stay in rural areas. Information technology is known to reduce medical errors, decrease work load, and increase patient care and safety, but can also be challenging, especially for the ageing population who were born before the advancement of technology (Bhattacharya & Ramachandran, 2015). Everything is becoming more technical; therefore, a retention strategy should focus on providing information technology and computing training to influence the retention of health care workers in rural areas (Bhattacharya & Ramachandran, 2015).

- **Working conditions**

WHO defines a good and safe working environment as one which “includes appropriate equipment and supplies, supportive supervision, and helps to make posts professionally attractive and increase the retention of health workers in remote and rural areas” (WHO, 2010).

Stressful working conditions in the South African public health system was reported to be a major reason for migration from rural to urban areas by South African nurses (Shisana, Hall, Maluleke, Stoker, Schwabe, Colvin, Chauveau, Botha, Gumede, Fomundam, Shaikh, Rehle, Udjo & Gisselquist, 2003). In a study conducted in Kenya by Ojakaa, Olango and Jarvis (2014), adequate access to electricity, equipment, transport, housing and the physical state of the health facility were cited as most critical for job satisfaction and retention of health care workers.

- **HIV/Aids epidemic**

The HIV/AIDS epidemic has led to a shortage of nurses, especially at the primary level. According to Manyisa, Elsie and Aswegen (2017), HIV/AIDS has created additional responsibilities for nurses in clinics, including HIV pre and post counselling, initiating treatment, continuous monitoring of the patients health, and continuous health education to patient, relatives and the community at large.

- **Poor management**

Poor management has been identified as a contributing factor to the declining nursing standards (Neuhauser, 2002). Neuhauser (2002) emphasises that in order to successfully retain employees, an organisational culture that inspires loyalty, team work and commitment with a complex mixture of norms, values, expectations, policies and procedures, is required. Neuhauser (2002) further indicates that the relationship the worker has with the supervisor determines 50% of work-life satisfaction and managers are often the reason why employees leave. Therefore, managers should be made accountable for the successful retention of employees (Neuhauser, 2002).

2.4 Health worker shortages and the implications on health service delivery

The health workforce is of strategic importance to ensure health services delivery as it is the backbone of any health system. According to WHO (2010), one half of the world's population lives in rural areas, meaning that more health care workers should be allocated to these areas as they would be serving a large population. Shortages of health care workers are reflected in Table 2.1 below (WHO, 2010):

Table 2.1: Global Health Workforce by WHO (2010)

Region	Number (Million)	Density per 1000 population
Africa	1.6	2.3
Europe	16.63	18.9
America	21.74	24.8

Despite the shortages indicated above, WHO (2013) still predicts a shortage of 12.9 million health care workers by 2035 globally, and warns that there will be serious implications for the health of billions of people in all regions of the world (WHO, 2013). This anticipated shortage is due to the inability to compliment the actuality of rural nursing practice and the expectations of the professional nurse regarding rural practice (WHO, 2013).

2.4.1 Nursing shortage in South Africa

The nursing shortage is a challenge in South Africa, especially in rural provinces such as Limpopo, Mpumalanga and the Eastern Cape. Nurses are at the forefront of the rapidly changing health care system and constitute more than 70% of the health work force in South Africa and yet there is still a gross shortage of professional nurses (Wilmot, 2016).

According to the South African Nursing Council (SANC) registry, there are 140 598 registered professional nurses in the country, half of which are employed in the public sector serving 84% of the population, with 46% living in rural areas (South African Nursing Council, 2017). The country is still in need of 44 780 professional nurses (Wilmot, 2016). Furthermore, according to the Department of Health (2002), the shortage of professional nurses is expected to rise to 808 000 by 2020 in South Africa due to the shortage of health care workers and the fact that very few of them are willing to work in rural areas (Department of Health, 2002).

Table 2.2: Number of professional nurses and population estimates in the nine provinces.

Province	Number of Professional Nurses	Population estimates
Gauteng	36603	14,278,700
Kwazulu-Natal	31608	11,070,800
Western Cape	17135	6,510,300
Eastern Cape	15563	6,498,700
Limpopo	11853	5,778,400
North West	9845	3,856,200
Free State	8205	2,866,700
Mpumalanga	7502	4,444,200
Northern Cape	2284	1,214,000

South African Nursing Council (2017); Statistics South Africa (2017).

It is obvious from the number of professional nurses per province in South Africa (Table 2.2), that urbanised provinces such as Kwazulu-Natal, Gauteng and Western Cape possess more nurses. The Limpopo Province which is rural is in a desperate situation

in that there is a gross under-representation of nurses though it has a large rural settlement. The implications of this health care worker shortage are explained below.

2.4.2 Implications of health worker migration on service delivery

Nurse migration has not only attracted media attention, but has challenged policymakers and other experts to address the issue, considering the health implications (Hegney, McCarthy, Rogger-Clark & Gorman, 2002b). Migration does not only impact the health of the patients but also affects the health care workers and the community at large. Hence, Humphreys, Wakerman, Wells, Kuipers, Jones, Enwistle and Harvey (2007) emphasises that there is a need to retain a competent and skilled health care workforce, especially in rural areas.

A cross-sectional survey done by Bhattacharya & Ramachandran (2015), covering 20 hospitals, on retention of health professionals in urban India using health information technology, revealed that migration of skilled workers from rural to urban clinics has led to poor patient care, increased patient mortality and increased medical errors. Every human being has the right to life and good health; therefore, there should be more health care workers to provide quality patient care to prevent loss of life (Kenyakenya, 2015). Similarly, Minore, Boone, Katt, Kinch and Birch (2005) conducted a semi-structured interview and systemic literature review about the effects of nursing turnover, which showed that migration of nurses does not only affect clients and their families directly but also affects the community as a whole.

Based on the study findings conducted by Mwaniki and O Duolo (2008) about valuing and retaining health care workers in Kenya, it was reported that, remaining rural health care workers end up being over-stretched, overburdened and de-motivated. This means that they cannot give quality attention to their patients resulting in professional negligence, and deterioration of health services and thus jeopardising patients' health (Kenyakenya, 2015; Mwaniki & O Duolo). The study further revealed that newly appointed health care workers are left alone to carry out work without supervision, and

are at risk of making an incorrect diagnosis and prescribing inappropriate treatment, which puts the lives of patients at risk (Mwaniki & O Duolo, 2008).

2.5 Strategies by international and African countries to retain rural health care workers

Reducing the migration of nurses through retention remains one of the most effective ways to decrease staff shortages, especially in rural areas (Evans, 2005). The nursing profession comprises a multigenerational workforce, and each generation has different attitudes, behaviours, and expectations in the workplace, which provides challenges to today's managers (Lynn Wieck, Dols & Northam, 2009). Hence, Martin and Tulgan (2006) state that the starting point of today's managers is to capitalise on the strengths of each generation, "It's all about the work" they say.

Various strategies have been implemented by developed and developing countries with the hope of retaining rural health care workers. In the United States of America the government introduced nurse-specific stress intervention programs for both younger and senior nurses (Lynn Wieck, Dols & Northam, 2009). This was to reduce job related stress linked with job dissatisfaction. Lynn Wieck, Dols and Northam (2009) suggest that nurse managers should actively listen to nurses who express feelings of job dissatisfaction or have job related stress.

In a study by Makoka, Oosthuizen and Ehlers (2010) on nurse manager's perspectives with regards to retention, job related stress was related to lack of autonomy in the work place. Thus, there should be a sense of autonomy in the workplace and managers should involve the subordinates in organisational or patient care decisions (Makoka, Oosthuizen and Ehlers, 2010). This is supported by the National Rural Health Association (2011) who stated that the scope of practice laws should allow primary health nurses to diagnose, order tests, write prescriptions and make referrals, which would increase their autonomy. Additionally, Herzberg indicates that the supervisor should give employees a considerable degree of autonomy in completing routine work activities (Herzberg, 2003).

The Hanoi School of Public Health and Royal Tropical Institute in North Vietnam conducted an exploratory study to identify motivating factors to improve the retention of rural health care workers in rural areas. The study showed that both non-financial and financial incentives must be considered in addressing the issue of migration (Dielemann, Goung, Anh & Martenieu, 2003). Relating this to the Herzberg theory, it indicated that money is a hygienic factor associated with dissatisfaction and can never cause retention, especially if used alone (Herzberg, 2003).

On the other hand, the Ministry of Health (2006) in British Columbia created a variety of rural nursing retention strategies. Developing the health care professionals and making nursing education more accessible were one of the major focuses for the

Ministry's rural nursing retention strategies (Ministry of Health of British Columbia, 2006). The Ministry of Health British Columbia also dedicated funding to rural nursing research and has provided research conference opportunities for nurses in rural communities (Ministry of Health of British Columbia, 2006). This helps the nurses to grow professionally and acquire new knowledge and skills. The Ministry congruently states that, knowledge is of great importance and nurses need to possess specialised knowledge in the area in which they practice in order to develop their clinical practice (Ministry of Health of British Columbia, 2006).

Professional growth induces motivation and the Department of Health and Human Service's Bureau of Health Professions of the United States also saw a need to invest in nursing education and training (National Rural Health Association, 2011). The Department awarded $71.3 million dollars to strengthen the nursing workforce. Herzberg (2003) states that motivating factors, such as achievement, reduces job dissatisfaction to some extent, and capitalising on that will result in a motivated workforce, thus leading to retention.

Professional growth is of paramount importance and nurses should be paid for additional qualifications as it does not only benefit them, but also the population at large. In support of this, nurses in advanced clinical practice in rural and remote areas in Australia are remunerated in accordance with their skills and training, and the responsibilities required for their positions (National Rural Health Association, 2005).

In a survey done by Henderson-Betkus and MacLeod (2004) in public hospitals in British Columbia, it was found that nurses are threatened to lose pension benefits if they migrate from rural to urban areas. In addition, the Nurses' Union Provincial Collective Agreement in British Columbia does not allow nurses to carry their seniority or benefits from one clinic to the other, unless they have arranged a transfer (Ross, 2004). However, Ross (2004) argues that threatening nurses with loss of benefits when moving from rural to urban areas could create negative feelings and limit experiences.

Africa still remains one of the under-developed continents in the world, despite its rich natural and human resources (Kenyakenya, 2015). The eastern, central and southern African countries also face the same challenge of the migration of health care workers (Lipinge, Dambisya, Loewenson, Chimbari, Ndetei, Munga, Sibandze & Lugina, 2009). Within all these regions, the retention of health care workers is managed through mutual agreements between countries (Lipinge, Dambisya, Loewenson, Chimbari, Ndetei et al, 2009). Strategies agreed upon and implemented by eastern, central and southern African countries to retain and motivate public health care workers are categorised as follows (Dambisya, 2007):

- **Training and career path-related incentives**

Promoting professional development, offering opportunities for higher training, bursaries and funding of research remains a powerful retention strategy for the authorities (Kolstad, 2011). Lea and Cruickshank (2007) reported that very little is known about recruitment and retention related to the training of health care workers, including possible future investment it could offer to rural health centres. This places a challenge on whether training of health care workers, especially nurses, could result in improved retention in rural health institutions.

- **Incentives that address social needs**

Financial incentives are more effective than non-financial incentives in retaining rural health nurses in countries such as South Africa, Lesotho, Mozambique, Malawi, Tanzania, Lesotho, Zambia, Swaziland, Mozambique and Mauritius. Hence, in these regions, nurses' salaries were increased, and housing and transport allowances were

initiated as a way of retaining the staff in rural areas (Vujicic, Afano & Bukhuti, 2010). However, Willis-Shattuck, Bidwell, Thomas, Wyness, Blaauw and Ditlopo (2008) argue that financial incentives such as rural, housing and danger allowances need to be integrated with other non-financial incentives in order to lead to retention.

- **Improved working conditions**

Clinic infrastructure and the availability of resources needs to be prioritised since it frustrates health care workers if they are unable to provide the care needed due to lack of resources (Willis-Shattuck et al., 2008). Health care facilities, medical equipment, stock supply and security for the staff was improved in eastern, central and southern African countries, such as South Africa and Namibia (Dambisya, 2007).

- **Human resource management**

There should be well-developed human resource management, to improve motivation of the health care workers. Ehlers and Oosthuizen (2011) supports this by indicating that management could influence nurse retention by leading by example, respecting employees, and applying disciplinary measures fairly. All regions agreed upon the introduction of medical aid schemes to promote access to better health care services for the employees and their families. This was introduced by countries such as South Africa in 2002 and Mozambique in 2006 (Government Employees Medical Scheme, 2005; Momentum Africa Business Unit, 2006).

In a semi-quantitative study conducted by Robert (2013) to evaluate the implemented strategies, it was discovered that these interventions had been applied for over ten years but still the issue of migration had not been resolved (Robert, 2013). This raises concerns regarding the effectiveness of the strategies implemented and thus more strategies need to be developed.

2.6 Initiative by the World Health Organization regarding retention

With the increased need of for health care workers in rural areas through improved retention, WHO (2010) developed principles to guide countries in the formulation of national policies to improve retention of health care workers in rural areas, as follows:

- **Focus on health equity**

According to this principle, everyone should have equal access to good health; however, there are still inequalities in many countries globally. Understaffing in rural health care facilities results in health inequalities. Adhering to this principle will assist in allocating human resources based on the population needs. Most of the world's population live in rural areas, thus allocating a greater number of health care professionals in rural areas will result in good health for all people (WHO, 2010).

- **Ensure rural retention policies as part of the national health plan**

Rural retention policies should be included in the national plan of a country. A national health plan provides a framework for holding all stakeholders accountable for unequal distribution of human resources. The health plan should include the number of health care workers required now and in the future and also the strategies to motivate and retain them. Policy interventions and health plans should aim to meet the health needs and expectations of the population (WHO, 2010).

- **Understanding the health workforce**

Before developing any strategies, it is imperative to understand the workforce. This includes understanding the health care workers distribution by gender, geographical region and speciality. A clear understanding of the factors which influences the health workers to migrate from rural to urban areas will assist in developing appropriate management strategies. Understanding these factors is very complicated as they involve personal attributes (WHO, 2010).

- **Understanding the wider context**

Broader social, economic, and political factors at national and community level need to be considered when developing strategies to retain rural health care workers. Raising education levels, and restructuring infrastructure such as roads, health facilities, water, electricity and sanitation will make rural areas more attractive to work in and thus retention and improve access to health services (WHO, 2010).

- **Strengthening human resource management systems**

Strategies to retain health care workers should focus on human resource management systems, which includes, planning, recruiting, hiring, performance management and retention. Human resource management in many countries is weak, and developing good strategies to retain rural health care workers requires experts in the field (WHO, 2010).

- **Engage with relevant stakeholders from the beginning of the process**

Partnerships with relevant stakeholders are required when developing retaining strategies. Professional associates, rural communities and other decision makers who are relevant must be involved in the developing process (WHO, 2010).

- **Get into the habit of evaluation and learning**

Monitoring and evaluation of the implemented strategies should be done from the beginning of the implementation, as this will assist in identifying any shortfalls and the need to re-plan. Research has to be done to evaluate the effectiveness of and to revise policies, in order to assist in developing evidence-based strategies (WHO, 2010).

2.7 Challenges and opportunities of rural practice

Rural nursing practice is characterised by a variety of challenges and opportunities which influences a nurse's intention to stay or leave rural practice (Lehmann, Die leman & Martineau, 2008). Dixit (2002) outlined that rural health institutions must not only have an adequate human resources, but those professionals must be able to meet the needs of the community in many ways. Amongst others it includes making sure that clients get the best care as possible, having proper licensure, education and training, and cultural competency skills (Dixit, 2002).

According to De Vries and Reid (2003), nurses faces challenges such as having a greater burden placed on them by larger communities that typically depend on fewer nurses to meet all of their health needs. Diefenbaker, Playfield and Herman (2006) further added that the rural nurses live in a "fish bowl" and they are expected to be available at all times, to be all things to all people because sometimes they are the only professionals in the area.

Lea and Cruickshank (2007) conducted a qualitative study of experienced nurses in New Wales. It was discovered that nurses in rural clinics work where there are limited health care professionals, health care facilities and medical equipment, which often results in them being a 'jack of all trades', which means working in all areas and sometimes working beyond their scope of practice (Lea & Cruickshank, 2007).

Pong and Russell (2003) indicates that nurses cannot always deal with the increased variety and responsibility of rural practice, affecting their decision to stay in rural sites (Pong & Russell, 2003). Pong and Russell (2003), stated that further pressures on the rural nursing workforce arise with the loss of experienced nurses to retirement, replaced by newly graduated nurses who still need supervision, in conjunction with the increasing educational requirements for registered nurses.

Lea and Cruickshank (2007) further stipulated that the role of rural nurses requires a multidimensional approach accompanied by multiple skills (Lea & Cruickshank, 2007). Furthermore, Bushy (2002) added that nurses who lack the confidence to make

independent decisions are less likely to survive in rural nursing practice. It is obvious that the nurse who chooses to work in a rural setting must be creative, knowledgeable and flexible in order to apply the nursing process to fit the clients' preferences, while taking into consideration the realities of the community environment (Bushy, 2002).

According to Bushy (2006) maintaining confidentiality and anonymity can pose challenges for health care workers who live and work in rural areas. The society is becoming knowledgeable about health issues; hence, innovative approaches are required on the part of nurses in rural practice to ensure patient confidentiality, while at the same time treating members of the community with respect (Bushy, 2006).

One of the biggest challenges in rural practice is that most of rural residents are older, poorer, and more likely to have chronic diseases than urban residents (Kruk, Johnson & Gyakobo, 2010). This can be due to lack of good sanitation, clean water and good schools for proper education. Regardless of this challenge, clinics, which are relatively smaller, are expected to provide better care in the outpatient setting, and offer home based care and school health, which are more demanding than inpatient care (De

Vries & Reid, 2003). Despite all the challenges, it is important to also note that rural nurses are highly honoured in their communities, which can make it difficult to draw a line between one's personal and professional identity (Bushy, 2006).

Nurse practitioners who practice in rural areas also face a different set of opportunities than those working in urban areas (Hanson & Jack, 2008). Rural nurses have autonomy, they have greater independence and freedom in their practice and they are community leaders and change agents (Diefenbaker, Playfield & Herman 2006). According to Kolstad (2011), nurses who work in rural areas get to know their clients and the immediate community better.

2.8 Theoretical framework

Various theories attempt to define factors leading to migration in the nursing context. These theories also describe what processes take place to reduce migration and achieve the best quality nursing care through improved retention.

For the purposes of this study, Herzberg's theory for motivation at the workplace was used. It is a two-factor theory that states factors that cause job satisfaction, and job dissatisfaction in the workplace. Motivating factors includes achievement, recognition for contribution, the work itself, responsibility, career development and advancement, which leads to job satisfaction. Job dissatisfaction factors, also called “hygiene factors”, include: institutional policies and administration, supervision, interpersonal relationships with supervisors and colleagues, working conditions, salary levels, status and security, which cause job dissatisfaction (Herzberg, 2003).

2.8.1 Motivating factors

Herzberg (2003) has identified the following factors which motivate workers to remain in their work area:

- **Achievement**

For employees to have a sense of achievement, there must be an advantage or benefit of some sort to working in that environment, and this depends on the type of job.

- **Recognition**

Employees should be praised and recognised for their accomplishments and contributions to the institution.

- **The work itself**

The work itself should be meaningful, interesting and challenging in order for the employee to perform better and become motivated. This should be in alignment with the employee’s job description.

- **Responsibility**

Employees become more motivated if managers give them ownership of the work and if there is minimised control over employees, but retained accountability.

- **Advancement**

There must be promotional opportunities to enhance growth in order to motivate employees to perform well.

2.8.2 Hygiene factors

Even though workers may be motivated to remain in their work stations there are hygienic factors such as institutional policies, supervision, interpersonal relationships with colleagues, salaries, working conditions and status which should be considered in order to retain them.

- **Institutional policies**

Policies should be fair, clear and not be too rigid, and employees should be involved in drafting of policies.

- **Supervision**

The supervisor should involve subordinates in decision making and also give them a considerable degree of autonomy in completing routine work activities.

- **Interpersonal relationships with colleagues and supervisors**

The relationship of the employee with the supervisor, colleagues and subordinates should be acceptable and appropriate. Friendships should remain outside of the work environment and the supervisor should not have favouritism amongst colleagues.

- **Salary**

Money does not motivate an employee but the salary structure should be appropriate and reasonable. It must be equal and competitive for those in the same institution and in the same category.

- **Working conditions**

The working conditions should be clean and safe, and equipment should be functional and up-to-date. Hazards should be eliminated and employees should be provided with protective clothing.

- **Status**

The employee's status within the organisation should be familiar and retained.

According to the Two-Factor Theory there are four possible combinations (Herzberg, 2003):

1. High Hygiene + High Motivation: The ideal situation where employees are highly motivated and have few complaints.
2. High Hygiene + Low Motivation: Employees have few complaints but are not highly motivated. The job is viewed as a pay check.
3. Low Hygiene + High Motivation: Employees are motivated but have a lot of complaints. A situation where the job is exciting but the salary and working conditions are just average.
4. Low Hygiene + Low Motivation: The worst situation where employees have many complaints and are not motivated at all.

Herzberg (2003), further argued that there are two distinct human needs described. Firstly, there are physiological needs that can be fulfilled by money, such as food and clothes. Secondly, there are psychological needs such as the need to achieve and grow, which can be accomplished through activities that lead one to achieve such as furthering of studies or promotion.

The relevance of Herzberg's theory to this study was the need to identify factors that cause job dissatisfaction, in order to come up with appropriate management strategies to address the issue of migration of health workers from rural to urban clinics. For example, attending to salary levels, improving working conditions and introducing other allowances will reduce job dissatisfaction and therefore increase staff retention.

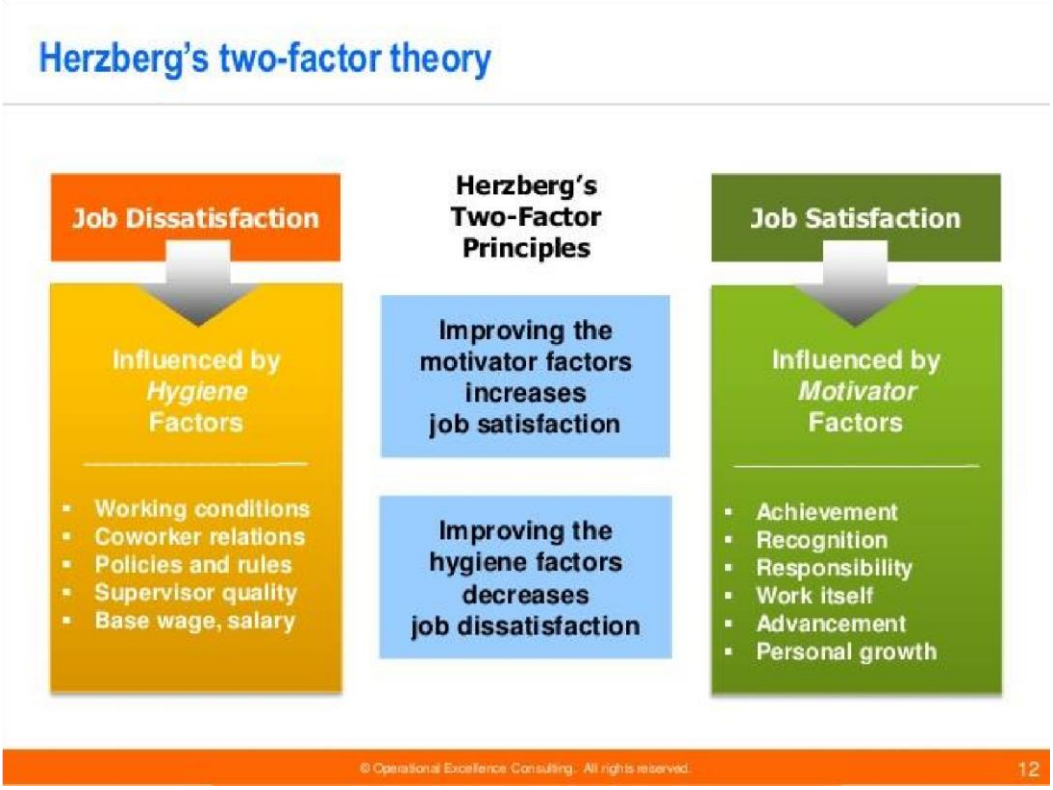

Figure 2.1: Herzberg theory for motivation in the work place. Adapted from Operational Excellence Consulting (2016).

2.9 Conclusion

The literature has shown that there is a critical shortage of health care workers in South Africa, especially in rural areas, which is exacerbated by migration from rural to urban areas. This leaves rural clinics understaffed, compromising the health care systems. Evidence shows that there is a relationship between factors affecting retention, job satisfaction and the intention to leave or stay in rural practice. It is concluded that the intention to leave or stay is determined by job satisfaction, hence factors influencing migration must be better elucidated in order to develop appropriate strategies to improve retention. Health care workers need to think differently about rural practice; however, the challenge is that rural practice is a speciality that is not valued at all.

Chapter 3

Research methodology

3.1 Introduction

Chapter 3 presents the materials and methods employed in the study. This chapter includes: Research approach, study design, study site description population, and sampling. Furthermore, the chapter describes methods of data collection and data analysis and also considers ethical considerations.

3.2 Research approach

A quantitative research approach was used to conduct this study. A quantitative research approach was used in this study to determine the factors affecting the retention of health care workers in rural clinics using a questionnaire. Study findings were expressed in numbers to quantify the results.

Babbie (2010) defines quantitative research as a method which emphasises measurements and statistical analysis of the numerical data collected through questionnaires using computational skills, and generalising the information across a group with the same characteristics.

3.3 Research design

To undertake a scientific study, all steps and methods to be implemented should be put in a logical way. Khothari (2004) defines research design as a plan, a roadmap and blueprint strategy of investigation about a certain problem so as to answer the research questions.

In this study, a research proposal was written indicating all steps to be undertaken to reach the intended goal of identifying factors affecting retention of rural nurses, in an attempt to describe strategies to improve retention.

3.3.1 Descriptive design

Descriptive research is the accurate representation of the characteristics of a group and the frequency with which a certain phenomenon occurs, using statistics to summarise and describe the data and answers questions such as what, why or who (Pilot & Hungler, 2013).

The researcher considered this design as suitable for the study in order to answer research questions by determining and describing factors affecting the retention of rural health care workers in rural clinics and strategies to retain nurses, which was determined using a questionnaire.

3.4 Study site

The research study was conducted in the Capricorn District, which is one of the 5 districts of the Limpopo Province of South Africa .The district is situated at the core of economic development of the province, in the city of Polokwane. The Capricorn District has a population of 1,154,673, wherein the majority of people in the Limpopo Province live. More than half of the population lives in the rural areas where health care services are required the most, hence this district was chosen as the study site.

The Capricorn District consists of five municipalities, namely: Aganang, LepelleNkumpi, Polokwane, Molemole and Blouberg municipality. The study was conducted in clinics within the following three municipalities based on their geographical area: Aganang, Lepelle-Nkumpi and Molemole municipality. These clinics provide health care services such as outpatient medical treatment, reproductive health, maternal and child health, health screening and education, and diagnostic and pharmaceutical services.

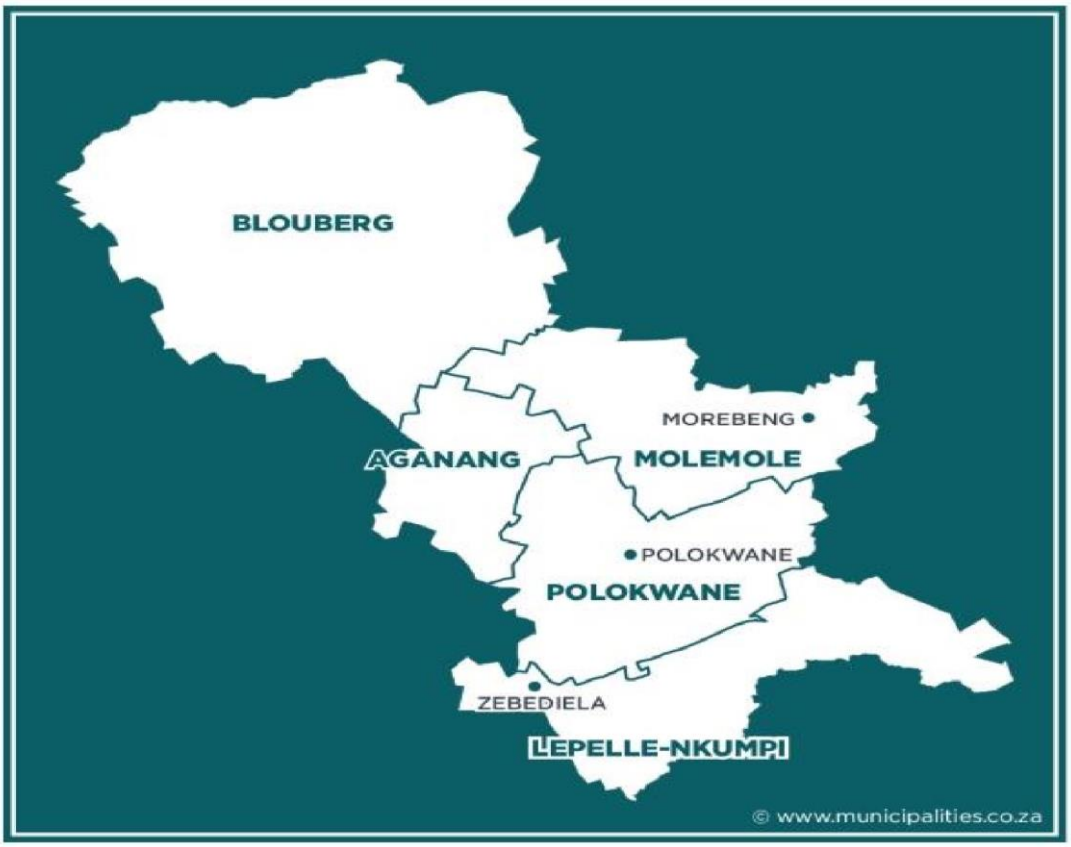

Figure 3.1: Capricorn District municipality, Capricorn District map (2016)

3.5 Population and sampling

3.5.1 Population

Population is the entire set of units that have the characteristics that is of focus to a scientific query (Lavkaras, 2008). The population of the study was professional nurses and operational managers working at the selected clinics. The professional nurses and operational managers were selected as the population based on the following reasons:

- They are the ones who are most likely to migrate, as compared to other health care professionals;
- They render most of the primary health care services;

- They are the ‘first line’ staff for health systems;
- Operational managers are part of the management team that plays a role in human resource retention.

3.5.1.1 Population size

The selected three municipalities had a total number of 40 clinics, the population of the study was 240. There were 200 professional nurses and 40 operational nurses included in the study.

3.5.2 Sampling

Sampling is the process of selecting units from a population of interest so that by studying the sample, the results may be generalised to the population that was selected from (William, 2006).

Simple random sampling was used to sample clinics in each municipality and population. A simple random sampling method was used in this study so as to give all the professional nurses and operational managers in the selected municipalities an equal chance to participate in the study. Simple random sampling is defined as a sampling method wherein each member of the population has an equal chance of participating in the study (Dudovskiy, 2016).

Each clinic employed one operational manager, who were all included in the study. All professional nurses from each clinic participated in the study, as most of the clinics did not meet the required staffing levels.

3.5.2.1 Sample size

Three municipalities were randomly selected based on their geographical location; Aganang (remote rural area), Lepelle-Nkumpi (predominantly rural) and Molemole (rural area). The Krejcie and Morgan (1970) table was used to determine the sample size from each clinic in each municipality in order to determine the number of professional nurses. The sample size of the professional nurses was calculated using the average number of professional nurses per clinic, which was 5, and the sample

size for the operational managers was 1 per clinic, multiplied by the number of sampled clinics (35), based on the table, the sample size is indicated below:

Table 3.1: Total sample size according to Krejcie and Morgan's table for determining the sample size.

Name of the municipality	Total number of clinics	Number of sampled clinics	Sample size (Professional nurses and operational managers)
Aganang	**13**	**10**	**60**
Lepelle-Nkumpi	**21**	**19**	**114**
Molemole	**6**	**6**	**36**
Total	**40**	**35**	**210**

Total	*Sample*	*Total*	*Sample*	*Total*	*Sample*
10 ⇒	10	220 ⇒	140	1200 ⇒	291
15 ⇒	14	230 ⇒	144	1300 ⇒	297
20 ⇒	19	240 ⇒	148	1400 ⇒	302
25 ⇒	24	250 ⇒	152	1500 ⇒	306
30 ⇒	28	260 ⇒	155	1600 ⇒	310
35 ⇒	32	270 ⇒	159	1700 ⇒	313
40 ⇒	36	280 ⇒	162	1800 ⇒	317
45 ⇒	40	290 ⇒	165	1900 ⇒	320
50 ⇒	44	300 ⇒	169	2000 ⇒	322
55 ⇒	48	320 ⇒	175	2200 ⇒	327
60 ⇒	52	340 ⇒	181	2400 ⇒	331
65 ⇒	56	360 ⇒	186	2600 ⇒	335
70 ⇒	59	380 ⇒	191	2800 ⇒	338
75 ⇒	63	400 ⇒	196	3000 ⇒	341
80 ⇒	66	420 ⇒	201	3500 ⇒	346
85 ⇒	70	440 ⇒	205	4000 ⇒	351
90 ⇒	73	460 ⇒	210	4500 ⇒	354
95 ⇒	76	480 ⇒	214	5000 ⇒	357
100 ⇒	80	500 ⇒	217	6000 ⇒	361
110 ⇒	86	550 ⇒	226	7000 ⇒	364
120 ⇒	92	600 ⇒	234	8000 ⇒	367
130 ⇒	97	650 ⇒	242	9000 ⇒	368
140 ⇒	103	700 ⇒	248	10000 ⇒	370
150 ⇒	108	750 ⇒	254	15000 ⇒	375
160 ⇒	113	800 ⇒	260	20000 ⇒	377
170 ⇒	118	850 ⇒	265	30000 ⇒	379
180 ⇒	123	900 ⇒	269	40000 ⇒	380
190 ⇒	127	950 ⇒	274	50000 ⇒	381
200 ⇒	132	1000 ⇒	278	75000 ⇒	382
210 ⇒	136	1100 ⇒	285	100000 ⇒	384

Figure 3.2: The Krejcie and Morgan table used for determining sample size, adapted from Organizational Leadership Assessment Group (2016).

- **Inclusion criteria**

Professional nurses with three years of experience and more and all operational managers were included in this study.

- **Exclusion criteria**

All staff nurses, auxiliary nurses and student nurses in the clinics were excluded from this study.

Professional nurses with less than 3 years' experience were also excluded from this study.

3.6 Data collection

Data collection is the gathering of information that describes some information from which conclusions can be drawn (Brink, Van Der Walt & Vanresburg, 2012). In this study data was gathered by means of a questionnaire.

3.6.1 Data collection instrument

A self-administered questionnaire on factors affecting the retention of rural health workers and strategies to improve retention of rural health care workers was designed by the researcher using the Likert-scale. The questionnaire was developed using literature review, consultation of experts in the field and the supervisors. The questionnaire (See Annexure A) was written in English because it is the official language for communication in the nursing profession.

3.6.2 Structure of the questionnaire

The questionnaire was divided into 4 sections, namely:

Section A: Socio-demographic data (10 questions). Variables included; age, qualifications, income level, gender and years of experience.

Section B: Factors affecting the retention of rural nurses (20 questions).

Section C: The intent to leave rural practice (3 questions).

Section D: Strategies to improve the retention of professional nurses in rural clinics (2 questions).

3.6.3 Data collection process

The researcher contacted the selected clinics to make appointments, and dates were given on days where all shifts were meeting. However, second arrangements had to be made to cover those on sick leave and those who were attending workshops.

Questionnaires were distributed by the researcher to the selected clinics and respondents. Questionnaires were completed in the presence of the researcher during tea and lunch breaks. Completion of the questionnaires took approximately 10 minutes, with researcher clearly explaining each item to the respondents. Data was collected by the researcher over a period of 3 months; two weeks in Molemole, one month in Aganang, and one month and two weeks in Lepelle-Nkumpi. Data was obtained from 6 clinics in Molemole, 10 clinics in Aganang, and 19 clinics in LepelleNkumpi. Approximately one to three clinics were attended to per day, depending on the distance between the clinics and the appointment days.

3.7 Data analysis

Data were analysed using the Statistical Package for Social Sciences (SPSS), version 22. SPSS enabled the researcher to reduce, summarise, organise, manipulate, evaluate, interpret and communicate quantitative data in the form of tables and graphs. Descriptive statistics included measures of central tendency and the frequencies of the measured variable (Burns & Groove, 2011). Data was presented in the form of tables, pie-charts and bar graphs. Cross-tabulation was used to make associations between two or more variables.

3.8 Validity and reliability

To assess and evaluate the accuracy of the instrument, the instrument was tested for validity and reliability before the data was collected.

3.8.1 Validity

Validity refers to the extent to which an instrument measures the variable that it is intended to measure (Dudovskiy, 2016).

- **Content validity -** refers to whether the instrument measured the desired trait (Shuttleworth, 2011). The researcher did a thorough literature review to ensure that the questionnaire had enough content regarding the subject matter. The questionnaire was also submitted to a statistician, the supervisors and experts in the field for review.

- **Face validity -** refers to whether the instrument used for data collection appears to measure was it is intended to measure (McLeod, 2013). This was enhanced through consultations with the supervisors.

- **External validity -** refers to the extent to which the results can be generalised to the population at large (Shuttleworth, 2011). This was enhanced through the sample representing a population with similar and desired characteristics by the researcher to make conclusions which can be generalised to the whole population at large through the use of simple random sampling.

3.8.2 Reliability

Reliability refers to the consistency, stability and repeatability of the informant's accounts, as well as the researcher's ability to collect and record information accurately (Creswell, 2009). This implies that if the researcher repeated the same method of data collection and analysis with the same respondents, the results of the study should be the same. Reliability was ensured through conducting a pilot study.

- **Pilot study**

A pilot study is defined as a small study that tests the research protocols, measurements, recruitment strategies and data analysis techniques (Barbara, 2015).

Pre-testing of the questionnaire was done on 8 professional nurses and 4 operational managers in clinics which were not part of the main study. The questionnaires were completed at home, where the environmental context was favourable and was tested for internal reliability using Chronbach's Alpha. Chrobach's Alpha for salary satisfaction and other benefits was 0.731, interpersonal relations amongst colleagues was 0.715, clinic infrastructure and accommodation was 0.671, opportunities for promotion and career development was 0.631, and availability of sports grounds, shopping centres and towns was 0.625.

The purpose of the pilot phase was:

- To gain in-depth understanding of the factors affecting the retention of health care workers in rural clinics;
- To use the information above to identify key strategies which might improve retention of rural health care workers;
- To develop an appropriate instrument to measure those variables.

3.9 Ethical considerations

Nursing is an ethical profession and this implies that research procedures must adhere to the professional, legal and social obligations of the respondents.

Ethical considerations are specified as critical in research and consist of four main principles, namely permission to conduct the study, privacy, anonymity, confidentiality, and are discussed below (Bryman & Bell, 2007):

- **Permission to conduct the study**

Ethical clearance was obtained from the Turfloop Research Ethics Committee (TREC/77/2016: PG). Permission to conduct the study was also obtained from the

Limpopo Department of Health Research Ethics Committee (Ref: 4/2/2), the Capricorn District primary health care acting manager, the clinic supervisors, the operational managers, and the professional nurses in charge of the clinics.

- **Informed consent**

Participation was voluntary; therefore participants had the right to withdraw from the study at any time and refuse to answer questions which made them feel uncomfortable. They were also be allowed to ask for clarification.

- **Anonymity**

No names were written on the questionnaire, only codes were used. Anonymity was ensured by not using names of the participants in the analysis of data.

- **Confidentiality**

Data collected was not divulged to other people not involved in the research without the permission of the respondent and the filled-in questionnaires were kept in a locked safe by the researcher.

3.10 Bias

Bias is an influence that produces an error distortion which can affect the quality of evidence in the study. It can occur at any step of the research process and can be due to various problems as the study progresses. (Brink et al., 2012). Bias was reduced through:

- The use of simple random sampling to ensure that the sample represented the population. This sampling method gave all the professional nurses and operational managers within the population an equal chance to participate in the study.
- Consultations with a statistician and the supervisor to assess the questionnaire, to make sure that the data collected was relevant.

3.11 Conclusion

The chapter described all the scientific steps undertaken in the study and it included: research approach, research design and, population and sampling, validity and reliability, data collection, data analysis, ethical considerations and bias. Results of the study will be presented in the following chapter.

Chapter 4

Study results

4.1 Introduction

The previous chapter outlined the research methodology. This chapter presents the inherent meaning of the research data obtained from this study. As stated in the preceding chapter, the results are presented in a descriptive format.

4.2 Respondent rate of the questionnaire

The data was collected from December 2016 to February 2017, using a questionnaire. Of the 210 distributed questionnaires, only 170 questionnaires were completed and returned. The respondent rate was 81%, due to some not willing to participate in the study.

4.3 Results and interpretation of findings: section a – socio-demographic data

In order to analyse the population of the study, especially in relation to migration, Section A of the questionnaire investigated the socio-demographic data of the professional nurses and operational managers in rural clinics of the Capricorn District.

The results of the study are presented using tables, pie charts and bar graphs.

4.3.1 Gender of the respondents

The majority of the respondents were females 156 (91.76%), as compared to 14 (8.24%) who were males.

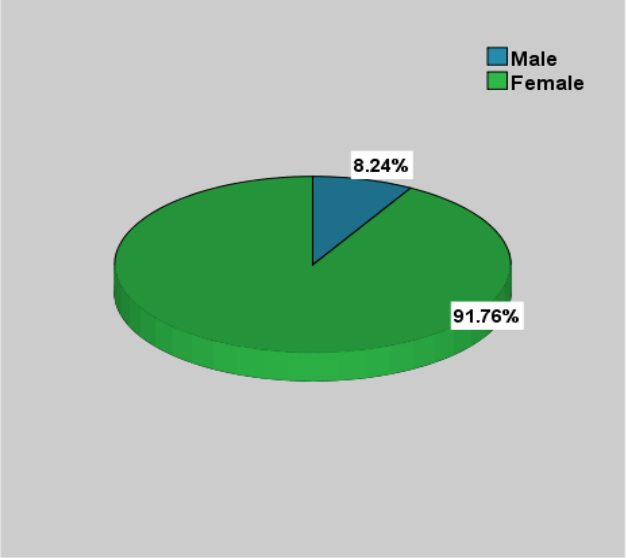

Figure 4.1: Gender of the respondents (n=170)

4.3.2 Age of the respondents

As shown in figure 4.2 below, half of the respondents 85 (50%) were between 50-59 years, only a few respondents 31 (18.23%) were aged between 40-49 years, (28; 16.47%) were aged between 30-39 year, 19 (11.17%) were <30 years, and 7 (4.11%) were more than 60 years old.

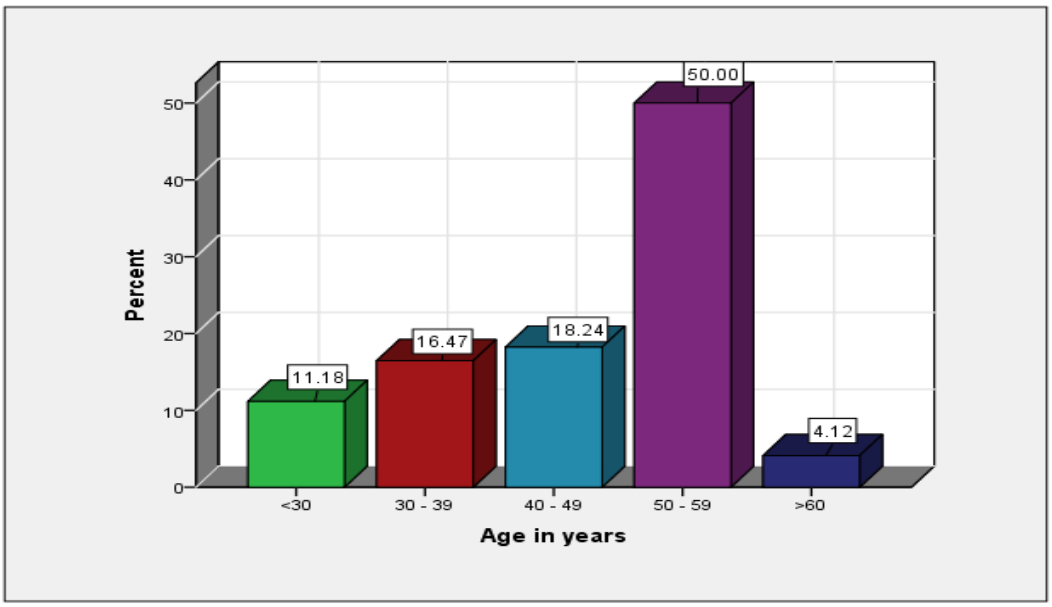

Figure 4.2: Age of the respondents (n=170)

4.3.2.1 Age and the intend to leave rural nursing practice crosstabulation

Shown in table 4.1 below, all of the respondents 19 (100%) aged <30 years wished to relocate, almost all 25 (89.28%) of those aged between 30-39 years wished to relocate, 23 (74.13%) of those aged between 40-49 years, and 22 (25.88%) who were between 50-59 years wished to leave rural practice, while only 1 (14.28%) aged >60 years wished to leave rural practice.

Table 4.1: Age and the intent to leave rural practice crosstabulation (n=170)

Age	The intent to leave rural practice		Total (N)	Percentage (%)
	Yes	No		
<30	19	0	19	100%
30 – 39	25	3	28	89.28%
40 – 49	23	8	31	74.13%
50 – 59	22	63	85	25.88%
>60	1	6	7	14.28%
Total	90	80	170	52.94%

4.3.3 Marital status of the respondents

More than half of the respondents 97 (57.06%) were married, 38 (22.35%) were single, while only a few 19 (11.18%) were divorced, co-habiting 11 (6.47%) or were widows 5 (2.9%).

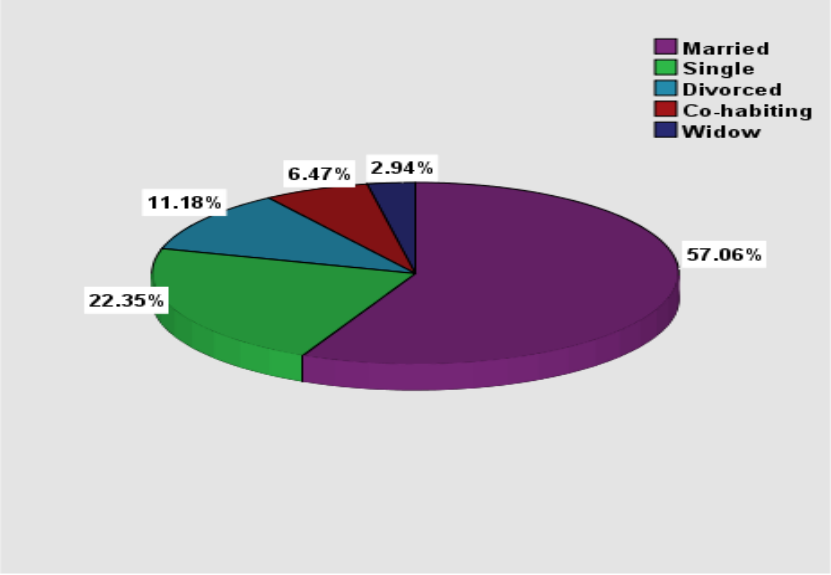

Figure 4.3: Marital status of the respondents (n=170)

4.3.3.1 Marital status and the intend to leave rural nursing practice cross-tabulation

As illustrated in the table below, 33 (82.50%) of those who were single intended to leave rural practice, 11 (52.38%) of those who were divorced wanted to leave, 42 (42.85%) of those who were married and 4 (36.36%) of those who were co-habiting wanted to leave rural practice. A one sample T-test was done and marital status was found to be statistically significant P-value = 0.000.

Table 4.2: Marital status and the intent to leave rural practice crosstabulation (n=170)

Marital status	Intent to leave rural practice		Total (N)	Percentage (%)	P-value
	Yes	No			
Married	42	56	98	42.85%	**0.000**
Single	33	7	40	82.50%	
Divorced	11	10	21	52.38%	
Co-habiting	4	7	11	36.36%	
Total	90	80	170	52.94%	

4.3.4 Educational qualifications of the respondents

More than a half of the respondents 112 (65.88%) had a diploma in nursing, 57 (33.53%) had a degree in nursing and only 1 (0.59%) had a master's degree in nursing as shown in figure 4.4 below.

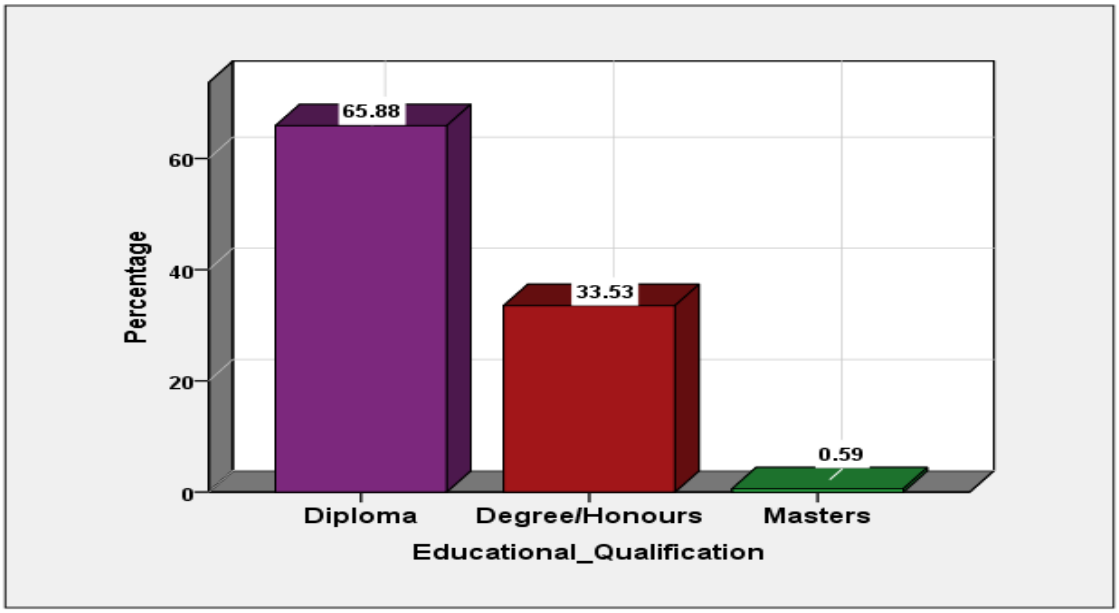

Figure 4.4: Educational qualifications of the respondents (n=170)

4.3.4.1 Association between educational qualification and monthly income

The association between educational qualification and monthly income was found to be statistically significant (P = 0.000).

Table 4.3: The association between educational qualification and monthly income

Pearson Bivariate correlation	P-value	Pearson Correlation
Educational Qualification	0.000	-.653*
Monthly income		

*Pearson Bivariate correlation is statistically significant at 0.01 level of significance (2 tailed).

4.3.5 Respondents with and without speciality in post graduate diploma in primary health care

Greater than half of the respondents 108 (63.53%) had a postgraduate diploma in Primary Health Care and only a few 62 (36.47%) did not have the speciality.

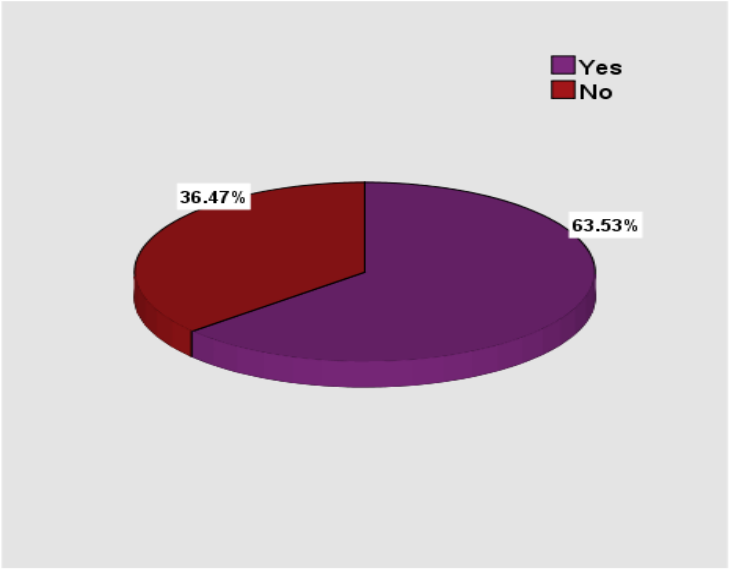

Figure 4.5: Respondents with and without the postgraduate diploma in Primary Health Care speciality (n=170)

4.3.5.1 Respondents with and without a postgraduate diploma in primary health care speciality cross-tabulation

According to table 4.4 below, the majority 72 (64.86%)of the respondents with a postgraduate diploma in Primary Health Care never intended to leave rural practice, as compared to 39 (35.13%) which intended to leave rural practice. Almost all 51 (86.51%) of those without a postgraduate diploma in Primary Health Care intended to leave rural practice, as compared to 8 (13.55%) which did not intend to leave rural practice. A one sample T-test was done and having or not having a postgraduate diploma in primary health care was found to be statistically significant, P-value = 0.000.

Table 4.4: Respondents with or without postgraduate diploma in Primary Health Care and their intent to leave rural practice (n=170)

Respondents with or without Post graduate Diploma in Primary Health Care	The intent to leave rural practice		Total (N)	P-value
	Yes	No		
Respondents with Post graduate Diploma in Primary Health Care	39 (35.13%)	72 (64.86%)	111	**0.000**
Respondents without Post graduate Diploma in Primary Health Care	51 (86.44%)	8 (13.55%)	59	
Total (N)	90	80	170	

4.3.6 Respondents number of children

More than a quarter of all the respondents 49 (28.82%) had one child, 47 (27.65%) had more than three children, 45 (26.47%) had two children and 29 (17.06%) did not have children.

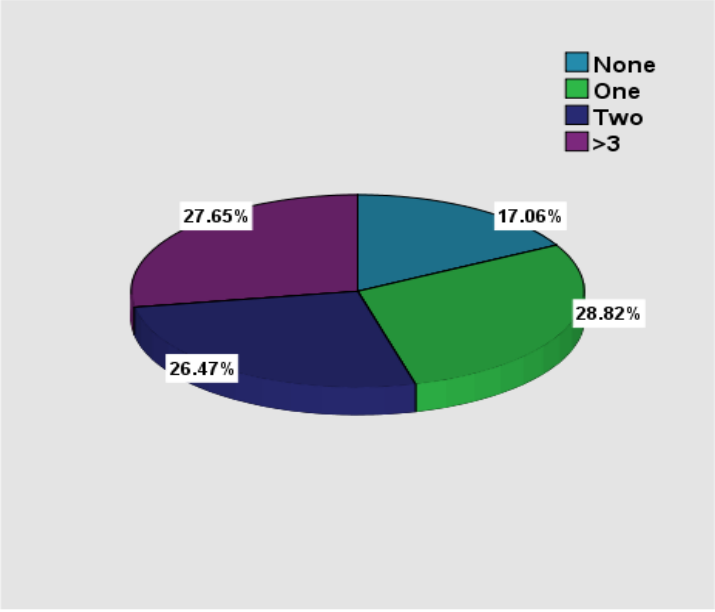

Figure 4.6: Number of children of the respondents (n=170)

4.3.7 Number of years working at the present rural clinic

More than half of the respondents 88 (51.76%) had been working at the present rural clinic for less than 10 years, 56 (32.94%) had between working at the clinic for 10-20 years, 19 (11.18%) had been working at the clinic for 20-30 years, and a few 7 (4.12%) had been working at the rural clinic for more than 30 years.

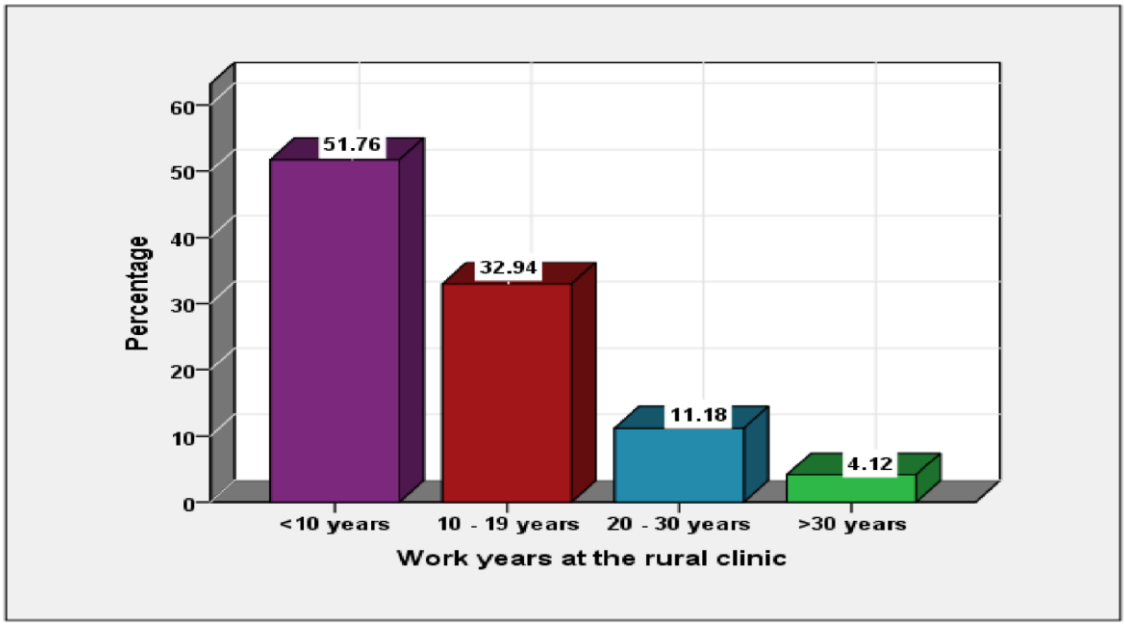

Figure 4.7: working years of the respondents at the rural clinic (n=170)

4.3.8 Area of upbringing of the respondents

As shown from figure 4.8 below, the vast majority of the respondents 125 (73.53%) were raised in rural areas, while a few 45 (26.47%) were raised in urban areas.

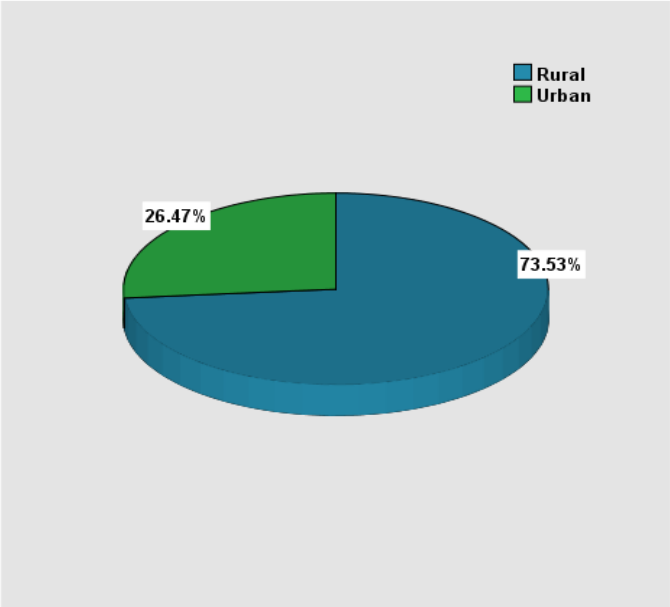

Figure 4.8: Area of upbringing of the respondents (n=170)

4.3.9 Distance travelled to work by the respondents

The respondents travelled approximately the same distance; 55 (32.35%) travelled less than 5km to work, 44 (25.88%) travelled 5-9km to work, 42 (24.71%) travelled more than 20km to work and 29 (17.06%) travelled 10-20km to work.

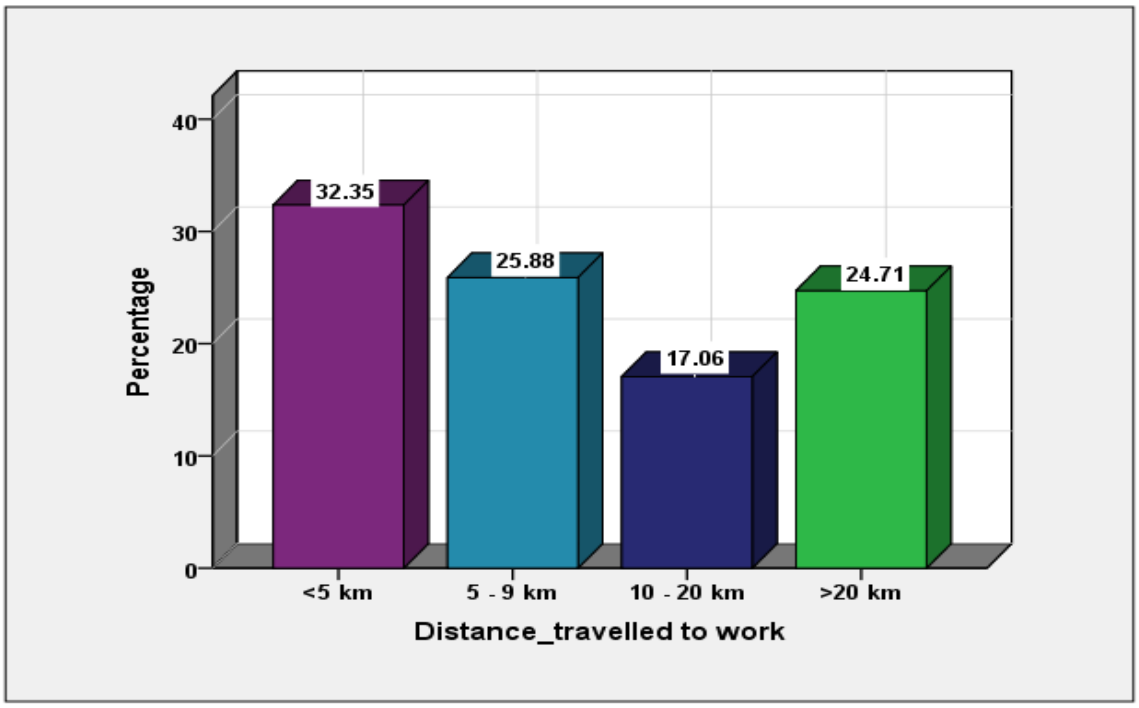

Figure 4.9: Distance travelled to work by the respondents (n=170)

4.3.10 Monthly income of the respondents

As shown in figure 4.10 below, More than half of the respondents 110 (64.71%) earned between R25 000-R35 000 per month, 49 (28.82%) earned between R15 000-R25 000, 9 (5.29%) earned more than R35 000 and 2 (1.18%) earned <R15 000 per month.

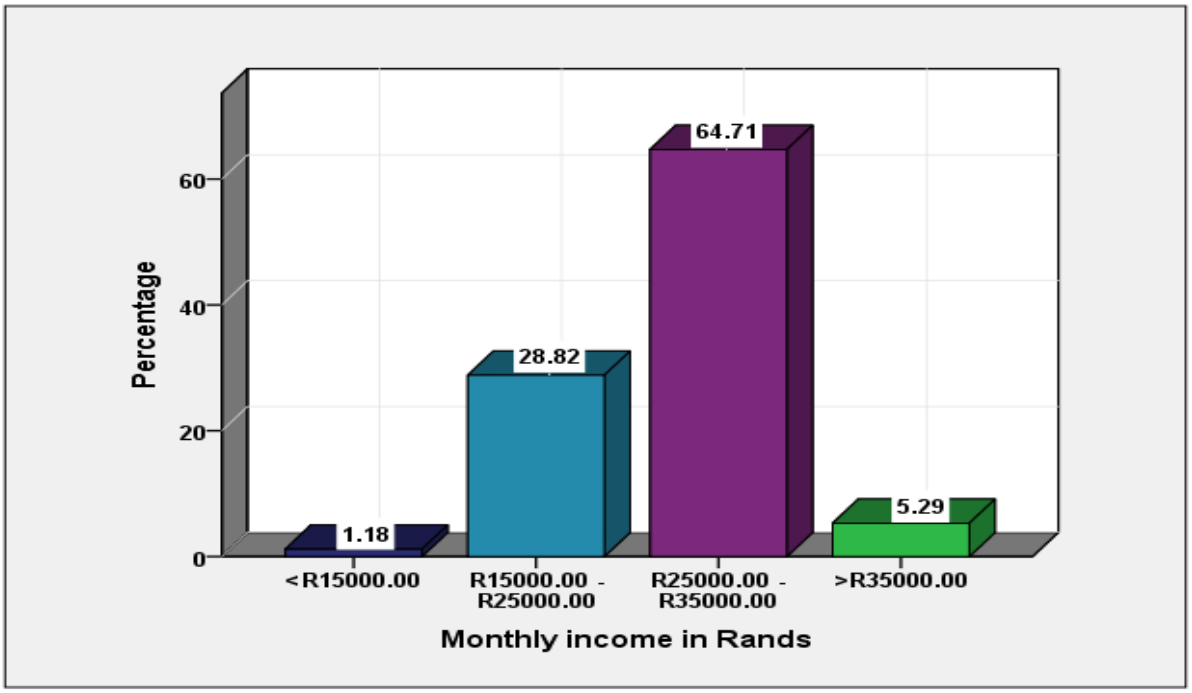

Figure 4.10: Monthly income of the respondents (n=170)

4.3.11 Associations between gender, age, marital status, educational qualifications, number of children, speciality in primary health care, working years at the rural clinic, area of upbringing, distance travelled to work, and monthly income and the intent to leave rural practice

The whole point of investigating these socio-demographics was to determine their association with the intent to stay or leave rural practice, and also to determine the core factors affecting retention. The confidence level was set at 95%.

- **Gender**

Based on the study results, from the table below, gender was found to be statistically insignificant with age (P = 0.148), marital status (P = 0.750), educational qualification (P = 0.943), number of children (P = 0.863), speciality in primary health care (P =

0.210), working years at the rural clinic (P = 0.607), area of upbringing (P = 0.621), distance travelled to work (P= 0.833), monthly income (P = 0.744) and the intent to leave rural practice (P = 0.742).

- **Age**

Age was statistically significant with marital status (P = 0.000), educational qualifications (P = 0.014), number of children (P = 0.000), speciality in primary health care (P = 0.000), working years at the rural clinic (P = 0.000), distance travelled to work (P = 0.000) and the intent to leave rural practice (P = 0.001). There was no significant relationship between age and gender (P = 0.148) and age and area of upbringing (P = 0.080).

- **Marital status**

According to the table below, there was a significant association between marital status and age (P = 0.000), educational qualifications (P = 0.024), number of children (P = 0.001), speciality in primary health care (P = 0.043), distance travelled to work (P = 0.000), monthly income (P = 0.013) and the intent to leave rural practice (P = 0.001). There was no significant association between marital status and gender (P = 0.750), working years at the rural clinic (P = 0.085) or area of upbringing (P = 0.550).

- **Educational qualifications**

Educational qualifications was statistically associated with age (P = 0.014), marital status (P = 0.024), speciality in primary health care (P = 0.017), working years at the rural clinic (P = 0.005) and monthly income (P = 0.000). There was no association between educational qualifications and gender (P = 0.943), number of children (P = 0.236), area of upbringing (P = 0.548), distance travelled to work (P = 0.344) or the intent to leave rural practice (P = 0.485).

- **Number of children**

Based on study results, there was a significant association between the number of children and age (P =0.000), marital status (P =0.001), speciality in primary health care (P =0.002), working years at the rural clinic (P =0.000), distance travelled to work (P = 0.002), monthly income (P =0.033) and the intent to leave rural practice (P =0.001). No

significant association was found between number of children and gender (P = 0.863), educational qualifications (P = 0.236) or area of upbringing (P = 0.085).

- **Speciality in primary health care**

Speciality in primary health care was statistically associated with age (P = 0.000), marital status (P = 0.043), educational qualifications (P = 0.017), number of children (P = 0.002), working years at the rural clinic (P = 0.000), area of upbringing (P = 0.000), monthly income (P = 0.000) and the intent to leave rural practice (P = 0.001). Speciality in primary health care was not statically significant.

- **Working years at the rural clinic**

Working years at the rural clinic was statistically significant with age (P = 0.000), educational qualification (P = 0.005), number of children (P =0.000), speciality in primary health care (P = 0.000), monthly income (P = 0.001) and the intent to leave rural practice (P = 0.001). There was no significant association between working years at the rural clinic and gender (P =0.607), marital status (P = 0.085), area of upbringing (P = 0.260) or distance travelled to work (P = 0.086).

- **Area of upbringing**

Area of upbringing was only significantly associated with speciality in primary health care (P = 0.000). There was statistical association between area of upbringing and gender (P = 0.621), age (P = 0.080), marital status (P = 0.550), educational qualifications (P = 0.548), number of children (P = 0.085), working years at the rural clinic (P = 0.260) distance travelled to work (P = 0.693) or monthly income (P =0.322).

- **Distance travelled to work**

Distance travelled to work was significantly associated with age (P = 0.000), marital status (P = 0.000), number of children (P = 0.000) and the intent to leave rural practice (P = 0.015). There was no significant association between distance travelled to work and gender (P = 0.833), educational qualification (P = 0.344), speciality in primary health care (P = 0.095), working years at the rural clinic (P = 0.086), area of upbringing (P = 0.693) or monthly income (P = 0.479).

- **Monthly income**

Monthly income was statistically associated with age (P = 0.046), marital status (P = 0.013), educational qualifications (P = 0.000), number of children (P = 0.033), speciality in primary health care (P = 0.000), working years at the rural clinic (P = 0.000) and the intent to leave rural practice (P = 0.039). There was statistical significance between monthly income and area of upbringing (P = 0.322) or distance travelled to work (P = 0.479).

Table 4.5: Chi-square test of independence to determine an association between socio-demographics and the intent to leave rural practice (n=170).

Items	1	2	3	4	5	6	7	8	9	10
1.Intent to leave rural practice	1									
2. Gender	0.742 1									
3. Age	0.001* 1	0.148 2								
4. Marital status	0.001* 1	0.750 2	0.000* 3							
5. Educational Qualification	0.485 1	0.943 2	0.014** 3	0.024** 4						
6. Number of children	0.001* 1	0.863 2	0.000* 3	0.001* 4	0.236 5					
7. Speciality in primary health care	0.001* 1	0.210 2	0.000* 3	0.043** 4	0.017** 5	0.002* 6				
8. Working years at the rural clinic	0.001* 1	0.607 2	0.000* 3	0.085 4	0.005** 5	0.000* 6	0.000* 7			
9. Area of upbringing	0.386 1	0.621 2	0.080 3	0.550 4	0.548 5	0.085 6	0.000* 7	0.260 8		
10. Distance travelled to work	0.015** 1	0.833 2	0.000* 3	0.000* 4	0.344 5	0.002* 6	0.095 7	0.086 8	0.693 9	
11. Monthly income	0.039* 1	0.744 2	0.046** 3	0.013** 4	0.000* 5	0.033* 6	0.000* 7	0.001* 8	0.322 9	0.479 10

*Pearson Chi-square is statistically significant at 0.01 level of significance (2 tailed).

****** Pearson Chi-square is statistically significant at 0.05 level of significance (2 tailed).

4.4 Results and interpretation of findings: section b – factors affecting or influencing the retention of rural health care workers

In this section, quantitative analysis interprets the results in the form of tables and bar graphs. The main aim was to determine the factors that influence retention of health care workers in rural practice. The data is summarised in the table below:

- **Satisfaction with salary and other benefits**

More than half of the respondents 88 (51.76%) strongly disagreed about being satisfied with their salary, 69 (40.59%) disagreed that they get overtime allowance and 59 (34.71%) disagreed to getting other fringe benefits.

- **Interpersonal relations amongst colleagues and supervisors**

Almost half of the respondents 71 (41.76%) agreed that they support each other, even with outside work-related issues, 80 (47.05%) of the respondents agreed that staff members are free to voice their concerns, 73 (42.94%) agreed that grievances are dealt with fairly, 80 (47.06%) agreed that there was team spirit amongst them as employees, and 71 (41.76%) agreed that they share a value system that keeps them in touch with the organisation.

- **Clinic infrastructure and accommodation**

Almost half of the respondents 74 (43.53%) agreed that they share small houses, more than a quarter 63 (37.06%) of the respondent agreed that the clinic building is not safe, and more than a quarter 51 (30.00%) agreed that there is poor security.

- **Opportunities for career development and promotion**

Half of the respondents 85 (50.00%) strongly agreed that there were no institutions for personal growth, and 75 (44.12%) strongly agreed that opportunities for promotions and training are scarce.

- **Availability of sports grounds, shopping centres and towns in frequencies**

Of the respondents, 73 (47.65%) strongly agreed that there were no sports grounds, with 73 (44.71%) strongly agreeing that town is far from the work area, and 73 (42.94%) strongly agreed that there are is no shopping centre.

Table 4.6 Factors affecting retention (n=170)

Variables	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Satisfaction with salary and other benefits					
Satisfaction with salary	88 (51.76%)	30 (17.65%)	17 (10.00%)	26 (15.29%)	9 (5.29%)
Overtime allowance	24 (14.12%)	69 (40.59%)	15 (8.82%)	54 (31.76%)	8 (4.71%)
Fringe benefits	33 (19.41%)	59 (34.71%)	25 (14.71%)	41 (24.12%)	12 (7.06%)
Interpersonal relations amongst colleagues and supervisor					
Team spirit	8 (3.53%)	20 (11.18%)	11 (9.41%)	80 (47.05%)	51 (34.12%)
Support outside work	6 (4.71%)	19 (11.76%)	16 (6.47%)	71 (41.76%)	58 (30.00%)
Shared value system	16 (9.47%)	26 (15.38%)	21 (12.43%)	71 (41.76%)	36 (21.30%)
Staff free to voice out concerns	15 (8.82%)	40 (23.53%)	18 (10.59%)	80 (47.05%)	17 (10.00%)
Grievances dealt with fairly	23 (13.53%)	32 (18.82%)	31 (18.24%)	73 (42.94%)	11 (6.47%)

Clinic infrastructure and accommodation					
Building not safe	37 (21.76%)	38 22.35%)	14 (8.24%)	63 (37.06%)	18 (10.59%)
Poor security system	38 (22.35%)	52 (30.59%)	13 (7.65%)	51 (30.00%)	16 (9.41%)
Small rooms for accommodation	11 (6.47%)	21 (12.35%)	21 (12.35%)	74 (43.53%)	43 (25.29%)
Opportunities for promotion and career development					
Promotion opportunities	15 (8.82%)	18 (10.9%)	17 (10.00%)	45 (26.47%)	75 (44.12%)
Institutions for carer development	20 (11.76%)	11 (6.47%)	10 (5.88%)	44 (25.88%)	85 (50.00%)
Availability of sports grounds, shopping centre and town					
Availability of sports ground	11 (6.47%)	5 (2.94%)	3 (1.76%)	70 (41.18%)	81 (47.65%)
Availability of shopping centre	11 (6.47%)	17 (10.00%)	6 (3.53%)	63 (37.06%)	73 (42.94%)
Town far from the work area	10 (5.88%)	4 (2.35%)	17 (10.00%)	63 (37.06%)	73 (44.71%)

4.4.1 Association between factors affecting retention and the intent to leave rural practice

The aim of the study was to determine whether factors affecting retention were significant. The results of chi-square analyses between factors influencing retention are indicated.

4.4.1.1 Salary satisfaction and other benefits

Based on study results, salary satisfaction was found to be significantly associated with the intention to leave rural practice (P = 0.024). Overtime allowance (P = 0.617) and fringe benefits (P = 0.541) were statistically not significant. The questions had an internal consistency of 0.731.

Table 4.7: Salary satisfaction and other benefits (n=170)

Salary satisfaction and other benefits	P-value	Chronbach's Alpha
Salary satisfaction	0.024**	
Overtime allowance	0.617	**0.731**
Fringe benefits	0.541	

* Pearson Chi-square is statistically significant at 0.01 level of significance (2 tailed).

****** Pearson Chi-square is statistically significant at 0.05 level of significance (2 tailed).

4.4.1.2 Interpersonal relations amongst colleagues

Based on the table below, there was a statistical significance between the intent to leave rural practice and support outside work (P = 0.031), that staff are free to voice concerns (P = 0.020) and that grievances are dealt with fairly (P = 0.001). Team spirit (P = 0.172) and a shared value system (P = 0.437) were statistically not significant. As determined by Chronbach's Alpha, the questions had an internal consistency of 0.715.

Table 4.8: Interpersonal relations amongst colleagues (n=170)

Interpersonal relations amongst colleagues	P-value	Chronbach's Alpha
Team spirit	0.172	**0.715**
Support outside work	0.031**	
Shared value system	0.437	
Staff free to voice outside concerns	0.020**	
Grievances are dealt with fairly	0.001*	

*Pearson Chi-square is statistically significant at 0.01 level of significance (2 tailed).

****** Pearson Chi-square is statistically significant at 0.05 level of significance (2 tailed).

4.4.1.3 Clinic infrastructure and accommodation

It was revealed that there is a statistical significance between the intent to leave rural practice and poor security (P = 0.022), and small rooms (P = 0.006). There was no statistical significance between the intent to leave rural practice and poor clinic infrastructure (P = 0.371). The questions had an internal consistency of 0.671, as determined by Chnrobach's Alpha.

Table 4.9: Clinic infrastructure and accommodation (n=170)

Clinic infrastructure and accommodation	P-value	Chronbach's Alpha
Poor clinic infrastructure	0.371	**0.671**
Poor security	0.022**	
Small rooms	0.006**	

*Pearson Chi-square is statistically significant at 0.01 level of significance (2 tailed).

****** Pearson Chi-square is statistically significant at 0.05 level of significance (2 tailed).

4.4.1.4 Opportunities for promotion and career development

As illustrated by the table below, intent to leave rural practice was statistically associated with scarce opportunities for promotion (P = 0.016) and no near institutions for studying (P =0.001). The questions had an internal consistency of 0.631.

Table 4.10: Opportunities for promotion and career development (n=170)

Opportunities for promotion and career development	P-value	Chronbach's Alpha
Opportunities for promotion	0.016**	
No near institutions for studying	0.001**	**0.631**

*Pearson Chi-square is statistically significant at 0.01 level of significance (2 tailed).

****** Pearson Chi-square is statistically significant at 0.05 level of significance (2 tailed).

4.4.1.5 Availability of sports grounds, shopping centres and towns

Based on the study results, the intent to leave rural practice was significantly associated with there being no sports grounds (P = 0.048) and that the town is far from the work area (P = 0.039). There was no statistical significance between the intent to leave rural practice and there being no shopping centres (P = 0.055).

Table 4.11: Availability of sports grounds, shopping centres and towns (n=170)

Availability of sports grounds, shopping centre and town	P-value	Chronbach's Alpha
Availability of sports grounds	0.048*	
No shopping centre	0.055	**0.625**
Town far from work area	0.039*	

*Pearson Chi-square is statistically significant at 0.01 level of significance (2 tailed).

****** Pearson Chi-square is statistically significant at 0.05 level of significance (2 tailed).

4.4.2 Workload (n=35)

Though the 35 clinics differ in the number of professional nurses and the number of patients seen per day, the results were analysed in one to make predictions of the workload of the rural clinics of the Capricorn District.

4.4.2.1 Number of professional nurses per clinic

Of the 35 clinics which participated in the study, 15 (42.86%) had >4 professional nurses, 12 (34.29%) had 4 professional nurses, and 8 (22.86%) had 3 professional nurses.

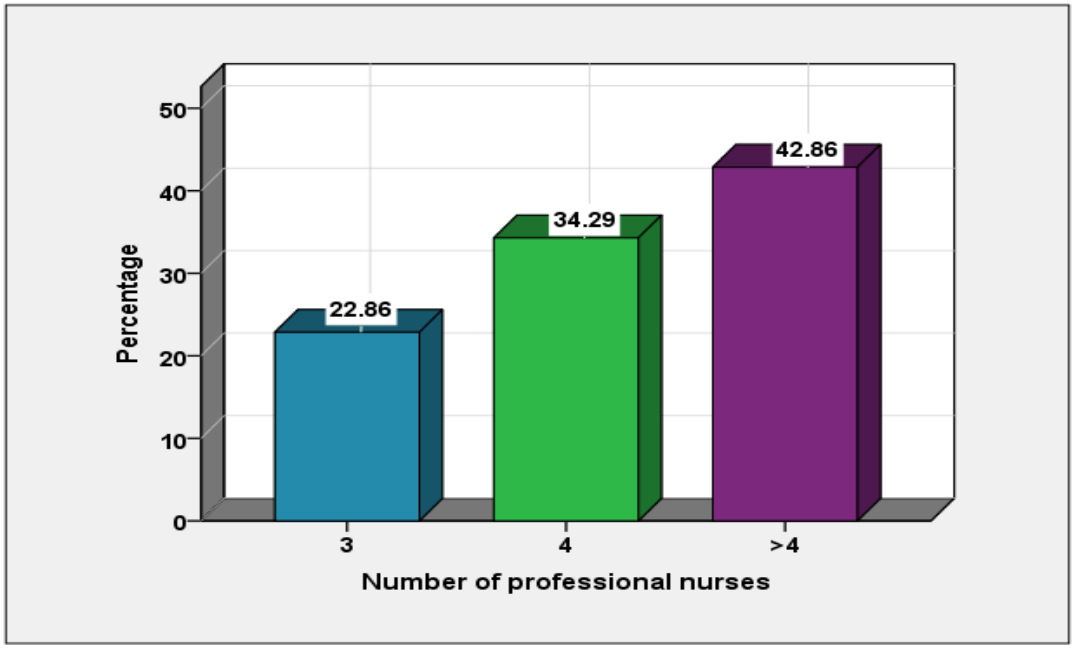

Figure 4.11: Number of professional nurses per clinic (n=35)

4.4.2.2 Number of patients seen per day per clinic

More than half of the 35 clinics 18 (51.43%) see between 100-150 patients a day, 4 (11.43%) of the 35 clinics see <100 patients a day, 12 (34.29%) see 150-200 patients and 1 (2.86%) sees more than 200 patients per day.

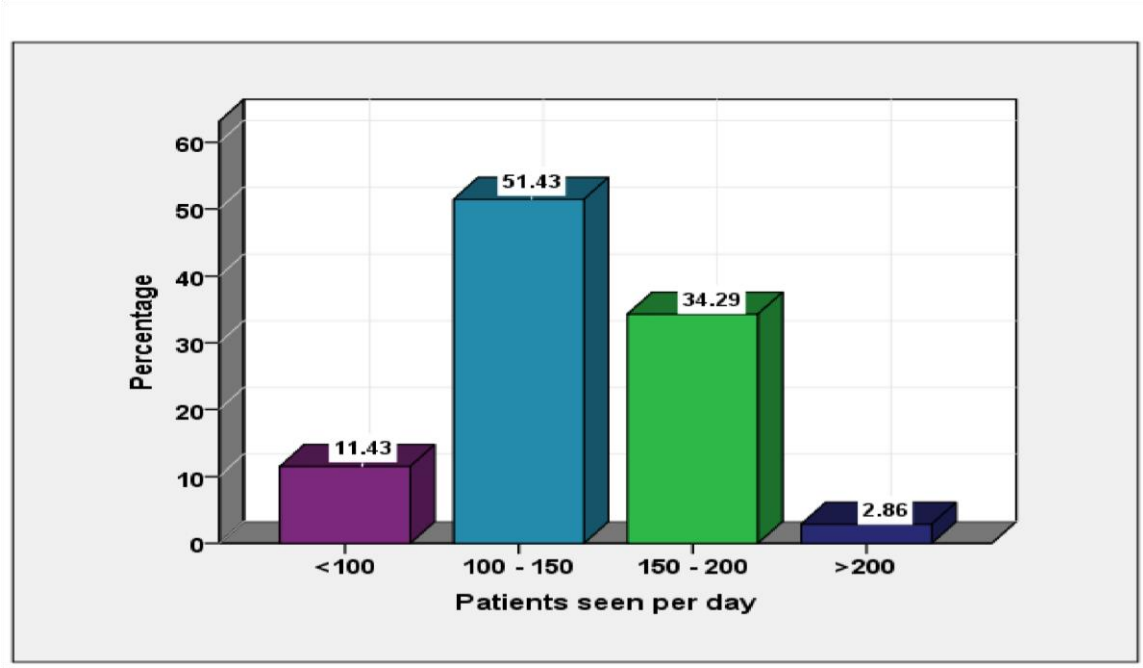

Figure 4.12: Number of patients seen per day in a clinic (n=35)

4.4.2.3 Nurse patient ratios

Based on study results from figure 4.13 below, more than half of the 35 clinics 18 (51.43%) have a nurse patient ratio of 1:50-100 and almost half 17 (48.57%) have a nurse patient ratio of 1:25-50.

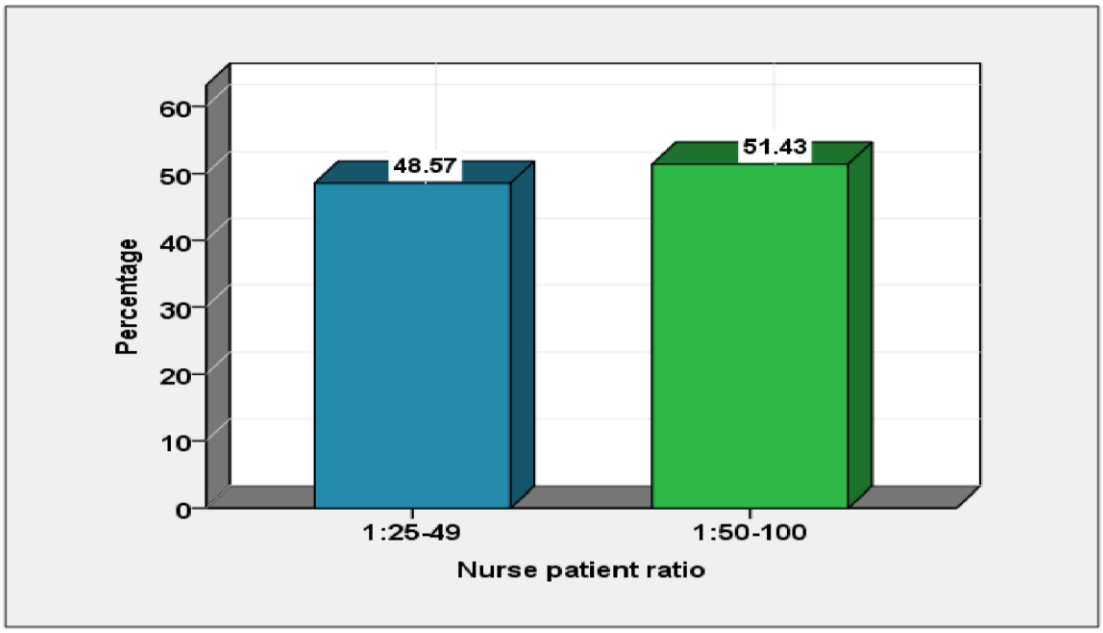

Figure 4.13: Nurse patient ratio (n=35)

4.4.2.4 Short course training received by the professional nurses in clinics

Based on study results below, almost all of the respondents 142 (83.52%) were trained on PMTCT, 141 (82.94%) were trained on HIV Testing & Counselling, 139 (81.76%) were trained on TB management, 136 (80.00%) were trained on NIM HAART, 132 (77.64%) were trained on IMCI and over half 105 (61.76%) were trained on couple counselling. The scale had a high internal consistency as determined by a Chronbah's Alpha of 0.803

Table 4.12: Short courses training received (n=170)

Short courses	Yes F (%)		No F (%)	
HIV testing counselling	141	82.94%	29	17.05%
IMCI	132	77.64%	38	22.35%
Couple counselling	105	61.76%	65	38.23%
TB management	139	81.76%	31	18.23%
NIMART	136	80.00%	34	20.00%
PMTCT	142	83.52%	28	16.47%

4.5 Results and interpretation of findings: section c – the intention to leave rural practice.

To determine whether the problem of migration and staff shortages in rural areas will persist, the question was answered by this section. More than half 90 (52.94%) of the respondents intended to leave rural practice and only 80 (47.06%) did not wished to relocate in the near future.

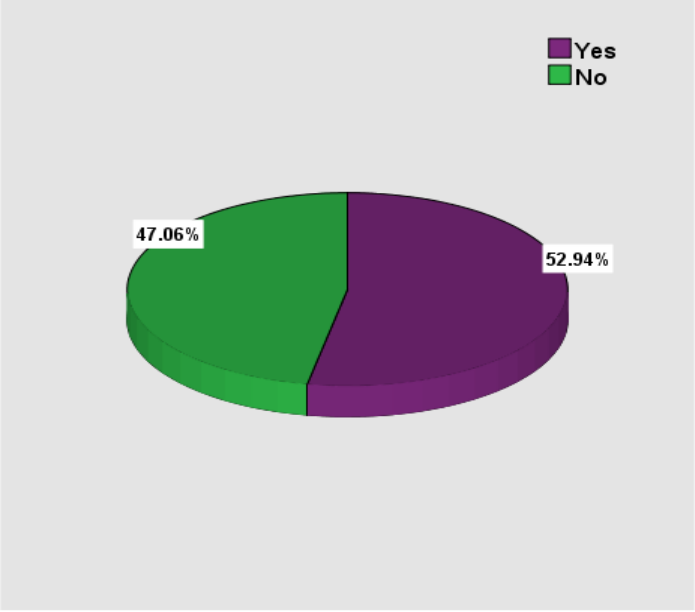

Figure 4.14: The intent to rural practice (n=170)

4.5.1 Main reasons for leaving rural practice

Although factors influencing retention were identified in the previous section, the main reasons for wanting to leave rural practice had to be determined.

Of the 90 respondents who wished to relocate, most of the respondents 35 (38.88%) indicated pay as the main reason for them wanting to leave rural practice, while 26 (28.88%) indicated that that there was a lack of promotion in rural practice. Furthermore, 10 (11.11%) of the respondents indicated that the rural allowance was not enough and that study leave was granted based on favouritism. Only a few respondents 6 (6.66%) stated the reason for leaving rural practice was due to poor clinic infrastructure, 5 (5.55%) indicated that there were no good schools for children and only 1 (1.11%) indicated that the rural allowance was not enough.

Table 4.13: Reasons for migrating (n=90)

Main reason for leaving rural practice	Percentage	Frequencies
Rural allowance not enough	10%	9
No good schools for children	5.55%	5
Lack of opportunities for promotions	28.88%	26
Study leave are granted after many years of service	11.11%	10
No allowances for overtime	1.11%	1
Poor clinic infrastructure	6.66%	6
Salary not enough	36.66%	33

4.5.1.1 Reasons for leaving rural practice and age distribution cross-tabulation

Of those who intended to leave rural practice, 6 (31.57%) aged < 30 years, 15 (60%) aged between 30-39 years and 8 (34.78%) aged 40-49 years wanted to leave rural practice because the salary was not enough as compared to work they do. One (100%) of those aged above 60 years, 11 (47.82%) of those between 40-49 years, and 5

(26.31%) aged <30 years wanted to leave rural practice because there is a lack of opportunities for promotion. Only a few 6 (27.27%) of those aged between 50-59 years, 2 (8%) of those aged between 30-39 years, and 1 (5.26%) of those aged <30 years wanted to leave rural practice because study leave is only granted after many years of service.

Table 4.14: Reasons for leaving rural practice and age distribution cross-tabulation (n=90)

Age in years	Reasons for leaving rural practice							Total
	Rural allowance not enough	There are no good schools for children	There is lack of opportunities for promotions	Study leave are granted after many years of service	There are no allowances for overtime	There is poor clinic infrastructure	Salary if not enough compared to the work I do	
<30	4 (21.05%)	0 (0%)	5 (26.31%)	1 (5.26%)	0 (0%)	3 (15.78%)	6 (31.57%)	19
30-39	2 (8.00%)	0 (0%)	4 (16.00%)	2 (8.00%)	0 (0%)	2 (8.00%)	15 (60%)	25
40-49	1 (4.34%)	1 (4.34%)	11 (47.82%)	1 (4.34%)	0 (0%)	1 (4.34%)	8 (34.78%)	23
50-59	2 (9.09%)	4 (18.18%)	5 (22.72%)	6 (27.27%)	1 (4.54%)	0 (0%)	4 (18.18%)	22
>60	0 (0%)	0 (0%)	1 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1
Total	9 (10%)	5 (5.55%)	26 (28.88%)	10 (11.11%)	1(1.11%)	6 (6.66%)	33 (36.66%)	90

4.6 Results and interpretation of findings: section d – strategies to improve the retention of rural health care workers

A questionnaire was employed to determine strategies the professional nurses thought should be employed to retain rural health care workers. The scale had a high internal consistency as determined by a Chronbah's Alpha of 0.830.

Almost all of the respondents 164 (96.47%) indicated that understaffing should be alleviated, 163 (95.88%) of the respondents indicated that the financial position of nurses should be improved, that the financial position for professional nurses should be improved and that career progression should be ensured. Most respondents 157 (92.35%) also stated that study leave should be granted, and 154 (90.58%) indicated that recreational facilities should be provided.

Table 4.15: Strategies to retain rural health care workers (n=170)

Strategies to improve retention of rural nurses	Yes F (%)		No F (%)	
Improving clinic accommodation	153	90.00%	17	10.00%
Granting study leaves	157	92.35%	13	7.64%
Improving physical infrastructure	146	85.88%	24	14.11%
Increasing of nurses salary	163	95.88%	7	4.17%
Strengthening relations between the community and nurses	145	85.29%	25	14.70%
Having clinic visits from the multidisciplinary team	151	88.82%	19	11.17%
Ensure career progression for nurses	163	95.88%	7	4.17%
Alleviate understaffing	164	96.47%	6	3.52%
Provide recreational facilities	154	90.58%	16	9.41%

4.7 Conclusion

Chapter 4 showed results on socio-demographics, which included gender, age, marital status, educational qualifications, speciality in primary health care, working years at the rural clinic, area of upbringing, distance travelled to work and monthly income. Furthermore, results on factors affecting retention were interpreted under the following headings: salary satisfaction and other benefits, relationships with colleagues, clinic infrastructure and accommodation, opportunities for promotion and career development and availability of sports grounds, shopping centres and towns. Results on the intent to leave rural practice, the main reasons for leaving rural practice, and strategies to improve retention were also presented and analysed. The study results are discussed in the following chapter.

Chapter 5

Discussion of results

5.1 Introduction

This chapter discusses the findings of the study. The primary objective of this study was to determine the factors affecting the retention of rural health care workers in order to develop strategies to retain rural nurses. Study results will be substantiated using reviewed literature and the theoretical framework used in the study.

The Herzberg Theory is a two-factor theory that states factors that cause job satisfaction and job dissatisfaction in the workplace. Motivating factors include achievement, recognition for contribution, the work itself, responsibility, and career development and advancement, which leads to job satisfaction. Job dissatisfaction factors, also called “hygiene factors” include: institutional policies and administration, supervision, interpersonal relationships with supervisor and colleagues, working conditions, salary levels, status and security (Herzberg, 2003).

5.2 Discussion

5.2.1 Socio-demographic data

- **Gender of the respondents**

The entire staff structure of the 35 clinics that participated in the study showed that there are more female nurses than male nurses. Of the respondents, 156 (91.76%) were females as shown in (figure 4.1). This is not surprising as it is a known fact that nursing is a female dominated profession. The study further showed that there was no significant difference between males and females regarding their intent to leave rural practice. However, Sochalski (2002) argues that men resign from nursing more than women due to the belief that it is a “feminine” profession, resulting in staff shortage due to the gap they leave which is not filled by anyone. However, more males should be recruited into the profession so that there can be a balance between men and women in nursing to avoid bias and to ensure equity.

- **Age of the respondents**

In this study, it was observed that age has an influence on one remaining in rural practice and was found to be one of the major factors affecting rural nurse retention. Based on the study results, 50% of the respondents were aged between 50-59 years (figure 4.2). It can then be suggested that nursing comprises of an ageing and stable workforce because the older nurses intended to remain in rural clinics as compared to the younger professional nurses. However, these results differs from the South African Nursing Counsel (SANC) registry statistics which show that 30% of registered nurses are between 50-59 years (South African Nursing Council, 2017).

The results of the study are in agreement with Noufa and Maye (2013) who reported that older nurses are more satisfied with rural practice than the younger nurses because they hold senior positions and thus stay longer in rural areas. El-Jardali et el., (2013) emphasises that more focus should be given to new graduates and younger nurses because veterans will retire in the next 5-10 years, leaving a serious gap that may take time to be filled.

- **Marital status**

Marital status is an important factor as it may influence the nurse's decision to remain in rural practice, and in this study it was significantly associated with retention (P = 0.001). As shown in figure 4.3, 97 (57.06%) of the respondents were married and 22.35% were still single. Additionally, of those who intended to leave rural practice, as shown in table 4.2, the majority 33 (82.50%) were single. This is an indication that when one is single, they are not really settled and more often than not, still want to explore without anything restricting them, hence affecting retention.

These results are in agreement with a study done by Noufa and Maye (2013) in Saudi Arabia on factors affecting retention. They found that married nurses intended to stay in rural practice for longer than single nurses due to the restrictive social nature in rural areas.

- **Educational qualifications**

The study results shown in figure 4.4 revealed that most of the respondents 112 (65.88%) had a diploma in nursing, with a few holding a degree or master's degree indicating that there are slighter opportunities for studying in rural areas. The study results indicate that educational qualifications negatively correlated with salary, indicating that the salary level remains low even if one acquires more education (P = 0.000) (table 4.4). This can be explained by suggesting that highly educated nurses do not opt to work in rural areas.

The results of the study are congruent with a cross-sectional survey in Turkey on job satisfaction and the intention to quit, which revealed that nurses with masters' degrees intended to leave rural practice due to inadequate opportunities and financial benefits from the organisation (Muhammad, Azad, Hoque, Beh, Wanke & Arslan, 2016). This is further endorsed by Hayes (2006) who states that highly educated nurses are likely to leave rural nursing for greener pastures. On the contrary, according to Herzberg (2003), education is a true motivator, it is an engine inside a person that makes them do better in their work and results in retention.

- **Speciality in post graduate diploma in primary health care**

Based on the study findings shown in figure 4.5, more than half 108 (63.53%) of the respondents had a postgraduate diploma in Primary Health Care. Additionally, it was revealed (table 4.3) that having a speciality in primary health care affected retention, as 72 (64.86%) of those with the speciality did not intend to leave rural practice, with 51 (86.44%) of those without the speciality intending to leave rural practice. The results indicate that developing the professional nurses professionally might lead to retention.

Van Leuven (2014) states that there is a need to prepare the future generation of nurses by training them in primary health care in order to meet health needs of the population. The primary health care specialised discipline encompasses a broad set of skills, knowledge and autonomy and every professional nurse in clinics should have a speciality in it (Cooke, Couper & Versteeg, 2011). This is in agreement with the Herzberg theory, which states that employees should be granted authority and responsibility in order to retain them.

- **Number of children**

The number of children a nurse has plays an important part in rural nurse retention. Parents always want what is best for their children, concerning good education and social stimulation, which rural areas usually lack, making them leave rural areas to urban areas for better conditions. Of the 170 respondents, 49 (28.82%) had 1 child, and 47 (27.65%) had more than 3 children (figure 4.6).

The results in table 4.5 indicate that there is an association between the number of children and the intention to leave rural practice (P = 0.001). In agreement with these results, a qualitative study on the factors influencing the retention of doctors and nurses at rural health care facilities in Bangladesh, it was shown that lack of good schools for children contributes to health workers wanting to leave rural practice for urban areas for better conditions (Darkwa, Newman, Kwab & Chowdhury, 2015).

- **Working years at the rural clinic**

The results revealed that more than half 88 (51.76%) of the respondents had less than ten years at the rural clinics (figure 4.7). These results are of concern as to why nurses don't stay more than 10 years in these clinics, and may be an indication of high levels of job dissatisfaction.

A case study conducted by Van Dormael, Dugas, Kone, Coulibaly, Sy, Marchal and Desplas (2008) on retention of rural health workers discovered that retention is based on the working and living experience of the employee in the working environment and if it is not favourable they tend to leave. According to Herzberg (2003), if there is job dissatisfaction in the workplace employees leave, thus employers should make sure that there is no job dissatisfaction.

- **Area of upbringing**

The results of this study show that 125 (73.53%) of the respondents were raised in rural areas and still decided to work in rural clinics (figure 4.8). Furthermore, there is no difference in the intention to leave rural practice between those brought up in rural or urban areas (P = 0.386).

Where one was raised can play a significant role in rural nurse retention. When an individual was raised in a rural area, after completion of studies, they tend to work and stay in urban areas for better conditions, especially the younger ones, thus affecting retention. Supporting the findings of this study, Henderson-Betkus and MacLeod (2004) state that wanting to raise a family in a rural area and choosing a posting in a rural area is considered a personal choice and being raised in a rural area has got nothing to do with one accepting a post in a rural health care institution.

However, findings of another study done in Queensland conflicts with these findings, indicating that a predictor for retention is the rural background of the healthcare worker and/or positive work experiences in rural areas (Hegney et al., 2002b; Viscomy, Larkins & Gupta, 2013).

- **Distance travelled to work**

Of the 170 respondents, 55 (32.35%) where travelling less than 5km to work (figure 4.9), and mostly stayed at the nurses home This might suggest that the professional nurses were more likely to be working far from their spouses and children increasing their intent in leaving rural practice. In a quantitative study done by Haskins, Phakathi, Grant and Horwood (2017) about factors affecting recruitment and retention of professional nurses, doctors and allied health professionals it was discovered that health care professionals staying away from home are more likely to leave rural practice to be close to their families.

- **Monthly income**

More than half 110 (64.71%) of the respondents earned between R25 000-R35 000 (figure 4.10). Working in a rural clinic where the majority of the population resides and still getting paid the same salary as nurses in an urban clinic with a lighter workload, increases the rate of migration. Thus, salaries should be weighted in accordance with workload. Hence, in a developing country such as South Africa, nurses have lower salaries, possibly making remuneration a potentially powerful strategy for attracting and retaining health workers in rural areas (Mathauer and Imhoff, 2006).

The current study further showed that there is an association between monthly income and the intention to leave rural practice (table 4.5). However, Herzberg (2003) argues that increasing of salaries can retain employees but not long-term. This is supported by Wilmot (2016) indicating that increasing of wages for rural nurses in South Africa has not made any difference.

5.2.2 Factors affecting the retention of rural nurses

Factors affecting retention will be discussed under the following sub-headings:

- **Satisfaction with salary and other benefits**

Financial incentives can affect retention and has been used in South Africa to retain and motivate professional nurses, not only in rural areas, through the implementation of the OSD and introduction of a rural allowance (South African Nursing Council, 2013). As illustrated in table 4.6, more than half 118 (87.06%) of the respondents were dissatisfied with their salary, and 93 (54.71%) agreed that there was non-payment of overtime in their clinics. Furthermore, 92 (54.12) of the respondents were dissatisfied with the fringe benefits they get. Additionally, salary satisfaction was significantly associated with the intent to leave rural practice (P = 0.024) (table 4.7) and 95.88% of the professional nurses indicated that increasing of salaries might improve retention (table 4.15).

However, if nurses' salaries were structured before and they still remain dissatisfied, will increasing of salaries retain professional nurses in rural areas or is there more to this salary issue?

Herzberg (2003) maintains that money can only be used to decrease job dissatisfaction but cannot help to create job satisfaction or a high level of performance, which results in retention. In a study done by Kwanash, Dzodzomenyo, Mutumba, Asabir, Koomson, Gyakobo, Agyei-Baffour, Kruk and Snow (2012) in Ghana about incentives for rural service among nurses, it was found that, although financial incentives were important, it was not the most important factor associated with retention of nurses.

Workload

- ### Number of professional nurses per clinic

The approved staffing level for professional nurses/midwives is five (5) per clinic (Uys & Klopper, 2013). The majority of the 35 rural clinics maintained the approved staffing level of more than 4 professional nurses, which is good; however, the number of patients seen per day should be considered (figure 4.11).

Lea and Cruickshank (2007) conducted a qualitative study of experienced nurses in New Wales and it was discovered that nurses in rural clinics work where there are limited health care professionals which often results in them being a ‘jack of all trades’, which means working in all areas and sometimes working beyond their scope of practice.

- ### Patients seen per day

Almost all of the clinics use the super market approach were by antenatal care, postnatal care, chronic illness reviews, immunizations and minor ailments treatments are done every day at the clinic without having specific dates for certain services with the minimal staff available, which increases workload and therefore job dissatisfaction.

According to De Vries and Reid (2003), nurses face challenges such as having a greater burden placed on them by larger communities that typically depend on fewer nurses to meet all of their health needs. Similarly, Manyisa, Elsie, and Aswegen (2017) indicate that workload is a predictor of retention. An increased workload starts by causing stress and fatigue and thereafter burnout, resulting in migration.

- ### Nurse-patient ratio

Though the ratio may differ per clinic, it is evident that professional nurses are over worked because the ratio exceeds the WHO’s minimum standard ratio for clinics, which is 1 professional nurse for every 50 clients (WHO, 2010). In primary health care, thorough examination of patients is required in order to make correct diagnoses and to provide correct treatment.

- **Interpersonal relations amongst colleagues and with supervisors**

The majority of respondents 131 (75.88%) agreed that there was team spirit, 129 (77.06%) agreed that they support each other outside of work related issues, (106; 62.72%) also agreed that they have a shared value system, 97 (57.06%) agreed that they are free to voice concerns, and 84 (49.41%) agreed that grievances are dealt with fairly (table 4.6). It is good when nurses become one, as it requires teamwork for them to successfully provide service delivery to patients. Herzberg (2003) argues that good relationships in the workplace but the relationship of the employee with the supervisor, colleagues and subordinates should be appropriate, that friendships should remain outside of the workplace.

Furthermore, the study results revealed that staff supported each other outside of work related matters (P = 0.031), that staff members were free to voice concerns (P = 0.020) and that grievances being dealt with fairly (P = 0.001) were significantly associated with the intent to leave rural practice (Table 4.8) and the respondents were likely to stay in rural practice. Neuhauser (2002) emphasises that in order to successfully retain employees, the organisational culture should allow health workers to voice concerns and should inspire team work. Conferring with Herzberg (2003), the supervisor should involve subordinates in decision making and also give them some degree of autonomy. A manager should not be autocratic, thus, Herzberg further indicates that managers should minimise control over employees but should retain accountability.

- **Clinic infrastructure and accommodation**

Based on the study results, the majority 117 (68.82%) of the respondents agreed that they share small rooms, which may imply that their living conditions are not conducive for a family setting. In rural work settings, safety is an important aspect, and 117 (68.82%) respondents stated that there is poor security, while 91 (47.65%) agreed that the clinic buildings are not safe (table 4.6).

These results indicate that the work environment is neither comfortable nor safe and might not improve retention in the rural clinics. Though Herzberg states that working

conditions does not contribute much when dealing with retention, Herzberg still believes that the work environment should be clean and safe, and hazards should be eliminated (Herzberg, 2003).

- **Opportunities for promotion and career development**

Based on study findings, 129 (75.88%) respondents indicated that there are no institutions for personal growth in rural settings and 120 (70.59%) stated that there are no opportunities for promotions (table 4.5). It was further shown that intention to leave rural practice was significantly associated with opportunities for promotion (P = 0.016) and the fact that there are no near institutions for studying (P = 0.001) (table 4.10).

The study results indicate that developing professionally can improve retention, this confirms Herzberg theory indicating that there must be promotional opportunities in order to enhance growth (Herzberg, 2003). This also concurs with the WHO (2010) statement that health care professionals should be continually trained and study leave should be granted for professional and career growth.

Furthermore, in a literature review done by Health Education England (2014) on growing nursing numbers, it was reported that highly educated health workers are more likely to leave rural practice if there are limited opportunities for growth in their current organisation. Similarly, in a cross-sectional descriptive design of 45 respondents in Kenya on factors influencing retention, it was found that healthcare workers intended to move to urban areas where there are institutions for furthering education (Bardad, 2017).

- **Training received**

According to a WHO report in 2013, in order to achieve universal health coverage a well-trained and competent health staff is required (WHO, 2013). This could be achieved through training and workshops in order to enhance professional growth. Based on the study findings illustrated in table 4.12, the professional nurses were mostly trained on HIV/AIDS and TB management.

It is good when training is provided, but questionable when it is unsure whether the professional nurses are trained for professional growth or because of the HIV pandemic in South Africa. According to Msuya, Blood-Siegfired, Chugulu, Kidayi, Sumaye, Machange, Mtuya and Pereira (2017), nurse practitioners are usually formally trained on HIV/AIDS and TB management in order to meet specific needs of the healthcare system. In support of this, Van Rensburg (2014) states that South Africa is facing epidemic proportions of HIV and TB, resulting in increased health care needs, especially in rural areas, thus accelerating the human resource crisis.

- **Availability of sports grounds and towns around the work area**

Based on the study results, 151 (88.83%) respondents agreed that there are no sports grounds around most of the rural clinics for recreational purposes. With regards to most of the clinics, 136 (81.77%) of the respondents stated that clinics were situated far from towns or major cities (table 4.6).

Though these factors have not been given much attention in rural retention because they seem not have a major impact, they are of paramount importance. Professional nurses who are married might have a problem when working in rural clinics because when their families visit, children need stimulating places and would sometimes need to go out. This is endorsed by Mbemba, Gagnon, and Brabant (2016) indicate that social factors do play a role in rural nurse retention and the working environment should be family friendly and recreational facilities should be provided.

5.2.3 The intention to leave rural practice

Of the 90 (52.94%) respondents intending to leave rural practice, 19 (100%) were aged between <30 years, and 25 (89.28%) of those were aged between 30-39 years (table 4.1). These results are disturbing because the younger generation are the future of the health care system and their retention is important. Similarly, in a non-experimental cross-sectional study involving 103 health facilities in Lebanon on nurses' retention in healthcare facilities in underserved areas, the study revealed that nurses who wished

to relocate were younger nurses (El-Jardali et al., 2013). According to Herzberg (2003), job satisfaction does influence an employee's decision to leave an organisation.

5.2.3.1 Main reasons for leaving rural practice

Of the respondents who wished to leave rural practice, 33 (36.66%) indicated that the salary was not enough compared to the work they do, and 26 (28.88%) stated that there are no opportunities for promotion (table 4.14). Furthermore, table 4.13 revealed that 15 (60%) of those aged between 30-39 years and 6 (31.57%) of those aged <30 years intended to leave rural practice due to the salary not being enough compared to the work they do. It is therefore evident that young nurses were dissatisfied with salary.

This is reinforced by WHO's estimates indicating that about 40% of nurses will leave the profession in the next decades due to workload and low pay (WHO, 2013). Though Herzberg (2003) argues that increasing of salaries is a short-term strategy, Herzberg also believes that the salary structure should be appropriate and reasonable. Herzberg (2003) upholds that money can be used to ensure that there is no dissatisfaction but cannot cause job satisfaction.

5.2.4 Strategies to improve the retention of rural health care workers

According to the study results, 164 (96.47%) of the respondents indicated that alleviating of understaffing, and 163 (95.88%) stated that increasing salaries for primary health care nurses are important strategies to retain rural nurses (table 4.15). According to WHO (2010), nurses who accept rural postings should be paid a higher salary. Although this strategies seem to be important, other strategies should not be overlooked because it is not always about money. Mathauer and Imhoff (2006) also indicate that implementing it as a stand-alone intervention often has limited impact, therefore, it should be combined with non-financial incentives (Mathauer & Imhoff, 2006).

5.3 Conclusion

Chapter 5 discussed the study results on socio-demographics, factors affecting retention of nurses, intention to leave rural practice, reasons for leaving rural practice and strategies to improve retention in depth. The conclusion and the strategies developed are discussed in the following chapter**.**

Chapter 6

Summary, conclusion, strategies, limitation, and recommendations

6.1 Introduction

This chapter draws a summary, conclusion, strategies, limitations, and recommendation for the research conducted. The recommendations and developed strategies for this are based on the findings discussed in the previous chapter and describe the developed strategies. The limitations experienced during the period of the whole study are presented.

6.2 Research methodology

A quantitative approach which was descriptive in nature was used to determine and describe factors affecting the retention of health care workers in rural clinics in order to develop strategies to improve retention of rural health care workers. The study was conducted in rural clinics of the Capricorn District, Limpopo Province. The population of the study was professional nurses and operational managers in rural clinics. The population size was 210 professional nurses and operational managers, however only 170 participated in the study.

Thirty-five clinics were sampled from the LepelleNkumpi, Molemole and Aganang municipalities. Data was collected using a selfadministered questionnaire consisting of 4 sections and 35 questions. Data was analysed using SPSS and presented in the form of tables, pie charts and graphs. Permission to conduct the study was obtained from TREC, Limpopo Department of Health, Capricorn District PHC acting manager, operational managers and professional nurses in charge of the clinics.

6.3 Findings of the study

The study revealed that age and having a speciality in primary health care played a major role in rural nurse retention. The clinics comprised of an ageing workforce with

half of the respondents aged between 50-59 years. More than a half of the respondents were not satisfied with their salaries and other financial benefits obtained. Furthermore, 52.94% of the respondents were willing to leave rural practice and indicated that the salary is not enough compared to the work they do. In addition, factors such as having a town near the workplace and having recreational facilities were revealed to have an impact on retention of nurses.

6.4 Conclusion

There is a complex of interconnecting factors that affect retention. It was shown that age, having and not having a speciality in primary health care does play a major role in one remaining in rural practice. It is concluded that both financial incentives and non-financial incentives such as education, improving working conditions, availability of recreational facilities and relationship with colleagues needs to be incorporated in order to improve nurse retention. Rural health care workers are the backbone of the health system, hence their needs should come first.

6.5 Recommended strategies

According to Drewniak (2010), strategic planning is of importance when dealing with a shortage of human resources, and should be an ongoing process to ensure the delivery of high and quality care to communities. Rural clinics keep losing talented employees, thus leaving a gap in the workforce and jeopardising the health of the communities. Strategies and the succession plan for the Department of Health are outlined below.

6.5.1 Recommended strategies to improve retention of health care workers in rural clinics

The following strategies were developed based on the study results, literature reviewed and in relation to the Herzberg Theory:

- **Education and training**

The study revealed that professional nurses who had a master's degree did not opt to work in rural areas and this might mean that their qualifications are meaningless in rural areas. Furthermore, the study showed that most of the professional nurses had less than 10 years working at the present rural clinics, indicating that there is a high rate of migration in these rural clinics. Similarly, in an empirical analysis conducted by Muhammed, Kalam, Beh, Wanke, and Ozgun (2016) in Turkey on job satisfaction and the intention to quit, it was found that nurses with a master's degree had a greater intention to leave rural nursing practice than others because of inadequate opportunities and benefits from the current organisation.

In this context,

- The regulating body should recognise and motivate for the payment of qualifications for professional nurses (Bcur, masters, etc.) and provide them with opportunities in the work environment to efficiently use their knowledge and skills through giving them tasks related to their qualifications.

The study has shown that older professional nurses had a postgraduate diploma in primary healthcare than the younger nurses who are the future of the healthcare system. Moreover, the study revealed that age and having a speciality in primary health care were the core factors affecting retention. According to Dyess, Sherman, Pratt and Chiang-Hanisko (2016), with the expected large-scale retirements in the next 5-10 years, the future of nursing lies in the hands of the younger generation.

It is therefore crucial to invest in them through developing them for future leadership roles. When health institutions develop the midlevel associates, particularly the enrolled nurses, or when they train professional nurses for primary health care, age and not experience should be considered in order to enhance the development of skills and knowledge to the younger generation because nursing is composed of an ageing workforce which will soon retire.

- **Health infrastructure and accommodation**

The study results revealed that clinic accommodation and safety were of major concern. This is supported by results of an interview of nurses by Our Health in the Eastern Cape where it was reported that security officers are not provided at night to clinics with accommodation and the rooms offered are small and limited (Mtshana, 2014).

In this context:

- The Department of Health should offer 24/7 security to clinics with accommodation to ensure the safety of employees.
- The clinic accommodation should be attractive and big enough to allow a family setting for those staying far from their homes, and privacy to ensure comfort.

- **Salary and other financial incentives**

The study revealed that 51.76% of the professional nurses in the study strongly disagreed to being satisfied with their salary. The study further showed that professional nurses were dissatisfied with allowances for overtime and other fringe benefits. The results are supported by a descriptive cross-sectional study conducted by Tshitangano (2013) in Limpopo, indicating that 79% of the nurses were dissatisfied with their salaries. Similarly, in a cross-sectional study conducted in Ethiopia on factors influencing job satisfaction and anticipated turnover amongst nurses, 81% of the respondents were not satisfied with their salary (Asegid, Belachew, and Yimam, 2014).

The OSD was implemented in 2007 to improve the financial position of healthcare workers and greatly changed nurses' salaries; however, it appears to be weak and the policy did not achieve the intended goal of retaining and attracting health professionals (South African Nursing Council, 2013). The rural allowance was introduced in order to retain and attract more healthcare workers in rural areas but yet it is allocated in a discriminatory manner amongst the healthcare workers (South African Nursing Council, 2013).

With this background:

- The Department of Health should review the salary given to the professional nurses in rural clinics, particularly the OSD, and they should be given a higher salary than those in urban areas.
- Clinical nurse practitioners in rural clinics should be regarded as a scarce skill as they asses, diagnose, prescribe, refer and rehabilitate. The percentage for rural allowance should be equal amongst healthcare professionals as this shows how professional nurses are not being valued and this lowers their morale.
- The Department of Health should introduce other fringe benefits such as a transport allowance, hardship allowance, and danger allowance for those accepting postings in rural areas.

• Succession plan

The 2015 State Succession Planning Report defines succession planning as “any effort designed to ensure the continued effective performance of an organisation’’ and it aims to attract, retain and develop those employees it has recruited . With the high rate of nursing shortage in the rural clinics, succession planning is of paramount importance. Succession planning is very difficult because of the fast paced and continuously changing healthcare environments (Dyess, Sherman, Pratt & ChiangHanisko, 2016). Succession planning involves the following steps:

➢ Assess workforce demographics

In rural nurse retention, demographics such as age, marital status, educational qualifications and distance travelled to work should be considered so as to establish a baseline of the kind of workforce the institutions hold.

The Department of Health should keep record and assess the migration rate, and the distribution between rural and urban areas in order to determine the needs of the population.

- **Enhance communication about internal advancement opportunities**

Nursing managers and human resource managers should grant study leave to professional nurses who wish to upgrade themselves professionally. Thereafter, they should give them the opportunity to showcase their talent in their work area.

- **Conduct leadership behavioural surveys to determine future management trends**

Behavioural surveys should be conducted within the organisation on the management of the organisation in order to determine weakness, strengths and gaps. This will allow room for change if need be, to ensure continuous effectiveness of the institution.

- **Routinely seek input from directors and managers**

Performance management appraisal should be done in a fair and non-biased manner in order to identify future potential nursing leaders who will take the institution to a higher level and will complement the changing health environments.

- **Asses the organisations' talent**

Current nursing managers should evaluate and identify the professional nurses with talent and who will take over the success of the institution when they retire. Those individuals should be orientated and trained on health management in order to enhance their knowledge and skills.

6.6 Limitations of the study

- The study was conducted only in the Capricorn District of the Limpopo Province and it cannot be generalised to the province as a whole.

- The study was not funded which made it difficult for the researcher to visit other clinics to cover a very large population because of the geographically dispersed clinics because there were no research assistants for the study.

6.7 Recommendations for further studies

- A similar study covering all districts in the province, including key informants, should be conducted in future in order to generalise study findings.

- A study investigating the progress that OSD and the Performance Management Development System have made since the implementation of the policies should be done.

- A similar qualitative study looking at the perceptions of professional nurses regarding nursing retention should be conducted in the province.

REFERENCES

Aiken, L.H. (2012). Nurse-patient ratios: A life and death issue. *Nursing Journal Medicine*, 13(6): 44–50.

Asegid, A., Belachew, T. & Yimam, E. (2014). Factors influencing job satisfaction and anticipated turnover amongst nurses in Sidama Zone public health facilities, South Ethopia. *Nursing Research and Practice,* 2014(1): 2.

Babbie, E.R. (2010). *The Practice of social research.* 12th edition. Belmont: Wadsworth Cengage.

Bagraim, J.J. (2013). Commitment and the emigration intentions of South African professional nurses. *Health South Africa Gesondheid,* 18(1): 1.

Barbara, R. (2015). *Geriatric Nursing.* From http://dx.doi.org/10.1016/j.gerinure. Accessed (10 December 2017).

Bardad, S.A. (2017). Factors influencing retention of essential healthcare providers at facility level in Mandera country: A case study of Mandera county referral hospital Kenya. *East African Health Publications and Hub*, 2(20):128.

Bhattacharya, I. & Ramachandran, A. (2015). Retention of health care professionals in urban India using health information technology. *Human Resource for Health*, 11(10): 80-90.

Bourke, L.B., Taylor, J., Humphreys, J.S. & Wakerman, J. (2013). Understandings of rural health among Australian stake holders. *Health & Place*, 24(10): 65-72.

Brink, H., Van der Walt, C. & Van Rensburg, G. (2012). *Fundamentals of research methodology for the healthcare professionals*. 3rd Edition. Cape Town: Juta.

Bryman and Bell. (2007). *Business Research Methods*. 2nd edition. Oxford University Press.

Buchan, J., & Aiken, L. (2010). Solving nursing shortage: a common priority. *Journal of Clinical Nursing*, 17(24): 3262-3268.

Burns, N. & Grove, S.K. (2011). *The Practice of Nursing Research*. 6th edition. Philadelphia: Saunders.

Bushy, A. (2002). International perspectives on rural nursing: Australia, Canada, USA. *Australian Journal of Rural Health*, 10(1): 104-111.

Bushy, A. (2006). Nursing in Rural and Frontier Areas: Issues, Challenges and Opportunities. *Harvard Health Review,* 7(1): 19-24.

Capricorn District map. (2016). From http://www.municipalities.com. (Accessed 10 May 2017).

Choi, P.S., Cheung, K. & Pang, S. (2012). Attributions of nursing work environment as predictors of registered nurses' job satisfaction and the intention to leave. *Journal of Nursing Management,* 21(3): 1365.

Connell, J. & Brown, R.P.C. (2004). The remittances of migrant Tongan and Samoan nurses from Australia. *Human Resources for Health*, 2(2): 2-3.

Cooke, R., Couper, I. & Versteeg, M. (2011). The stark reality of a gross shortage of health workers sustains poor health outcomes for rural people, and needs immediate attention. *Human Resources for Rural Health*, 10(1): 10.

Cresswell, J.W. 2009. *Research designs.* 3rd Edition. Washington: Sage.

Dambisya, Y.M. (2007). *A review of non-financial incentives for health worker retention in east and southern Africa*, *EQUINET discussion paper 44*. Harare: University of Limpopo and EQUINET.

Darkwa, E.K., Newman. Kwakab, M. & Chowdhury, E.M. (2015). A qualitative study of factors influencing retention of doctors and nurses at rural health care facilities in Bangladesh. *BMC Health Services Research*, 15(2):344.

De Vries, E. & Reid, S. (2003). South African medical students of rural origin return to rural practice? *South African Medical Journal*, 93(2): 789-793.

Department of Health (2002). *Retention strategy for South Africa*. Department of Health, Pretoria. From http://www.dohretentionstrategy.com. (Accessed 27 May 2016).

Diefenbeck, C.A., Plowfield, L.A. & Herrman, J.W. (2006). Clinical immersion: a residency model for nursing education. *Nurse Education Perspectives*, 27(1): 72-95.

Dielemann, M., Guong, V.P., Anh, V.L. & Martenieu, T. (2003). Identifying factors for job motivation of rural health workers in North VIet Man. *Human Resource Research***,** 1(10): 1-10.

Dixit, A. (2002). Incentives and organisations in the public sector: an interpretive review. *Journal of Human Resources*, 37(1): 696-727.

Dolea, C., Stormont, L. & Braichet, J. (2010). Evaluated strategies to increase attraction and retention of health workers in remote and rural areas. *Bulletin from the World Health Organisation,* 88(2): 379.

Drewniak, R. (2010). *7 steps to health care strategic planning*. From http://www.Hayesmanagement.com. (Accessed 13 May 2017).

Dudoviskiy, J. (2016). *The Ultimate Guide to Writing a Dissertation in Business Studies: A step to step assistance*. From http://www.research-methodology.net.

Dyess, M.S., Sherman, O.R., Pratt, B.A. & Chiang-Hanisko, L. (2016). Growing nurse leaders: Their perspectives on nursing leadership and today's practice environment. *Online Journal for Nursing*, 21(1):7.

Ehler, V.J. & Oosthuizen, M.J. (2011). Factors influencing the retention of registered nurses in the Gauteng province, South Africa. *Curationis,* 34(1):16.

El-Jardali, F., Mohamad, A., Jamal, D., Dimassi, H., Dumit, N.Y., McEwen, M.K., Jaafar, M. & Murray, S.F. (2013). A national study on nurses' retention in health care facilities in underserved areas in London. *Human Resources for Health,* 11(49):148.

English Oxford Dictionary. 2010. 3rd edition. Oxford University Press.

Evans, M. (2005). On the job. *Modern Healthcare*, 35 (14): 14-15.

Freywot, S., Mullan F., Payne, P.W. & Ross H. (2010). Compulsory service programs for recruiting health workers in remote and rural areas: Do they work? *Bulletin of the World Health Organization*, 88(1): 364-70.

Government Employees Medical Scheme. (2005). From http://www.gems.gov.za. (Accessed 08 January 2018).

Hanson, K. & Jack, W. (2008). *Health Worker Preferences for Job Attributes in Ethiopia*: *Results from a Discrete Choice Experiment*. Georgetown University: London.

Haskins, J.L., Phakati, S.A., Grant, M. & Horwood. (2017). Factors influencing the retention of professional nurses, doctors and allied health professionals in rural hospital In Kwazulu Natal. *Health SA Gesodheid*, 22(18): 05-18.

Hayes, L.J., Pallas, O., Duffield, C., Shamian, J., Buchan, J. & Hughes, F. (2006). Nurse turnover: A literature review*. International of Nursing Studies*, 43(10): 273.

Health Education England. (2014). *Growing health in numbers*: *Literature review on nurses leaving the NHS*. From http://www.hee.nhs.uk. (Accessed 30 April 2017).

Health Systems Trust (2011). *Annual report*. From: https://www.hst.org.za. (Accessed on 28 March 2016).

Hegney, D., McCarthy, A., Rogers-Clark, C. & Gorman, D. (2002a). Why nurses are attracted to rural and remote practice. *Australian Journal of Rural Health*, 10(3): 178-186.

Hegney, D., McCarthy, A., Rogers-Clark, C. & Gorman, D. (2002b). Retaining rural and remote area nurses: The Queensland, Australia experience. *Journal of Nursing Administration,* 32(3), 128-135.

Henderson, L. & Tulloch, J. (2008). Incentives for retaining and motivating health workers in Asian and Pacific countries. *Human Resource for Research*, 16(18):1478-4491.

Henderson-Betkus, M. & MacLeod, M. (2004). Retaining public health nurses in rural British Columbia: The influence of job and community satisfaction. *Canadian Journal of Public Health*, 95(1): 54-58.

Herzberg, F. (2003). One more time: How to motivate employees. *Harvard Business Review,* 81(1): 87-96.

Herzberg's two-factor theory (2003). From OperationExcellenceConsulting.org. (Accessed 23 April 2016).

Humpherys, J., Wakerman, J., Wells, R., Kuipers, P., Jones, J., Enwistle, P. & Harvey, P. (2007). *Improving primary health care workforce retention in small and remote communities*: *How important is ongoing education and training?* From http://www.Centrefor RemoteHealth.org. (Accessed 23 August 2017).

Ingersoll, G. Olsan, T., Drew-Cates, J. DeVinney, B. & Davies, J. (2002). Nurses' job satisfaction, organizational commitment, and career intent. *Journal of Nursing Administration*, 32(5): 250-263.

International Organisation of Migration. (2006). *Migrants and the host society*. http://www.iom. (Accessed 27 April 2016).

Johnson, A., Fyfe, T. & Snadden, D. (2006). *Rural and remote suitability score: A review.* From http://www.University of Northern British Columbia/University of British Columbia Northern Medical Program, University Way, Prince George. (Accessed 24 June 2016).

Kash, B.A., Naufal, G.S., Dagher, R.K. & Johnson, C.E. (2010). Individual factors associated with the intensions to leave among directors of nursing homes*. Health Care Management Review*, 35(3): 246-255.

Kenyakenya, K. (2015). *Issues affecting heath care in Kenya and Sub-Saharan Africa*. Health Management System Inc.

Khothari, C.R. (2004). *Research Methodology: Methods and Techniques*. 2nd Edition. New Delhi: New age International Publishers.

Kolstad, J.R. (2011). How to make rural jobs more attractive to health workers: Findings from a discrete choice experiment in Tanzania. *Health Economics*, 20(2):196-211.

Krejcie, R.V. Morgan, D.W (1976). *Determining sample size for Research Activities*. University of Minnesota. Retrieved: 03/02/2009 from World Wide Web.opa.uprrp.edu/invinsDucs/KrejcieandMorgan.pdf. (Accessed on 02 May 2016).

Kruk, M.E., Johnson, J.C. & Gyakobo, M. (2010). Rural practice preferences among medical students in Ghana: a discrete choice experiment. *Bulletin of the World Health Organization*, 88 (1): 333-41.

Kwanash, J., Dzodzomenyo, M., Mutumba, M., Asabir, K., Koomson, E., Gyakobo, M., Agyei-Baffour, P., Kruk, M.E. & Snow, R.C. (2012). Policy talk: incentives for rural service among nurses in Ghana. *Health Policy and Planning,* 27(1): 669-676.

Lavkaras, P.J. (2008). *Encyclopedia of survey research methods*. From http://www.methods.sagepub.com. (Accessed 10 May 2017).

Lea, J. & Cruickshank, M.T. (2007). The experience of nurses in rural practice in New South Wales. *Rural and Remote Health*, 7(1): 814.

Lehman, U. (2008). *Strengthening human resources for primary health care*. School of public health: University of Western Cape.

Lehmann, U., Dieleman, M. & Martineau, T. (2008). Staffing remote rural areas in middle- and low-income countries: a literature review of attraction and retention. *BMC Health Services Research*, 8(3): 19.

Lipinge, S., Dambisya, Y.M., Loewenson, R., Chimbari, M., Ndetei, D., Munga, M., Sibandze, S. & Lugina. (2009). *Regional network for equity in health in east and southern Africa*: *Incentives for health worker retention in east and southern Africa*. University of Namibia and University of Limpopo: EQUINET.

Lynn Wieck, K., Dols J. & Northam S. (2009). What Nurses Want: The Nurse Incentives Project*. Nursing economic*s, 26(3): 169-177.

MacLeod, M., Kulig, J., Stewart, N., Pitblado, J., Banks, K. & D'Arcy, C, (2004). *The nature of nursing practice in rural and remote Canada*. Ottawa. From http://www.chrsf.ca. (Accessed 24 June 2016).

Maillacheruvu, P. & McDulf, E. (2014). South Africa's return to primary care: the struggles strides of the primary health care system. *The Journal of Global Health*, 6(1): 15.

Makoka, E., Oosthuizen, M.J. & Ehlers V.J. (2010). Retaining professional nurses in South Africa: Nurse Managers' perspective. *Journal of Interdisciplinary Health Sciences,* 15(1): 484.

Malatsi, I., Deckock, R., Delobelle, P., Rawlison, J.L. & Ntuli, S. (2011). Job satisfaction and intent of primary healthcare nurses in rural South Africa: a questionnaire survey. *Journal of Advanced Nursing*, 67(2): 371-83.

Manyisa, Z.M., Elsie, J. & Aswegen, V. (2017). Factors affecting working conditions in public hospitals: A literature review. *International Journal of African Nursing Science*, 6(2): 28-38.

Martin, C.A., & Tulgan, B. (2006). *Managing the generation mix*: *From urgency to opportunity*. 2nd edition. HRD Press.

Massyn, N., Peer, N., English, R., Padarath, A., Barron, P., & Candy, D. (2016). *District health barometer*. 11th edition. Durban: Health Systems Trust.

Mathauer, I. & Imhoff, I. (2006). Health worker motivation in Africa: the role of nonfinancial incentives and human resource management tools. *Human Resources for Health*, 4(2): 24.

Mbemba, G.I.C., Gagbon, M.P. & Brabant, L.H. (2016). Factors affecting recruitment and retention of healthcare workers in rural and remote areas in developed and developing countries: an overview. *Journal of Public Health in Africa*, 7(2): 10.

McLeod, S. (2013). *An introduction to Research in Counselling and Psychotherapy*. London: SAGE.

Ministry of Health of British Colombia (2006). *Nursing strategy*. From https://www.healthservices.gov.bc.ca/ndirect/nstrategies. (Accessed on 02 May 2016).

Minore, B., Boone, M., Katt, M., Kinch, P., Birch, S. & Mushquash. (2005). The effects of nursing turnover on continuity of care in isolated first nation communities. *Canadian Journal of Nursing Research*, 37(1):386-100.

Momentum Africa Business Unit: Mozambique. (2006). From http://www.plasaude.com. (Accessed 08 January 2018).

Msuya, M., Blood-Siegfired, J., Chugulu, J., Kidayi, P., Sumaye, J., Machange, R., Mtuya, C. & Pereira, K. (2017). Descriptive study of nursing scope in rurally medically underserved areas of Africa, South of the Sahara. *International Journal of Africa Nursing Sciences*, 10:1016.

Mtshana, M. (2014). *Eastern Cape rural nurses speak*. From http://www.health-e.org.za/Eastern-Cape-rural-nurses-speak-2/. (Accessed 29 June 2017).

Muhammed, A.K.M., Kalam, A.A., Beh, L., Wanke, P. & Ozgun, A. (2016). Job satisfaction and the intent to quit: an empirical analysis of nurses in Turkey. *Peer Journal,* 10(4): 77.

Murrow, J. & Nowak, P. 2005. What nurses want? *Health Services*, 25(1): 25-28.

Mwaniki, D.L., & O Duolo, C. (2008). *Migration of health workers in Kenya*: *The impact of health service delivery.* EQUINET Discussion paper no 55.

National Rural Health Association. (2005). *Recruitment and retention of a quality health workforce in rural areas a series of policy papers on the rural health careers pipeline.* From http://www.nrharural. Org/advocacy/sub/issuepapers/nursing (pdf).

(Accessed 01 July 2016).

National Rural Health Association. (2011). *HPSA & MUA Negotiated Rulemaking*. From: http://nationalruralhealthassociation.com (pdf). (Accessed 10 July 2016).

Ndetei, D.M., Ongecha, F.A., Mutiso, V., Kuria, M., Khasakhala, L.I. & Kokonya, D.A. 2008. The challenges of human resources in mental health in Kenya. *South Africa Psychiatry Review,* 10(1): 33–36.

Neuhauser, E. (2002). Inspiring organizational loyalty and commitment: *A Proposed Research*, 39(2): 470-476.

Noufa, A.A. & Maye, A.O. (2013). Factors affecting retention: A survival analysis. *Saudi Medical Journal*, 34(3): 10.

Ojakaa, D., Olango, S. & Jarvis, J. (2014). *Factors affecting motivation and retention of primary health care workers in three disparate regions in Kenya*. Kenyatta University, Nairobi.

Oosthuizen, M.J., Ehlers, V.J. & Jooste, K. (2005). The cost and the benefits of nurse migration on families: A Lesotho experience. *Division of Nursing and Midwifery*, 34(1): 10.

Organisational Leadership Assesment Group: Krejcie and morgan's table for determining sample size. (2016). From http://www.olagroup.org. (Acessed 12 April 2016).

Pilot, D.F. & Hungler, B.P. (2013). *Essentials of Nursing Research: Methods, Appraisal and Utilisation*, 8th edition. Philadelphia: Walter Kluwer.

Pong, R. & Russel, N. (2003). *A review and synthesis of strategies and policy recommendations on the rural health workforce*. From: http://www.crnhr.ca. (Accessed 12 July 2016).

Rispel, L. (2015). *SA nurses are moonlighting to make ends meet*. From http://www.health24.com. (Accessed 10 May 2017).

Rispel, L. (2016). *South Africa health review*: *Analysing the progress and fault lines of health sector transformation South Africa.* 19th edition. Durban: Health System Trust.

Robert, J. (2013*). Research to improve retention*. Essay. Oklahoma University: America.

Ross J. (2004). Defining the role of a rural health nurse. *Nursing New Zealand*, 6 (6): 20.

Rural Health Advocacy Project. (2009). *National Department of Health human resources for health strategy 2012/13–2016/17.*From: http://www.up on the national strategic priority area access in rural and remote areas. (Accessed on 05 May 2016).

Saraladevi, N., Plange-Rhule, J., Roger, C., Tutt, J.B. & Eastwood, M.D. (2009). Health care systems in Africa. *Journal of Ethnicity & Disease*, 19(1): 90.

Serneels, P., Lindelow, M., Garcia-Montalvo, J. & Barr, A. (2007). For public service or money: understanding geographical imbalances in the health workforce. *Health Policy and Planning*, 22(3): 128-138.

Shisana, O., Hall E.J., Maluleke R., Stoker D.J., Schwabe C., Colvin M., Chauveau J., Botha C., Gumede T., Fomundam H., Shaikh N., Rehle T., Udjo E. &

Shuttleworth, M. (2011). *Content validity*. From http://www.explorable.com. (Accessed 10 May 2011).

Shuttleworth, M. (2011). *How to write a research paper*. From http://www.Explorable.com. (Accessed 30 May 2017).

Sochalski, J. (2002). Nursing shortage redux. The turning corner on an enduring problem. *Health Affairs*, 21(5): 157-164.

South African Nursing Council. (2013). *Strategies on Nursing Education, Training and Practice 2012/13 to 2016/17*. From http://www.denosa.org.za. (Accessed 29 June 2017).

South African Nursing Council. (2017). *Annual statistic: Provincial distribution of nursing manpower versus the population of South Africa, 2016*. From http://www.sanc.co.za. (Accessed 30 August 2017).

South African Nursing Counsel. (2017). *Age distribution for registered nurses*. From http://www.sanc.co.za. (Accessed on 15 May 2017).

Statistics South Africa. (2017). *Mid-year population estimates*. From http://www.statssa.gov.za. (Accessed 10 January 2018).

Taylor, D. (2016). *The Literature review*: *A few tips on conducting it*. University of Toronto: Ontario.

The state of succession planning. (2015). From http://www.halogensoftware.com. (Accessed 23 June 2017).

Tshitangano, T.G. (2013). Factors that contribute to public sector nurses' turnover in Limpopo Province of South Africa. *African Journal of Primary Health Care & Family Medicine*, 5(1): 479.

Uys, L.R. & Klopper, H.C. (2013). *The ideal ratio of categories of nurses for the South African public health system.* From http://www.dx.doi.org. (Accessed on 17 May 2017).

Van Dormael, M., Dugas, S., Kone, y., Coulibaly, S., Sy, M., Marchal, B. & Desplas, D. *Appropriate training and retention of community doctors in rural areas: a case study in Mali.* (2008). From: http://www.humanresourceresearchforhealth.com/6/25. (Accessed 12 February 2016).

Van Leuven, K.A. (2014). Preparing the next generation of nurse practitioners. *The Journal for Nurse Practitioners*, 10(4): 271-276.

Van Rensburg, H.C.J. (2014). South Africa protracted struggle for equal distribution and equitable access: still not there. *Human Resources for Health*, 12(1): 26.

Viscomy, M., Larkins, S. & Gupta, T.S. (2013). Recruitment and retention of general practitioners in rural Canada and Australia: a review of the literature. *Canadian Rural Journal of Medicine*, 18: 13-23.

Vujicic, M., Alfano, M. & Bukhuti, S. (2010). *Getting health workers to rural areas: Innovative analytic work to inform policy making*. From: http//documents.worldbank./org/curated/en/getting-health-workers-to-rural-areas.

William, K. (2006). *Research Methods Knowledge Base.* London: SAGE.

Willis-Shattuck, M., Bidwell, P., Thomas, S., Wyness, L., Blaauw, D. & Ditlopo P. (2008). Motivation and retention of health workers in developing countries: A systemic review. *BMC Health Services Research,* 8(247): 1472-6963.

Wilmot, J. (2016). *Nursing shortage is compromising SA healthcare*. From http://www.medicalbrief.co.za. (Accessed on 15 May 2017).

World Health Organisation. (2013). Early implantation of WHO recommendations for the retention of health workers in remote and rural areas. *Bulletin of the World Health Organisation,* 91: 834-840.

World Health Organization. (2010). *Increasing access to health workers in remote and rural areas through improved retention.* From: http://www.who.com. (Accessed on 05 April 2016).

Wurie, H.R., Mohamed, S. & Witter, S. (2016). Retention of health workers in Sierra Leone: findings from life histories. *Human Resources for Health*, 14(3): 10.

Annexure a: Questionnaire

Strategies to improve the retention of Healthcare Workers in rural Clinics of the Capricorn District, Limpopo Province

Instructions: As appropriate, answered by ticking on the box that corresponding to your responses. Please be honest when answering the questionnaire. All data and information provided shall only be used for this research and treated confidentially for the benefit of the respondent, University of Limpopo, and the Department of Health.

Section a: socio-demographic information

A.1 What is your gender?

Male	
Female	

A.2 What is your age?

23 – 26	
26 – 30	
30 – 34	
34 -38	
>39	

A.3 What is your marital status?

Married	
Single	
Divorced	
Co-habiting	

A.4 What is your qualification?

Diploma	
Degree/Honours	
Masters	

A.5 Do you have a post graduate diploma in Primary Health care?

Yes	
No	

A.6 How many children do you have?

None	
1	
2	
3 +	

A.7 How many years have you been working at this clinic?

<10 years	
11 – 20 years	
20 – 30 years	
>31 years	

A.8 Where were you raised?

Rural area	
Urban area	

A.9 What distance do you travel to work?

< 5 km	
6 -10 km	
10 -20 km	
>20 km	
N/A	

A.10 What is your gross monthly salary

<R15000	
R15000 – R25000	
R25000 – R35000	
>R35000	

Section b: factors affecting the retention of rural nurses

B.1: Satisfaction with salary and other benefits	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I am satisfied with my salary					
I get allowance for working overtime					
There are other fringe benefits available					

B.2. Work load

B.2.1.1 How many professional nurses are working at the clinic?

2	
3	
4	
>4	

B.2.1.2 How many patients do you see per day?

<100	
100 – 150	
150 – 200	
>200	

B.2.1.3 What is the nurse patient ratio?

1 : 25 – 49	
1 : 50 - 100	
1 : 100 - 150 +	

B.3. Interpersonal relationships amongst colleagues and supervisor	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
There is a team spirit amongst us as nurses in the clinic					
We support each other as colleagues even outside work-related issues					
We have a shared value system that keeps us in touch with the organisation					
Staff members are free to voice out their concerns and are listened to					
Grievances are dealt with fairly so					

B.4. Clinic infrastructure and accommodation	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Physical structure of the clinic is poor					
There is poor security at the clinic					
Rooms are small and cannot accommodate my family					

B.6. Opportunities for promotions and career development	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Opportunities for promotion are scarce					
There are no near institutions for personal growth and development					

B.6.1 What training have you received so far?

Training	Yes/No
HIV testing and counselling	
IMCI	
Couple counselling	
TB management	
NIMART	
PMTCT	

B.7. Recreational facilities	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
There are no sports grounds					
There is no mall around the area					
Town is far from the work area					

Section c:the intention to leave rural practice

C.1. Do you intent to leave this clinic in the near future?

Yes	
No	

C.2. If YES, what is your main reason to migrate? (tick one)

Rural allowance not enough	
There are no good schools for children	
There is lack of opportunities for promotions	
Study leaves are granted after many years of service	
There are no allowances for overtime	
There is poor clinic infrastructure	
Salary is not enough compared to the work I do	

C.3 Other reasons comment below

Section d: strategies to improve the retention of health care workers

D.1 what strategies do you think will help in retaining rural primary health care workers? Please select below.

Strategy	Yes	No
Improving the clinic accommodation		
Granting of study leaves for professional growth		
Improving of physical infrastructure		
Increasing salaries for rural primary health care nurses		
Providing support from other multi-disciplinary team		
Ensure career progression for rural primary health care workers		
Alleviate the understaffing through improved recruitment and retention		
Provide recreational facilities		

D.2 Other strategies not listed above, comment below

_____

_____

_____

Thank you!!!

Annexure b: Approval letter from TREC

University of Limpopo
Department of Research Administration and Development
Private Bag X1106, Sovenga, 0727, South Africa
Tel: (015) 268 2212, Fax: (015) 268 2306, Email:noko.monene@ul.ac.za

TURFLOOP RESEARCH ETHICS COMMITTEE CLEARANCE CERTIFICATE

MEETING:	**05 July 2016**
PROJECT NUMBER:	**TREC/77/2016: PG**
PROJECT:	
Title:	Strategies to improve the retention of health care workers in Rural clinics of the Capricorn District, Limpopo Province
Researcher:	Ms KJ Mola
Supervisor:	Prof RN Malema
Co-Supervisor:	Prof TM Mothiba
School:	Health Care Sciences
Degree:	Masters in Nursing

PROF TAB MASHEGO
CHAIRPERSON: TURFLOOP RESEARCH ETHICS COMMITTEE

The Turfloop Research Ethics Committee (TREC) is registered with the National Health Research Ethics Council, Registration Number: **REC-0310111-031**

Note:
i) **Should any departure be contemplated from the research procedure as approved, the researcher(s) must re-submit the protocol to the committee.**
ii) **The budget for the research will be considered separately from the protocol.**
PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES.

Finding solutions for Africa

Annexure c: approval letter from the Limpopo Department of Health

LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF HEALTH

Enquiries: Latif Shamila (015 293 6650) Ref:4/2/2

Mola KJ
University of Limpopo
Private Bag X1106
Sovenga
0727

Greetings,

RE: Strategies to improve the retention of health care workers in Rural clinics of the Capricorn District, Limpopo Province

The above matter refers.

1. Permission to conduct the above mentioned study is hereby granted.
2. Kindly be informed that:-
    - Research must be loaded on the NHRD site (http://nhrd.hst.org.za) by the researcher.
    - Further arrangement should be made with the targeted institutions, after consultation with the District Executive Manager.
    - In the course of your study there should be no action that disrupts the services.
    - After completion of the study, it is mandatory that the findings should be submitted to the Department to serve as a resource.
    - The researcher should be prepared to assist in the interpretation and implementation of the study recommendation where possible.
    - The above approval is valid for a 3 year period.
    - If the proposal has been amended, a new approval should be sought from the Department of Health.
    - Kindly note, that the Department can withdraw the approval at any time.

Your cooperation will be highly appreciated.

Head of Department

06/10/2016
Date

18 College Street, Polokwane, 0700, Private Bag x9302, POLOLKWANE, 0700
Tel: (015) 293 6000, Fax: (015) 293 6211/20 Website: http/www.limpopo.gov.za

Annexure d: approval letter from Capricorn District Primary Health Care

LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF HEALTH
CAPRICORN DISTRICT

Enq : **Malema DMM**

Tel : **015 290 9266**

From : **Primary Health Care**

Date : **18 January 2017**

To : **Mola KJ**
University of Limpopo
Private Bag X 1106
Sovenga
0727

Subject : **Strategies to improve the retention of Health care workers in rural clinics of Capricorn District, Limpopo Province.**

The above matter refers

1. Permission to conduct the above mentioned study is hereby granted.
2. Kindly be informed that :
    - In the course of your study there should be no action that disrupts the services.
    - Kindly note, that the Department can withdraw the approval at any time.

Your cooperation will be highly appreciated.

Acting Director PHC

2017/01/20
Date

Annexure e: consent form

University of Limpopo (Turfloop campus) consent form

Statement concerning participation in research project

Title of study: Strategies to improve the retention of health care workers in rural clinics of the Capricorn District, Limpopo Province.

I have read the information on the aims and objectives of the proposed study and I was provided the opportunity to ask questions and given adequate time to rethink the issue. The aim and objectives of the study are sufficiently clear to me. I have been not pressurized to participate in any way.

I know that sound recordings will be taken of me. I am aware that this material may be used in scientific publications which will be electronically available throughout the world. I consent to this provided that my name is not revealed.

I understand that participation in this study is completely voluntary and that I may withdraw from it at any time without supplying reasons.

I know that this study has been approved by the Turf loop Research Ethics committee (TREC), University of Limpopo (Turf loop Campus). I am fully aware that the results of this study will be used for scientific purposes and may be published. I agree to this, provided my privacy is guaranteed.

I hereby give consent to participate in this study

…….. …….

Place. Date.

Statement by researcher

I provided verbal and or written information regarding this study

I agree to answer any future questions concerning the study as best as I am able

I will adhere to the approved protocol.