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Fall prevention in a dementia care centre in Gauteng

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FALL PREVENTION IN A DEMENTIA CARE CENTRE IN GAUTENG

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Research report submitted to the Faculty of Health Sciences, University of the Witwatersrand, Johannesburg, in partial fulfilment of the requirements for the degree of Master of Science in Nursing.

Johannesburg, 2020

Declaration

I, Lizzie Nomasonto Mabula, declare that this research report is my own, and was accomplished with assistance. It is being submitted for the degree of Master of Science in Nursing at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at any other University.

……..

Lizzie Nomasonto Mabula

……..day of……..……..2020……in…….

Dedication

This research is dedicated to my supportive husband, Gauda Mabula, and my two daughters, Tieho and Rorisang Mabula, for their support and their sacrifices made during the course of my studies.

Abstract

The psycho-geriatric population has a high risk of falling due to the symptoms with which this group presents. The study explored and described any possible relationship between the fall risk of the psycho-geriatric residents of a dementia care centre in Gauteng and the nature of the staff's fall prevention practices and educational needs.

This was a mixed-method study, using a sequential explanatory design with three phases. Phase one consisted of structured observations of psycho-geriatric residents. Phase two consisted of group interviews with nurses and care workers. Phase three linked the results of the first two phases. The results showed that psycho-geriatric residents' fall risk was moderate. The staff was found to be struggling with fall prevention due to some difficulties. These were found to be linked to the psychogeriatric residents' fall risk. There is a need to improve training on fall prevention in the dementia care centre.

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Chapter 1 Introduction

1.1 Introduction

This chapter addresses an introduction to the study, including background about the pathology of dementia. The problem statement, research questions, objectives, study significance, philosophical stance and study terms were explained.

Psycho-geriatric residents have a high risk of falling due to their presenting symptoms. In a dementia care centre, the majority of psycho-geriatric residents roam around aimlessly, are restless, forgetful, have memory loss, talk to themselves, hear voices of unseen people, see unseen people and lack judgment in decision making. This prevents them from seeing danger for themselves.

In the dementia care centre under consideration each psycho-geriatric resident is allocated a care worker who has to keep an eye on him/her and also assists him/her with walking, to minimize any risks for falls. However, the number of available care workers on duty does not cater for all psycho-geriatric residents, especially since their behaviour can be unpredictable due to their condition.

Most psycho-geriatric residents use walking aids for balance. The residents' bathrooms have a bath and shower grab bars for safety. It is difficult to put psycho-geriatric residents in a therapeutic programme aimed at fall prevention due to their inability to follow a set of rules. It is not clear if the fall prevention methods used in the dementia care centre under consideration are effective, and this needs further investigation to have a clear picture of all the fall prevention methods and their perceived effectiveness.

The fact that psycho-geriatric residents in a dementia care centre are able to and do wander around all day is different to medical/surgical units where patients are mostly confined to a bed or chair (Scanlan, Wheatley and McIntosh, 2012). Management plans for preventing falls in general units are therefore not appropriate for psycho-geriatric residents in a dementia care centre. Many interventions exist with regard to prevention of falls in the general hospital population, but little is known about how to deal with falls in the psycho-geriatric population residing in a dementia care centre.

1.2 Background

In Royset et al.'s (2019) study, the WHO defines a fall as an event which results in a person coming to rest in advertently on the ground or floor or other lower level. In this study, a fall is defined as an unplanned event where a psycho-geriatric resident unintentionally comes to rest on the floor, whether or not an injury was sustained, National Institute for Health and Care Excellence (2015). Psycho-geriatric residents in the care centre under consideration are admitted from age 55 years and above for problems such as different forms of dementia (Alzheimer's, vascular, frontotemporal, Lewy bodies' dementia, mixed dementia) and any form of a mental disorder. Psycho-geriatric residents less than 55 years are usually placed on a waiting list.

Alzheimer dementia is a neurodegenerative progressive disease that happens over a long time; its origin is unknown. "The protein that plays the main role in causing most dementias is called the Tau protein. Tau microtubule-associated protein (MAP) is a single gene that produces the tau protein, and is essential for the development of neuronal cell polarity. The tau protein functions within a neuron's axon, and its main function is to be a binder and a stiffener for cylindrical, railroad-track-like constructions called microtubules. A neuron uses microtubules to enable the speedy transport of proteins and other cargoes along its axon. Without that transport, which brings nutrients and energy and carries away waste, the axon and the rest of the neuron would deteriorate" (Schnabel, 2013).

Microtubules form and dissolve all the time in active neurons. To support these rapid changes, tau's microtubule-binding properties are constantly being fine-tuned by the addition or removal of small molecules called phosphor groups. Enzymes called kinases add the phosphor groups, at any of the multiple sites on the tau protein (that is called phosphorylation), to weaken tau's grip and make a microtubule less rigid. Tau proteins become hyper phosphorylated, tagged with phosphor groups at multiple sites. They detach completely from microtubules and drift out of the axon, into the main neuronal body (soma) and into the mesh of root like tendrils (dendrites) through which a neuron receives its principal inputs from other neurons. Eventually these hyper phosphorylated tau proteins begin to stick together to make neurofibrillary tangles and threads (NFTs), long, insoluble aggregates which, under microscope, look

like snips of coarse hair. Failure of the tau protein to stabilise microtubules results in the development of nervous system pathologies (Schnabel, 2013).

A person who is suffering from Alzheimer dementia has impaired memory, specifically short-term memory, evidenced by forgetfulness, confusion, disorientation, aggression and difficulty in self-care.

Altered blood supply and oxygen supply to the brain due to infarcts result in vascular dementia. Vascular dementia is due to cerebrovascular disease and ischemic disease or haemorrhagic brain injury. A person suffering from vascular dementia displays poor concentration, difficulty in communicating, limb weaknesses and loss of co-ordination.

Frontotemporal dementia is a group of brain disorders involving tau proteins and the TDP43, which is caused by progressive nerve cell loss in the brain, particularly the frontal lobes and the temporal lobes. Frontotemporal dementia symptoms are poor judgment, socially inappropriate behaviour, poor concentration, frequent abrupt mood changes and speech difficulties.

Lewy bodies are alpha-synuclein proteins. Abnormal accumulation of alpha-synuclein proteins in the nerve cells of the brain is called Lewy body dementia. Lewy body dementia symptoms are similar to the symptoms of Alzheimer disease and Parkinson's disease. Lewy body dementia symptoms include changes in thinking and reasoning, confusion, alertness that varies from one time of the day to another, and Parkinson's symptoms, such as a hunched posture, balance problems, rigid muscles, visual hallucinations, delusions and more (Kim, Kagedal and Halliday, 2014).

A mixture of two or more types of dementia, occurring at the same time to the same person is called mixed dementia. It could be Alzheimer dementia and vascular dementia or Alzheimer dementia and Lewy body dementia or all three dementias happening at the same time to the same person. Symptoms will be relationship to all the presenting dementias, according to Custodio et al. (2017).

Psycho-geriatric residents suffer from a loss of mental ability. Their common symptoms are persistent forgetfulness and memory loss, difficulties in abstract thinking and communication, dependency on nurses and care workers for meeting basic needs, and having urinary and faecal incontinence. Psycho-geriatric residents'

unpredictable behaviour, arising from the mentioned symptoms, may lead to a risk for falling.

Psycho-geriatric residents are often subject to mood swings. When a psycho-geriatric resident is in a manic state, she or he walks around for the whole day without resting, whereas when she or he is in a depressed state, she or he sleeps most of the day. This behaviour of walking around the whole day without rest is unpredictable and leads to the risk for falls.

There are many factors that could determine the fall risk of psycho-geriatric residents in a dementia care centre. These include direct causes of falls and failure to implement fall prevention programmes. A study done by Pfortmueller et al. (2014) revealed that there are drugs that are associated with increased fall risk which are known as fall risk increasing drugs. The most common fall risk increasing drugs are drugs with sedative and psychotropic effect such as sedations, hypnotics, antipsychotics and antidepressants. In addition, Mehta et al.'s (2010) stated that antipsychotics cause extrapyramidal symptoms and tardive dyskinesia, which impair movement and therefore contribute to falling.

A study conducted by Sherrington et al.'s. (2008) examined the effects of exercise on fall prevention in the elderly. This systematic review of 44 trials with 9,603 participants revealed that the combined estimate of the effect of exercise was that it reduced the rate of falling by 17%. The researchers concluded that this review provide strong evidence that exercise programs can reduce fall rates in older people. Ballesteros, Hislop and Panchasarp (2013) found that people with an inactive lifestyle tend to have weaker lower extremities. This weakness exposes individuals to high risk for falls.

Although a lot of research has been conducted in European countries, Canada, Australia etc. more research needs to be conducted in Africa, South Africa and the chosen dementia care centre. Research on falls has never been conducted at the dementia care centre under consideration, and hence it was chosen as the study setting.

Some studies have been conducted in South Africa; however, these were not in the psycho-geriatric population. An example of such a study was conducted at the University of the Free State, with a Dementia Research Group, which investigated the prevalence of dementia in an urban black community. The results of this study showed that there was a higher than expected dementia prevalence of approximately 6% in a small sample of 200 black geriatrics (Heyns and Van der Poel, 2010). The researcher could not find South African or African studies related to the psycho-geriatric population and falls.

1.3 Problem statement

Falls in a dementia care centre are a daily occurrence. This result in high costs and health risk, distress and harm to the psycho-geriatric residents who are the victims of falls which may cause serious injuries. While research has been done to profile the fall risk of patients in general hospitals, in order to predict risk and to put in place specific prevention measures for vulnerable older adults, little has been done to understand the fall risk of psycho-geriatric residents in a dementia care centre. While all psycho-geriatric residents in a dementia care centre are at risk for falling, it would help to find situations that have the potential to lead to falls and to ensure those who care for the psycho-geriatric residents act appropriately in order to prevent falls.

It is, therefore, important to ascertain what nurses and care workers are doing to prevent falls amongst psycho-geriatric residents in a dementia care centre and to find out what their educational needs regarding fall prevention are. It is also essential to find out whether a relationship exists between the nurses' and care workers' prevention practices and educational needs and the falls sustained by the psycho-geriatric residents. This study focused on addressing these issues.

1.4 Purpose of the study

The purpose of the study was to explore and describe any possible relationship between the fall risk of the psycho-geriatric residents of a dementia care centre in Gauteng and the nature of the staff's fall prevention practices and educational needs.

This was done in order to find out the implementation processes for the prevention of falls in the dementia care centre.

1.5 Research question

Is there a relationship between the nurses' and care workers' prevention practices and educational needs and the psycho-geriatric residents' fall risk and what is the nature of this relationship?

1.6 Research objectives

- To describe the fall risk of the psycho-geriatric residents of a dementia care centre in Gauteng using the Morse Fall Scale.
- To explore nurses' and care workers' fall prevention practices and their perceived effectiveness for the psycho-geriatric residents in a dementia care centre in Gauteng.
- To explore nurses' and care workers' educational needs regarding fall prevention.
- To explore and explain the relationship between the nurses' and care workers' prevention practices and educational needs and the psycho-geriatric residents' fall risk.

1.7 Significance of the study

This study provides information about the fall risk of psycho-geriatric residents and fall prevention practices that are used by the nurses and care workers in a dementia care centre. It explored and explained whether there is a relationship between the nurses' and care workers' prevention practices and educational needs and the psycho-geriatric residents' fall risk. The study is essential because limited studies have been done in the psycho-geriatric population in South Africa, and in the dementia care centre setting specifically. The research gap on psycho-geriatric fall prevention needs to be closed so that health care professionals can develop effective fall prevention programmes to reduce the negative impact of falls on an individual's quality of life, as

well as the economic burden of treating falls, according to Fernando et al. (2017). This is the gap in the literature that this study was addressing.

1.8 Philosophical stance

According to Creswell (2010), pragmatic philosophy is defined as a philosophy of "doing what works best". The pragmatic approach is when a researcher uses a method which appears to be the best suitable to the research problem. Pragmatic researchers hold the view that gives them the freedom to use any of the methods, techniques and procedures associated with quantitative or qualitative research. Pragmatists are aware of the fact that every method has its limitations, therefore different approaches can be useful together in finding a solution to the problem. Pragmatists Murphy, Patton and Rorty (1990) confirm that in the pragmatic worldview the researcher's foundation of enquiry is about believing that different types of data provide a more complete understanding of a research problem than either quantitative or qualitative data only.

In this study, a sequential mixed methods design was followed. The researcher started with a quantitative explanatory design, where the psycho-geriatric residents' fall risk was described using a Morse Fall Scale (Appendix A). This method assisted the researcher in answering a statistical question about psycho-geriatric residents' fall risk. The researcher went further to collect qualitative data from group interviews with the staff, where the participants' fall preventative practices, perceived effectiveness and educational needs were explored. The sequential mixed method enabled the process of finding a possible relationship between the fall risk of psycho-geriatric residents of a dementia care centre in Gauteng and the nature of the staff's fall prevention practices and educational needs.

1.9 Definition of terms

- **Fall** - an unplanned event where a psycho-geriatric resident unintentionally comes to rest on the floor, whether or not an injury was sustained (Jensen et al., 2002).

- **Psycho-geriatric residents** - an elderly man or woman suffering from mental illness, 55 years or above, residing at a dementia care centre (Henderson, 2001).

- **Professional nurse** - a person registered in terms of section 31 of Nursing Act no.33 of 2005, who oversees the activities of the rest of the nursing staff and care workers, and ensures that a high quality of care is maintained in a dementia care centre. They deliver more advanced care, including commencing of intravenous therapy, administration of medication, drawing of blood, administration of oxygen, monitoring of vital signs and consulting with a dementia general practitioner and families (Nursing Act, No.33 of 2005).

- **Enrolled nursing assistant** - a person registered as such in terms of section 31 of Nursing Act no.33 of 2005, and whose duties are to supervise care workers, and assist psycho-geriatric residents with the activities of daily living, like bathing, eating etc. They work closely with professional nurses and assist with nursing administrative tasks for ordering the psycho-geriatric care stock (Nursing Act no.33 of 2005).

- **Care worker** - a non-nursing support staff working in a care centre or a hospital, whose job involves giving care and assisting people who are ill, vulnerable or have special needs with activities of daily living, like bathing, eating etc. This person has undergone a six-month training aimed at looking after the sick, and attends on-going in-service training in a work place (Aylward, Crowley and Stellenberg, 2017).

- **Dementias** - a group of neurodegenerative syndromes with the main feature being cognitive impairment, and where the most prominent symptoms are memory loss and confusion (Norman and Ryrie, 2013).

- **Dementia Care Centre** - a privately-owned nursing home, specialising in the care of those with most forms of dementia, Alzheimer's, Vascular, Parkinson's related, Korsakoff syndrome, among others (Flower Foundation, 1963).

- **Impaired cognitive function** - when a person has a decline or a complete loss of executive function, which is, loss of memory, decision making, judgment, language and thinking (Uys, 1992).

- **Structured observation** - a data collecting method on behaviour, event and situations, in which the researcher gathers data without direct involvement with the participant, Brink (1999). The method of collecting data from psycho-geriatric residents was done in a dementia care centre where psycho-geriatric residents' falls were recorded according to the Morse Fall Scale (Appendix A).

1.10 Conclusion

This chapter provided an introduction to the study, including background about the pathology of psycho-geriatrics and dementia condition. The problem statement, research questions, objectives, study significance, philosophical stance and study terms were explained. The following chapter provides a literature review relevant to the study.

2 Literature Review

2.1 Introduction

This chapter will provide an overview of the literature available globally, with emphasis on fall risk factors in the elderly population. A literature review in a research study is a written presentation of what is published by scholars on a specific topic. It is intended to present what is currently known in a particular field and highlight the knowledge gaps that exist therein (Grove, Burns & Gray, 2013). The purpose of a literature review is to communicate to its readers what is currently known regarding a topic of interest (Burns and Grove (2003) cited in Brink, 2008). In this study, the purpose of conducting a literature review was to search for background knowledge on the topic of falls, dementia and the psycho-geriatric population, and to show the gap in literature that the study would fill.

In this study, research reports and peer reviewed journal articles were reviewed to gain a greater understanding of the topics of interest. The topics that were searched for included: prevalence of dementia in the USA, epidemiology of dementia among elderly in Sub-Saharan Africa, factors contributing to psychiatric patient falls, falls among psycho-geriatric patients, dementia prevalence in a rural region of South Africa and many more.

Articles searched were from the nineteen nineties, early two thousands and current studies until 2018. The reason the researcher used studies that were older than ten years is because there was a huge interest in elderly dementia and psycho-geriatric fall studies in the nineteen nineties and earlier years. Researchers that were interested in conducting these studies were from European countries, Canada, Australia and USA.

Four search databases were used and are: EBSCO HOST, CINAHL, Google Scholar and Medline. The headings covered in this literature review include: mental illness in elderly persons, the prevalence of mental illness in the elderly population, research conducted on the psycho-geriatric and dementia population outside South Africa, fall risk factors on the psycho-geriatric and dementia population, fall prevention practices

for the psycho-geriatric population, fall related injuries, nursing staff experiences with psycho-geriatric fall prevention and knowledge gap.

2.2 Mental illness in elderly persons (psycho-geriatric resident)

Psycho-geriatric resident means an elderly man or woman suffering from mental illness (Henderson, 2001). Elderly demented person means an old man or old woman suffering from any of the neurodegenerative diseases. The symptoms of neurodegenerative disease are cognitive impairment, memory loss and confusion, (Norman and Ryrie, 2013). Psycho-geriatric residents suffer from mental illness, which is a medical condition that alters person's thoughts, feelings and moods. Mentally ill sufferers present with a lack of ability to complete functions of daily living or keep up with the demands of everyday life (National Alliance on Mental illness, 2011).

Mental illness conditions commonly found in elderly persons are Schizophrenia, Bipolar mood disorder, intellectual disability and depression (Centres for Disease Control and Prevention, 2008). Mental illness diagnosis may be genetic, environmental or of unknown causes. A psycho-geriatric resident's medical situation is usually the most difficult to treat because his or her mental illness condition may be combined with aging symptoms like self-care impairment (National Alliance on Mental illness, 2011). This makes a psycho-geriatric resident's situation of daily living more difficult than any other elderly person's and exposes him/her to an increased risk of falling. The scarcity of studies focused on this population in South Africa is an indication that there is an urgent need for studies to be done on the falls associated with the psycho-geriatric population in the dementia care centre and in South Africa.

2.3 Prevalence of mental illness in the elderly population in South Africa

It is difficult to confirm South African statistics on the prevalence of mental illness in the elderly population, due to unavailability of studies about psycho-geriatric residents. The limited number of studies on psycho-geriatric residents' makes it even more complicated to search for current psycho-geriatric residents' statistics. Aging is normally associated with mental illness, because elderly persons go through a difficult

life transition. According to Albertyn (2006), retirement comes with drastic changes in a person's life, which makes it the most difficult life time. Feelings of unproductivity due to aging expose elderly persons to feelings of sadness resulting in depression.

The 2011 census conducted in South Africa, revealed that 2.2 million South African people were suffering from dementia. This number was more than expected (Beech, 2015). It is necessary to conduct research on the prevalence of mental illness in the elderly population so that current accurate statistics are known for proper planning for psycho-geriatric residents'' health needs. According to Murray (2014), the South African Department of Health has not realised that dementia diseases pose a serious health problem that need special attention, because of the unavailability of South African statistics. After a long drought of psycho-geriatric and dementia studies in South Africa, Heyns and Van der Poel (2010) conducted a study at the University of Free State, investigating the prevalence of dementia in an urban black community. The study results revealed a 6% prevalence of dementia in a small sample of two hundred (200) black geriatrics.

2.4 Research conducted on Psycho-geriatric and Dementia population outside South Africa

According to the World Health Organisation (2017), approximately 15% of elderly persons above sixty (60) years suffer from a mental disorder. The World Health Organisation (2017) further stated that the population is aging at a fast pace globally. The world population of over 60s will nearly double from 12% to 22% between 2015 and 2050. Dementia and depression are the most common mental disorders in this population. The total number of people with dementia worldwide was estimated at 35.6 million in 2010. This number is expected to double every 20 years, while according to Murray (2014), the number of new cases of dementia grows by 7.7 million every year.

Edelstein and Brown (2008) conducted a study which evaluated the following three aspects: the intrinsic predictors of falls among hospitalized psycho-geriatric patients, the accuracy with which a combination of these variables can classify fallers and non-fallers, and whether the specific aspects of the environment set the occasion for falling. The result of the study revealed three variables psychotic disorder, antipsychotic

medication and cardiovascular disorder as the risk factors for falls. Their findings confirmed that residents with a psychotic disorder were twice as likely to fall as compared to residents without a psychotic disorder.

According to Lim et al.'s (2001) study entitled "falls among institutionalised psycho-geriatric patients," the management of falls among institutionalised psycho-geriatric patients should be directed toward correcting reversible problems, strengthening exercises, medication evaluation, environmental improvement and behavioural change. Lim et al. (2001) stressed the fact that staff education, ongoing audits and increased supervision is extremely important in fall prevention. Bunn et al.'s (2014) study revealed that the staff's working with mentally ill patients need access to evidence about fall prevention for the psycho-geriatric patients to support their practice. Bunn et al. (2014) stated that staff members may be aware of the risk factors for falls; however, strategies to prevent falls usually include having to choose between management strategies such as restraint and observation over the interventions that directly benefit the psycho-geriatric patient which would increase balance and strength. Van Doorn et al.'s (2003) study results revealed that fall prevention methods like strength training and exercise programs could be difficult to residents with dementia, and many such interventions have not been tested on persons with dementia.

Struksnes et al. (2011) discovered that the nurses that look after psycho-geriatric patients have mentioned that the staff-to-psycho-geriatric patients' ratio is an indirect cause for falls. Struksnes et al. (2011) added that insufficient staff numbers affects the staff care priorities on a daily basis. If the care unit is understaffed, it forces the available staff to prioritise patient basic needs over the discussion of systematic routines for fall prevention and implementation. While Pellfolk et al.'s (2009) study which was conducted over a six-month period in northern Sweden using a sample of 160 residents living in 20 group accommodations for people with dementia, revealed that there is no difference between fallers and non-fallers regarding staff to patient ratio. Pellfolk et al.'s (2009) findings revealed that important factors for successful fall management are communication, management policies and team work. Clarke et al.'s (2010) study added that psychiatric patients in an institution have unique fall risk factors, and these fall risk factors need specialised care, which has to be provided by

specialised health practitioners. South African researchers could assist in providing information about specialised fall prevention programmes that could be tested and implemented.

2.5 Fall risk factors in the psycho-geriatric and dementia population

According to Lim et al.'s, (2001) study results, institutionalised psycho-geriatric patients fall more often, but there are fewer studies about them. Van Doorn et al.'s (2003) study findings revealed that suffering from a dementia disease alone exposes the sufferer to falls. In addition, although most falls do not cause injuries, because residents with dementia fall more often than those residents without dementia, they are prone to develop serious injuries with recurrent falls. Fernando et al.'s (2017) study findings added that the psycho-geriatric and dementia population have the same intrinsic and extrinsic fall risk factors as older adults without mental illness. However, the psycho-geriatric and dementia population have additional unique fall risk factors due to mental illness, which makes their fall risk higher than the elderly person without dementia. Fernando et al.'s (2017) mentioned the unique fall risk factors for psycho-geriatric and dementia population as wandering, inability to recognise danger of fall and anti-psychotic medication, verbally disruptive and attention seeking behaviour, cortical changes, severity of dementia, decreased visual perception and caregiver burden. Alshammari et al.'s (2018) study reported the findings that were conducted in Canada (2014) which discovered that the risk of suffering a fall is greater in individuals with multiple chronic conditions compared to those with none.

The Poster, Pelletier, and Kay (1991) study supported the fact that there is a higher fall rate among psycho-geriatric patients in a psychiatric hospital when compared to patients without mental illness. Hartikainem et al.'s (2007) study findings stated that the risk for falls is increased by using central nervous system drugs. In addition, Mehta et al.'s (2010) study results revealed that extrapyramidal symptoms and tardive dyskinesia are due to anti-psychotic treatment. Both extrapyramidal symptoms and tardive dyskinesia result in a weak gait, which exposes psycho-geriatric residents' to the risk of falls. According to Kearney et al.'s (2013) study results, executive dysfunction in older adults results in a weak gait, which exposes psycho-geriatric

residents' to falls. The above studies indicated that there is a significant need to prevent falls in the psycho-geriatric population.

2.6 Fall prevention practices for the psycho-geriatric population

The researcher was persuaded by the results of previous studies that revealed the high fall risk in the psycho-geriatric population to find out what the nurses' and care workers' fall prevention practices were, and discover if the nurses' and care workers' interventions were effective in preventing falls in a dementia care centre. Bunn et al.'s (2014) study findings revealed that in a mental health setting in England 36000 falls are reported annually. Their study revealed that the same numbers of falls and injuries in mental health settings of other countries (Australia and USA) are reported. This is an indication that more trials need to be conducted on fall prevention practices in the psycho-geriatric population in South Africa and globally.

The Public Health Agency of Canada (2005) discovered that injuries that make older people stay in hospital for some time are due to falls. According to the study by Herman, Gallagher and Scott (2006), 50% of minor injuries sustained by older people are due to falls, and 25% of serious injuries, such as fracture or a sprain which are sustained by the older people, are also as a result of a fall. The Public Health Agency of Canada (2005) further discovered that falls in older people are responsible for 95% of hip fractures, and older people who have sustained a fracture due to a fall die within a year. Various studies, including Fernando et al.'s (2017) and Allan et al.'s (2009), agree that falls in older people cause mortality and morbidity. Van Doorn et al.'s (2003) study revealed the misery and frustration that is experienced by the psycho-geriatric population after a fall, such as loss of function, self-imposed functional limitations caused by fear of falling and discouragement of activity by care givers.

2.7 Nursing staff experiences with psycho-geriatric fall prevention

Struksnes et al.'s (2011) study revealed that situations that cause fall risk to cognitively impaired people are well known to nursing staff; however, prevention of falls in people with cognitive impairment remains a challenge. Struksnes et al. (2011) further discovered that there is a high level of stress among the nursing staff that looks after

people with cognitive impairment, because the nursing staff feels responsible for the residents' safety. There are few studies relating to nursing staff experiences about prevention of falls among psycho-geriatric people.

2.8 Knowledge gap

Research on fall prevention in the psycho-geriatric population residing in a psychiatric institution is scarce in South Africa. There are few studies on nursing staff's fall prevention practices or interventions for psycho-geriatric people admitted in a mental institution in South Africa.

2.9 Conclusion

This chapter provided an overview of the literature available globally, with emphasis on fall risk factors in the elderly population. It highlighted the prevalence of mental illness in the elderly population in South Africa and globally. Nurses' and care workers' fall prevention practices and experience was discussed, including fall related injuries and knowledge gap. The following chapter discusses the research methodology.

3 Research Design and Methodology

3.1 Introduction

This chapter addresses the research design and methodology. This includes the study setting, data collection methods and analysis processes for all the phases, study population and sampling. The data analysis processes carried out in both the phases of the study are also described. The measures taken to ensure validity, reliability and trustworthiness in the study are explained as are the ethical considerations that were made in the study.

3.2 Research design

The study used a mixed methods design; the type of mixed methods was a sequential explanatory design. In Grove, Burns and Gray (2013) there was confirmation by Coward (1990), Creswell (2009), Duffy (1987), Marshall and Rossman (2011), Mitchell (1986), Morse (1991), Myers and Haase (1989), Patton (2002), and Porter (1989) that mixed methods research contains elements of both qualitative and quantitative approaches. In this study, the sequential explanatory method was appropriate because there was a need for both approaches. The quantitative part (phase one) assisted in the evaluation of the fall risk of the psycho-geriatric residents and the qualitative part (phase two) explored the nurses and the care workers practices in fall prevention and their educational needs regarding fall prevention in order to be able to integrate these in phase three (integration phase). The phase three (integration phase) was aimed at identifying any possible relationship between phase one and two. In this study, the sequential explanatory method was appropriate. Creswell (2003) explains the sequential explanatory design as the collection and analysis of quantitative data, followed by the collection and analysis of qualitative data. The results were integrated during phase three (integration phase) of the study. The purpose of this method of data collection was for the researcher to use results of the quantitative component to explain and interpret the results of the qualitative component of the research.

Phase one was the quantitative descriptive phase. According to Grove, Burns and Gray (2013), quantitative descriptive research is the investigation and reporting of an event in reality to generate new knowledge about topics where limited research has been conducted. This phase consisted of a structured observation of the psycho-geriatric residents using the Morse Fall Scale (Appendix A) to calculate the psycho-geriatric residents' fall risk score.

Phase Two was a qualitative exploratory phase. According to Grove, Burns and Gray (2013), qualitative exploratory studies are conducted to address a problem in need of a solution. Phase two consisted of group interviews aimed at finding out what the nurses and care workers are doing to prevent falls, and their perceived effectiveness for the psycho-geriatric residents in a dementia care centre, and what are their educational needs regarding fall prevention. Fontana and Frey (1994) defined group interviews as an orderly way of questioning several individuals at the same time in a formal or an informal setting. The researcher could not meet the criteria to conduct focus groups as initially planned because the staff could not leave the psycho-geriatric residents they were allocated to. The researcher had to go to the houses they were allocated to. The number of participants in each house determined the people that were available to participate. There were three participants in each house which made it impossible to conduct the focus group. Group interviews became appropriate because only three or four individuals could be interviewed in their individual houses.

In the Phase 3 (Integration phase) the researcher explored and explained the relationship between the nurses' and care workers' fall prevention practices and educational needs and the psycho-geriatric residents fall risks the researcher found when assessing the psycho-geriatric residents in Phase one. The researcher used the qualitative data (preventative measures and educational needs) to explain the quantitative results (potential causes of fall). According to Creswell (2003) in Hanson et al. (2005), data analysis (or integration) can occur at any point, and in this study it was done at the end of Phases One and Two.

OBJECTIVE	DATA COLLECTION METHODS	RESEARCH APPROACH	PHASES
To describe the fall risk of the psycho-geriatric residents of a dementia care centre in Gauteng using the Morse Fall Scale.	Structured observation	Quantitative Approach	Phase one
To explore nurses' and care workers' fall prevention practices and their perceived effectiveness for the psycho-geriatric residents in a dementia care centre in Gauteng.	Group interviews	Qualitative Approach	Phase Two
To explore nurses' and care workers' educational needs regarding fall prevention.	Group interviews	Qualitative Approach	Phase Two
To explore and explain the relationship between the nurses' and care workers' prevention practices and educational needs and the psycho-geriatric residents' fall risk.	Sequential Mixed methods	Quantitative and qualitative approach	Phase Three

3.3 Research setting and population

3.3.1 Research setting

Kerlinger and Lee (2000) describe a research setting as a location where a study is conducted, which may include a natural setting, which means an uncontrolled, real life situation. The study was conducted at a dementia care centre in Gauteng. This study setting was purposively selected as it was one of the few dementia care centres in Gauteng and had residents that were at risk for falling. The dementia care centre can accommodate a total of sixty-one (61) psycho-geriatric residents, but only had forty-one (41) psycho-geriatric residents at the time of the study. The dementia care centre is privately owned, situated in an up-market area.

The dementia care centre has four houses (house A – D) each house had approximately 9 – 11 psycho-geriatric residents residing there. The number of

allocated staff members for a day shift per house was one enrolled nursing assistant and two care workers. Two professional nurses are on duty on daily basis are allocated to all four houses and are based in an office. The participants' mood was low because of the unexpected sad news about their nursing service manager who was forced to take a long sick leave due to sudden ill health.

The researcher conducted group interviews for three staff members per house in their area of work, because the staff members could not leave the psycho-geriatric residents unsupervised. All the conducted group interviews went well, despite the fact that there was some noise and a couple of disturbances from the psycho-geriatric residents, however the researcher managed to obtain valuable information from the participants. The professional nurses were also interviewed at an alternative nurses' station where they work. Eight group interviews were conducted. The researcher managed to get one large group interview in the hall where most mobile psycho-geriatric residents go during the day to socialise with other friends.

There were renovations that were taking place in the dementia care centre during data collection, the nurses and care workers had to be moved to other locations within the building to accommodate the renovations in certain areas of the houses. Some houses were temporarily congested because of renovations, including the alternative nurses' station that was used by the professional nurses.

3.3.2 Research Population - Phase one

According to Grove, Burns and Gray (2013), a population is a particular group of individuals with similar characteristics selected for a study. The target population are individuals who meet the sampling criteria. The study population was forty-one (41) psycho-geriatric residents.

3.4 Sampling – Phase 1

Sampling is the selection of people with which to conduct a study, Grove, Burns, and Gray (2013). The participants in the sample were selected to meet the specific criteria.

The sample size was twenty-eight (28) psycho-geriatric residents (68.2%). In this phase, census sampling was used as the sampling method. In census sampling the population and sample are the same. According to Molenberghs (2004), census sampling is when the whole population of persons is included. The intended sample size was therefore 41 psycho-geriatric residents (100%), however, consent to take part in the study had to be granted by the family member's first to protect the psycho-geriatric residents from any form of abuse of their rights by the researcher. This reduced the sample to 28 instead of 41. Census sampling was chosen as the population is relatively small.

Inclusion Criteria: All psycho-geriatric residents' whose families agreed to their inclusion by signing the consent form on their behalf.

3.5 Data collection and research tools/ instruments

3.5.1 Data collection - Phase 1

In Phase one, the Morse Fall Scale (Appendix A) was used to conduct structured observations of the psycho-geriatric residents. The Morse Fall Scale has six questions, and each question is scored "yes" or "no". A "no" answer always scores zero, and a "yes" answer scores a number ranging from 15 to 30, according to the Scale. A score of less than 25 shows low risk for falls, a score of 25 – 45 shows moderate risk for falls and a score above 45 shows a high risk for falls. The potential intrinsic causes of falls are yielded by the scale.

The Morse Fall Scale is used in most South African private hospitals and state hospitals. The reason for using it is that it is a valid measure of fall risk. The Morse Fall Scale total score is used to predict future falls. According to Van Kan, Mancini and Verghese's (2009) study, which focused on the three most commonly, used fall risk assessments; it was found to be the best. It is easy to use, takes less than a minute to administer the assessment and provides actionable results. In this study, the results of the assessment indicated whether a psycho-geriatric resident is at low-risk, medium-risk or high-risk for falls, and an appropriate fall prevention plan was recommended. The Morse Fall Scale is appropriate to psycho-geriatric residents

since their concentration span is very short because of their behavioural problems related to severe dementia.

3.5.2 Data collection steps:

In Phase one, a structured observation, using the Morse Fall Scale was conducted by the researcher of psycho-geriatric residents in the dementia care centre. Through the assistance of the dementia care centre manager, the researcher was given the contact details of the psycho-geriatric residents' next of kin, in strict confidence for the purpose of obtaining consent for the research study. Acknowledgement of receipt and agreement for contact details was signed by the researcher and the dementia care centre manager.

The researcher sent out request letters to family members, requesting them to allow their loved ones, residing in the dementia care centre, to participate in the study. The consent forms and information letters were also sent to all the psycho-geriatric families via emails before conducting the study.

The researcher went to each psycho-geriatric resident where they were seated, to complete the Morse Fall Scale by observing them. The psycho-geriatric residents were seated in the living room or in their bedrooms on a recliner chair. The structured observations were conducted in the presence of a care worker or an enrolled nurse assistant. The researcher introduced herself to the participant, asked permission to ask questions and asked questions based on the Morse fall scale (Appendix A); some psycho-geriatric residents who were mobile were asked to perform activities like taking a short walk. Some answers provided by the psycho-geriatric residents to the questions were unclear; the researcher asked the care giver for clarity since care givers spent most of the time with the psycho-geriatric residents. The caregiver assisted in answering some of the questions about the psycho-geriatric resident. While asking questions, the researcher observed for the ability of the psycho-geriatric resident to ambulate, gait and the mental status. At the end of each structured observation a total score for each psycho-geriatric resident was calculated and a risk for falls was determined for each participant. The conducting of the structured observation took approximately two weeks for the researcher to complete. It commenced on the 5th December 2018 to 20 Dec 2018.

3.6 Data analysis - Phase one

Data analysis includes categorising, ordering, manipulating and summarising the data and describing them in meaningful terms (Burns and Grove, 2005 in Brink et al., 2013). Data was analysed separately for phase one and phase two.

Phase one: In this phase, after the data was collected it was organised and analysed. Data analysis commenced on the 21 December 2018 to the 25th December 2018. For analysis of the Morse Fall Scale results, descriptive statistics were used. Frequency tables were drawn up, and from these the data was presented in a bar graph. Phase one data yielded the individual fall risk assessment for the psycho-geriatric residents.

3.7 Reliability and validity – Phase one

The Morse Fall Scale instrument is a validated tool. Its validity was established by conducting three validation steps, the first step was a discrimination analysis to determine the discriminatory power of the scale. The second step was conducted using control groups to examine the cases that were incorrectly classified by the discrimination analysis. Lastly the third step included testing of the scale in three types of clinical settings: an acute care hospital (six units), long term care (psycho-geriatric unit and a nursing home) and eight adult units in a rehabilitation hospital, according to Morse et al. (1989). The Morse Fall Scale is widely used in health care institutions in Gauteng, but it is not used currently in the dementia care centre in which this study was conducted. To ensure reliability the fall risk structured observation of the psycho-geriatric residents was conducted by only the researcher in a standardized and consistent manner.

Validity of the research process:

According to Shedish, Cook and Campbell, 2002, in Perez (2019), validity aims to "approximate the truth of an inference". Validity in quantitative research is divided into four categories, i.e. internal, external, construct and statistical validity (Shedish, Cook and Campbell, 2002). Construct validity refers to the extent to which a researcher has accurately operationalized and identified how construct will be measured (Shedish,

Cook and Campbell, 2002), in Perez (2019). In this study the researcher conducted structured observations of the psycho-geriatric residents consistently by herself.

3.8 Research population - Phase two

The study population was forty five (45) nurses and care workers. All working in the dementia care centre.

3.9 Sampling - Phase two:

According to Grove, Burns and Gray (2013), purposive sampling is the method of choosing specific individuals for the study by the researcher. Purposive sampling was chosen in this phase because the nurses and the care workers work at the dementia care centre and directly look after the psycho-geriatric residents. The sample size was twenty four (24) nurses and care workers (53%): three (3) professional nurses, six (6) enrolled nursing assistants and fifteen (15) care workers.

Inclusion Criteria: Nurses and care workers with the experience of caring for psycho-geriatric residents in the dementia care centre for at least one year.

Exclusion Criteria:

- All nurses who were off duty could not participate.
- All nurses who were on night shift as data was collected during the day.
- One enrolled nursing assistant was not comfortable to take part in the research study therefore she was excluded.

3.10 Data collection and research tools/ instruments- Phase 2

3.10.1 Data collection – Phase 2

In Phase two, a semi-structured interview guide was used as a data collection instrument for group interviews, which were conducted instead of focus groups. The difference between the focus group and group interviews, the group interviews allowed the researcher to interview fewer participants in a formal or informal setting, while the focus group participants are supposed to be eight to twelve members.

3.10.2 Data collection steps – Phase 2

In Phase two, nurses and care workers working in the dementia care centre were invited to voluntarily participate in group interviews. Since nurses and care workers are shift workers, it depends on the allocation for that month whether they are working day shift or night shift. Data collection was collected from both day shifts. The day shift has two shifts, meaning, one shift works from Monday to Wednesday, the second shift works Thursday and Friday, and the first shift returns to work for the weekend. Eight group interviews were conducted: two of the groups were professional nurses only and six groups were care workers and enrolled nursing assistants from the four psycho-geriatric houses in the dementia care centre. Nurses and care worker group interviews were conducted per house. One session for each group interview was held. A semi-structured interview guide (Appendix F) was used to facilitate group interviews. The semi-structured interview guide had two questions with probes focussing on the nurses' and care workers' prevention practices, educational support, challenges and areas that need improvement. The semi-structured interview guide was developed based on the title of the research, the questions and the objectives of the research. The questions were appropriate to achieve the objectives of the study. Interview guide questions were developed to be open ended questions to encourage the participants to give more answers to the questions asked. The purpose of the questions was to answer the research questions.

The researcher used an information letter (Appendix G) to explain the study to the participants and stressed the fact that the participants should be willing to be part of the study. Informed (Appendix H) and audio recording (Appendix I) consents were explained and signed before each group interview.

The researcher moved from one house to house. The questions were asked in English and interpreted in vernacular for those who did not understand the question. The group interviews were conducted until data became saturated. Data saturation is when data begins to repeat what has already been found (Grove, Burns and Gray, 2013). Data saturation was reached with the first day shift participants, which was four group interviews; however, the researcher continued collecting data from the second shift participants with the hope of getting more information. Limited information was obtained from the participants during group interviews; there was a lot of repetition of the same information from each group as if the groups were prepared on how to

answer the questions asked. The conducting of the group interviews took two weeks for the researcher to complete. It commenced on the 27th December 2018 until the 4th January 2019.

3.11 Data analysis - Phase two

Phase two: Thematic analysis by Braun and Clark (2006) was used for data analysis in this phase. According to Braun and Clark (2006), thematic analysis is a method for identifying, analysing and reporting patterns within data. All six steps of thematic analysis were followed. The researcher commenced phase 2 data analysis on the 27th December 2018 after the initial group interviews to the 10th January 2019.

Thematic analysis was done according to the following steps:

Step 1 - The researcher listened to the audio recorder repeatedly to familiarise herself with data and transcribed the data verbatim while listening to the audio recorder to capture the participants voices.

Step 2 - After ensuring that all that was said was captured. The researcher coded the transcript manually using different colour highlighters, to highlight all different aspects of the data.

Step 3 - With all the coded and accumulated data, a long list of the different codes that were accumulated across the data set was available to the researcher. When all the coding was done, relevant extracts were selected to support the themes using a table with three headings (code, extracted data and themes).

Step 4 - The researcher reviewed and clarified the themes and the most relevant themes were selected. The themes were sorted until a suitable pattern was formed, which assisted the researcher to have a clear idea of what the different themes were and how they fitted together, and the overall story of the data findings.

Step 5 - The themes were defined, named and sorted until a satisfactory thematic map was constructed by the researcher.

Step 6 - A report was written by the researcher about the fully worked out themes.

Phase 3 (Integration phase): In this phase, the researcher analysed the possibility of a relationship between phase 1 and phase 2 results.

Process followed in obtaining relationships

The researcher analysed the Morse fall scale items that contributed towards the moderate fall risk in phase 1 and in phase 2 analysed the nurses and care workers fall prevention practices. Phase 1 and phase 2 resulted in the discovering of four relationships.

3.12 Trustworthiness – Phase two

Trustworthiness was applied in Phase two of the study. According to Shenton (2004), trustworthiness is when the reported study results are academically strong in such a way that when they are challenged, the study results in question should be able to provide a true reflection and the facts about the reported study results. In order to ensure integrity, the researcher ensured that only willing participants were recruited to participate in the study. Shenton (2004) stated that credibility is about "How congruent are the findings with reality? Inorder to ensure credibility, the researcher prolonged her engagement with the participants who were already familiar with her because they assisted her with answering of some questions during data collection in phase one (Appendix O). The results of the study were discussed with the research supervisor. Shenton (2004) stresses the fact that "transferability is when sufficient thick description of the phenomenon under investigation is provided to allow readers to have proper understanding of it, thereby enabling them to compare instances of the phenomenon described in the research report with those that have seen emerge in their situation. Transferability was ensured by providing thick description where the researcher was describing the behaviour, experiences and the context, so that the behaviour and experiences become meaningful to the outsider by providing detailed step-by-step processes of her experiences during data collection and through full descriptions of the study methods (Appendix O). Co-coding was applied; the researcher asked her supervisor to co-code the data with her to ensure that honesty is maintained. Dependability is the stability of data and production of consistent results over time under the same conditions. To ensure dependability, the researcher ensured that the

data was consistently analysed. The researcher's supervisor listened to the recorded audio of the group interview to confirm the facts.

3.13 Ethical considerations

In order to protect the rights of the participants, the following ethical considerations were implemented. The research proposal was approved by the Post-graduate Committee of the University of the Witwatersrand. Application for ethical clearance to the Human Research Ethics Committee (Medical) was made and a clearance certificate was granted (Appendix M). Permission for data collection for Phases One and Two was requested and obtained from the nursing service manager of the dementia care (Appendix K).

Permission to utilise the Morse Fall Scale (Appendix A) was granted by the author. Signed consent forms for permission to conduct observations of the psycho-geriatric residents were obtained from the families (Appendix D). Information sheets (Appendix B) and consent forms were sent to the families via emails and the psycho-geriatric residents were given the assent forms (Appendix E), however, the psycho-geriatric residents due to cognitive impairment, were unable to understand the content, and only two psycho-geriatric residents managed to give assent. The researcher relied on the consent given by the relatives. The cognitive impairment of the psycho-geriatric residents, which limits their decision-making ability, prevented them from signing consent for themselves; however, they were consulted to ensure that they were aware of the study.

The name of the dementia care centre was not printed anywhere in the research report to ensure anonymity. Participants names were not printed anywhere in the research report to ensure maintenance of confidentiality and anonymity. Codes were used instead of psycho-geriatric residents' names to ensure anonymity.

Each nurse and care worker who agreed to participate willingly was given an information sheet (Appendix G) and asked to sign the consent form (Appendix H) for taking part in the study and for their interviews to be recorded through an audio recorder (Appendix I). The participants were informed that any information obtained would be used for the purpose of the study and that their names would not be

disclosed. Participants were given an opportunity to withdraw from the study at any time without prejudice.

3.14 Conclusion

In this chapter, the research design, setting, population, sampling and data collection methods were discussed. Ethical consideration, reliability and validity, and trustworthiness were also discussed. Chapter 4 discusses the data, study results and findings.

4 Results and findings of the Study

4.1 Introduction

The purpose of this chapter is to report on and discuss the results for phase one of the study and findings for phases two and three. The phase one results are the results of the structured observations on psycho-geriatric residents. Phase two reports the results of the interviews with the nurses and care workers. Phase three integrates the results of phases one and two.

4.2 Phase one Results - Demographic details (Part 1 of Morse Fall Scale)

The demographic details of the phase one participants obtained utilising the Morse fall scale are summarised in Table 4-1.

Table 4-1: Frequencies and percentage obtained for demographic details

DEMOGRAPHIC DATA	FREQUENCY	PERCENTAGE
AGE IN YEARS		
60-70	6	21.4 %
71-80	7	25 %
81-90	14	50%
91-100	1	3.6 %
GENDER:		
Male	10	35.7%
Female	18	64.3%

DEMOGRAPHIC DATA	FREQUENCY	PERCENTAGE
PRIMARY DIAGNOSIS		
Alzheimer Dementia (AD)	12	42.9%
Vascular Dementia (VD)	6	21.4%
Atrial fibrillation dementia(AFD)	1	3.6%
Unspecified Dementia(UD)	4	4.3%
Bipolar Mood Disorder(BMD)	3	10.7%
Traumatic Brain Injury(TBI)	2	7.1%

4.2.1 Age

As illustrated in Table 4-1 above, this study revealed the ages of the psycho-geriatric participants ranged from 60 to 100 years with 50% (n=14) between 81 and 90 years. Figure 4.1 provides age distribution in graphical form.

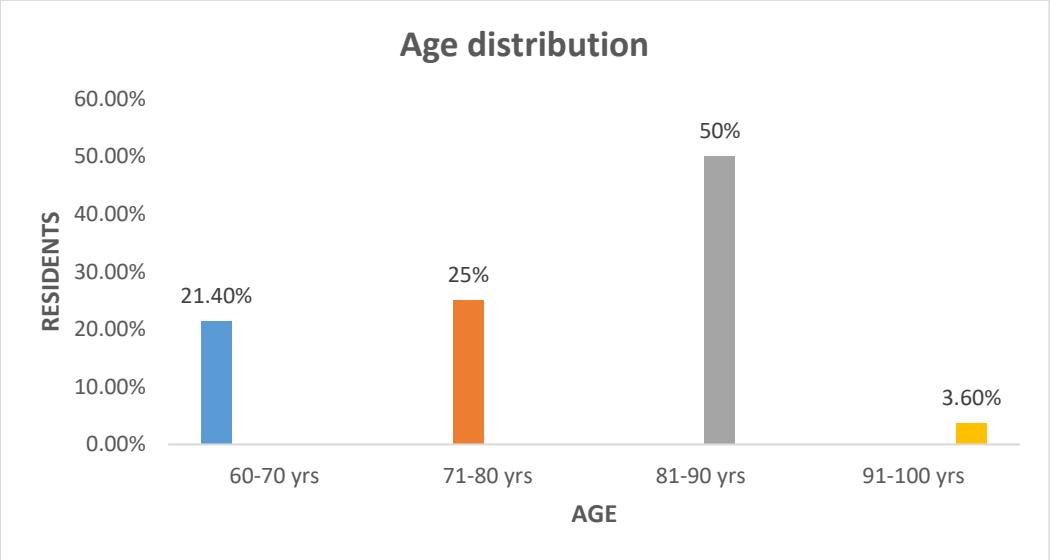


Figure 4.1 - Age distribution of psycho-geriatric residents

Age 91-100 years was the least most prevalent as only 3.6% (n=1) of the psycho-geriatric residents participants had it as their age. While age 60 – 80 years had a slight difference as 21.4% (n=6) and 25% (n=7) psycho-geriatric participants had this as their age.

4.2.2 Gender

This study revealed that there are more psycho-geriatric females than males in the dementia care centre as illustrated in figure 4.2.

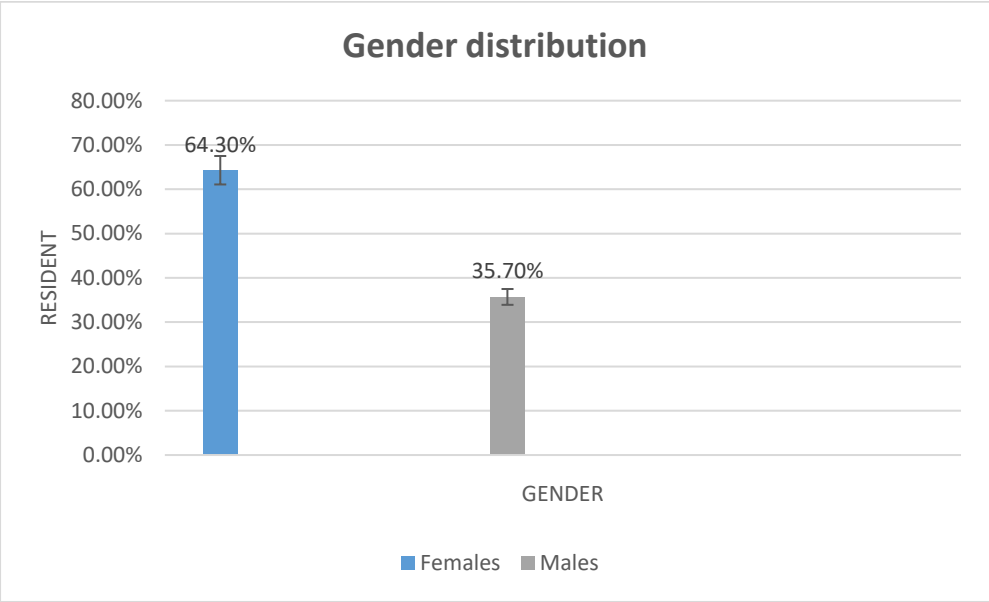


Figure 4.2 - Gender of the psycho-geriatric residents

4.2.3 Diagnosis

This study revealed that Alzheimer dementia was the most prevalent primary diagnosis (42.9% or n=12) among the participant psycho-geriatric residents. Atrial fibrillation dementia was the least most prevalent diagnosis as only 3.6% (n=1) of the participants had this as their diagnosis. The participants' primary diagnoses are illustrated in Figure 4.3.

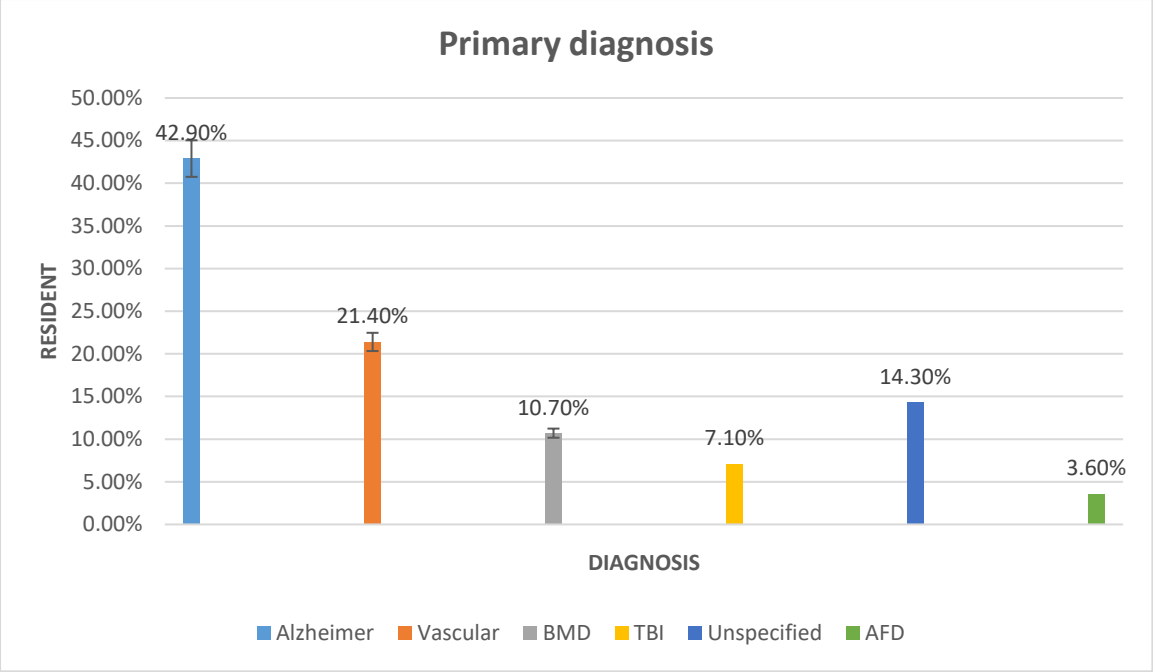


Figure 4.3 - Primary diagnosis of psycho-geriatric residents

Vascular dementia, bipolar mood disorder and traumatic brain injury

4.3 Phase one Results – Scores for Scale Items (Part 2 of Morse Fall Scale)

Data regarding each of the Morse fall scale items related to the participants is reported on and discussed in this section.

4.3.1 History of falling, immediate or within 3 months

Due to their impaired cognitive function, the participants in this study were unable to self-report if they had a fall, either immediate or within the past 3 months. The researcher therefore relied on the information given by the care workers and the nurses. According to the information from the care workers and nurses, 17.9 % (n=5) of the participants were known “fallers” because they fell almost every day. There was no documentation / incident form in the notes of participants who had fallen. This made it difficult for the researcher to give an accurate history score. However, those who had no fall record and no history of falling (according to the nurses and care workers) were scored zero for falls within three months. According to the care workers, a fall that does not result in any injury is not reported as a fall. The participants therefore fall more often than is ever reported by the staff, even though the history of fall percentage was discovered to be the lowest.

4.3.2 Secondary Diagnosis

This study revealed that the majority of the participants, 85.7% (n=24) were suffering from multiple secondary diagnoses. The dominant secondary diagnosis in the dementia care centre was hypertension (50% or n=14), followed by epilepsy (21.4 % or n=6), arthritis (21.4% or n=6) and high cholesterol (14.2% or n=4). Other less common medical diagnoses were cardiovascular disease (7% or n=2), diabetes (7% or n=2), asthma (7% or n=2), renal failure (3.6% or n=1), short bowel syndrome (3.6% or n=1), and atrial fibrillation (3.6% or n=1). All participants were found to be on several medications for both medical and mental conditions which are the most contributory factors for falling, even though the psycho-geriatric residents' history of falling was discovered to be the lowest.

4.3.3 Ambulatory Aid

The study results showed that nineteen (19 or 67.95%) of the participants were dependent on the nurses to meet their mobility needs due to being either bedridden, or using a wheel chair. Nine of the participants (32.1%) used crutches, canes or walkers. The furniture was not reported to be used as a form of an ambulation aid in the dementia care centre. In the study setting, the researcher found that the main reason for psycho-geriatric residents falling while using the walking aids was because they forgot how to use the walking aid due to cognitive impairment.

4.3.4 IV/heparin lock

While the IV/heparin lock is an item appearing on the Morse Fall Scale (Appendix A), none of the psycho-geriatric residents were on intravenous therapy in the study setting because they did not need it at the time. Had they been, there would have been a need to protect the residents from tripping and falling due to the intravenous line or apparatus.

4.3.5 Gait / transferring

The study results revealed that fourteen or 50% (n=14) of the participants were either bedridden or immobile and were dependent on nurses and care workers for transferring them from chair to bed or vice versa and for turnings. Twelve of the participants (42.9% or n=12) had a weak gait. This meant that they walked with short steps, shuffled when walking and/or had difficulty in getting up from the chair. If 50%

of the psycho-geriatric residents are dependent on nurses for transferring, risk for falling will be minimal due to the support received from the nurses.

4.3.6 Mental Status

The majority of the study participants (96.4 % or n=27) were psycho-geriatric residents who were unable to make a self-assessment of their ability to ambulate. It was discovered that most participants forgot their ambulatory limitations and some ignored their ambulatory limitations by claiming that they could walk independently to the bathroom, while in actual fact they needed assistance from the nurses and care workers. The percentages of residents with issues relating to each of the items on the Morse Fall Scale data are illustrated in Figure 4.4.

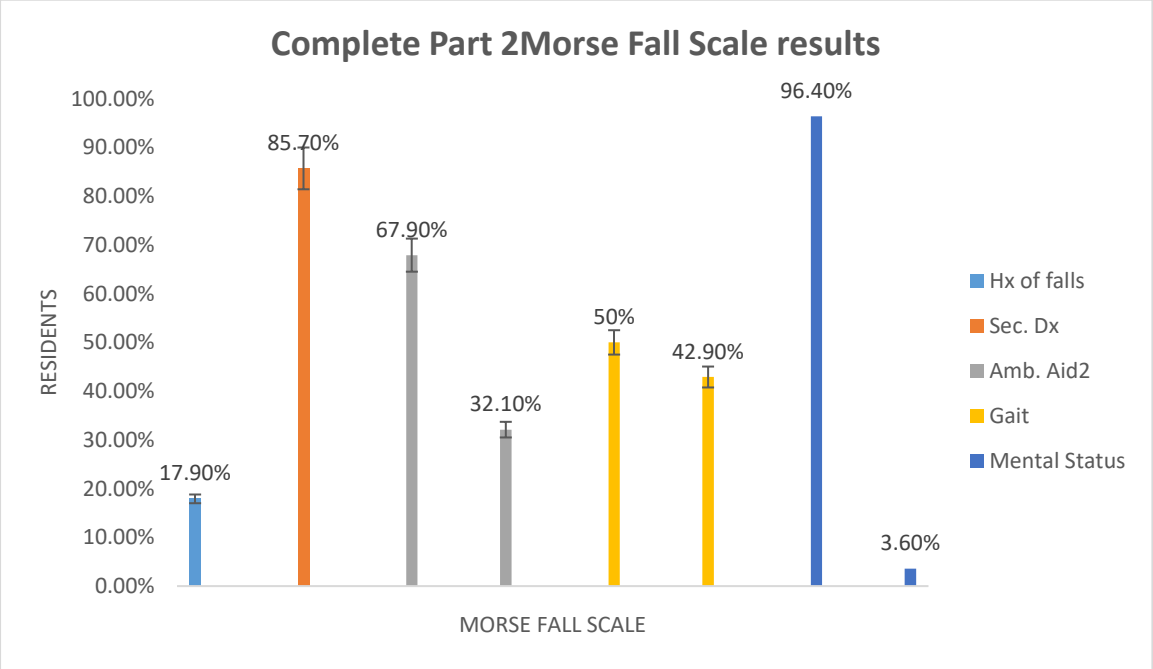


Figure 4.4 – Complete Part 2 Morse fall scale results

Figure 4.4 shows mental illness with forgetting limits to be the highest percentage at 96.40% (n=27) among the psycho-geriatric participants. While mental illness with well orientated psycho-geriatric participants was the least at 3.6% (n=1).

The total participant scores, frequencies and percentages for each item of the Morse Fall Scale (Appendix A) are illustrated in Table 4-3.

Table 4-2: Frequencies and percentage obtained for Morse Fall Scale data

MFS Item	Participants Score	Frequency	Percentage
History of falling, immediate or within 3 month	Yes - 25	5	17.9%
Secondary Diagnosis	Yes -15	24	85.7%
Ambulatory aid	None/bed rest/wheel chair/ nurse- 0	19	67.9%
	Crutches/cane/walker- 15	9	32.1%
	Furniture-30	0	0%
IV/heparin lock	No- 0	0	0%
Gait/transferring	Bedridden/Immobile- 0	14	50%
	Weak gait- 10	12	42.9%
Mental Status	Forgetting limits-	27	96.4%
	Orientated	1	3.6%

The psycho-geriatric participants that suffer from the medical conditions (secondary diagnosis) were the most prevalent at 85.7% (n=24) as illustrated in table 4.2.

4.4 Phase one Results - Fall Risk scores (Part 3 of Morse Fall Scale)

After conducting the structured observation for each participant, the total fall risk score for each participant was calculated and recorded on the Morse Fall Scale. This study revealed that the majority of participants in the study were of moderate risk for falling (82% or n=23). Four (14.30%) of the participants were at high risk and one (3.6%) was of a low fall risk level. This study results confirms that the dementia care centre therefore has residents of all three risk levels for falls, with the majority being at a moderate risk for falls. The high risk participants had severe physical and mental

impairment while low risk participants were mobile, independent with mild dementia symptoms. This means the fall prevention interventions should be tailored to suit the individual psycho-geriatric resident's level of risk. This data is shown in Figure 4.5.

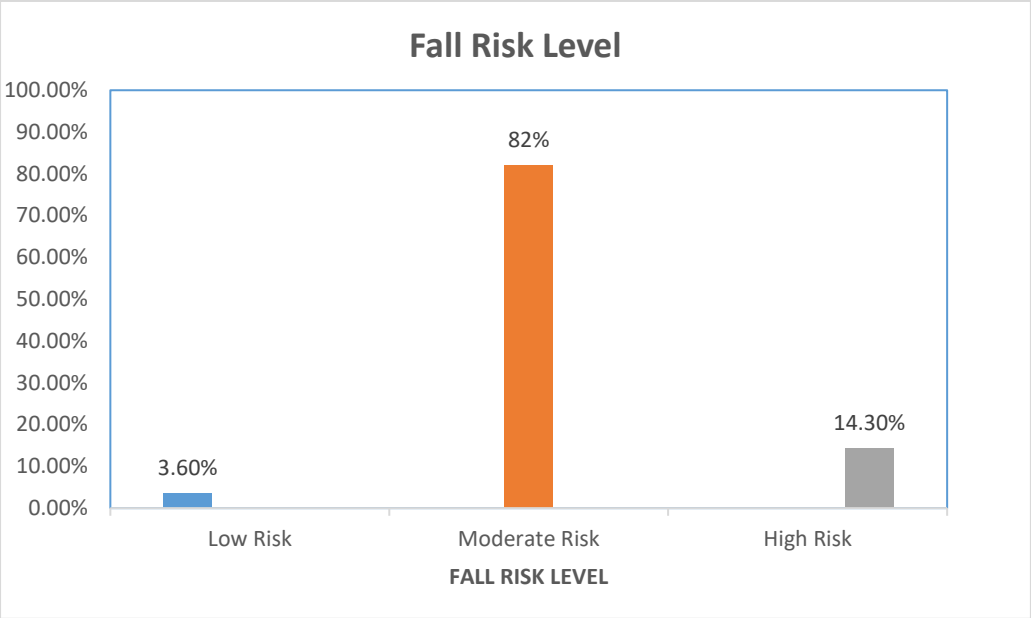


Figure 4.5 - Risk for falls in the dementia care centre

The least fall risk among psycho-geriatric residents' were a low risk for fall as only 3.6% (n=1) of participants were mobile without any form of assistance.

The frequencies and percentage found in the study population related to the participants' Morse Fall Scale score and the level of risk are illustrated in Table 4-3 below.

Table 4-3: Frequencies and percentage obtained for Morse Fall Scale score and the level of risk

MFS Item	Participants Score	Frequency	Percentage
PARTICIPANTS'	Less than 25	1	3.6%
MFS SCORE	25-45	23	82%
	Above 45	4	14.3%

PARTICIPANTS' RISK FOR FALLS	Low Risk	1	3.6%
	Moderate Risk	23	82%
	High Risk	4	14.3%

In the section below, the findings of Phase two of the study are reported on and discussed.

4.5 Phase two findings - Demographic details

Twenty-four participants took part in this phase of the study. The demographic data of these participants is shown in Table 4-4.

Table 4-4: Demographic data of participants of group interviews

Participant Code	Rank	Highest Qualifications	Years of experience	Age
P 1	Professional Nurse	Diploma in general nursing	1	38
P 2	Professional Nurse	Diploma in general nursing	6	48
P 3	Professional Nurse	Diploma in general nursing	2	59
N 1	Enrolled nursing assistant	Certificate (1 year)	24	56
N 2	Enrolled nursing assistant	Certificate (1 year)	12	52
N 3	Enrolled nursing assistant	Certificate (1 year)	5	30
N 4	Enrolled nursing assistant	Certificate (1 year)	2	33
N 5	Enrolled nursing assistant	Certificate (1 year)	2	31
N 6	Enrolled nursing assistant	Certificate (1 year)	1	28
C/W 1	Care worker	Certificate (6 months)	8	40
C/W 2	Care worker	Certificate (6 months)	10	47

Participant Code	Rank	Highest Qualifications	Years of experience	Age
C/W 3	Care worker	Certificate (6 months)	4	26
C/W 4	Care worker	Certificate (6 months)	2	26
C/W 5	Care worker	Certificate (6 months)	3	37
C/W 6	Care worker	Certificate (6 months)	3	43
C/W 7	Care worker	Certificate (6 months)	5	30
C/W 8	Care worker	Certificate (6 months)	6	39
C/W 9	Care worker	Certificate (6 months)	8	42
C/W 10	Care worker	Certificate (6 months)	4	27
C/W 11	Care worker	Certificate (6 months)	9	50
C/W 12	Care worker	Certificate (6 months)	2	45
C/W 13	Care worker	Certificate (6 months)	2	25
C/W 15	Care worker	Certificate (6 months)	6	36

4.5.1 Rank and Highest qualifications

This study revealed that fifteen (n=15, 62.5%) of the participants were in care worker positions possessing a six month certificate, followed by six (n=6, 25%) enrolled nursing assistants with one year certificates and only three (n=3, 12.5%) professional nurses possessing diplomas in nursing. Over 60% of the caring staff were non-professional staff.

4.5.2 Number of years working in the dementia care centre

The study findings showed that one of the participants (n=1, 4.2%) had over twenty-four (24) years of experience in dementia care centre. One (n=1, 4.2%) had twelve years' experience and the rest of the participants years of experience ranged from one year to ten years. Eight (n=8, 33.3%) had two years' or less experience. Over 70% of the caring staff had average experience of less than five years'.

4.5.3 Age

The study findings revealed that most participants were within the ages of 25 – 35 years (n=10, 41.6%). Eight (n=8, 33.3%) were between age 36 and 46 and six (n=6, 25 %) between the ages of 47 and 59 years.

4.6 Phase two findings - Themes and sub-themes

Three themes and eight sub-themes emerged from analysing the data collected during the group interviews. Each theme, with relevant codes and supporting extracts from the participants, is shown in Table 4-5.

Table 4-5: Themes and sub-themes

Theme	Sub-theme
Difficulties facing staff members'	• Violence from psycho-geriatric residents • Abuse from family members
Fall prevention challenges	• Staff shortages • Infrastructure challenges
Staff members educational needs	• Lack of fall prevention consciousness • Limited fall prevention training • Neglect of relieving staff members • Knowledge of fall prevention

4.6.1 Difficulties facing staff members'

4.6.1.1 Violence from psycho-geriatric residents

Violent attacks on staff members by the psycho-geriatric residents were mentioned by the participants. The participants spoke of incidences of violence while caring for psycho-geriatric residents. Participants reported that violence affects them physically and psychologically causing feelings of powerless, fearfulness, unhappiness, frustration, anger and withdrawal. Participants further revealed an increased in staff absenteeism due to fear of being attacked and some victims' work performance has deteriorated. The most vocal group on the violent attacks was the care workers and the enrolled nursing assistants' group. A participant shared the following:

"Sometimes residents become angry for no apparent reason, and tend to beat us with either a hot clap or a punch; it really hurts" (CW 6).

Another participant added:

“Residents don’t like it when we follow them outside, they become aggressive towards us” (CW5)

4.6.1.2 Abuse from family members

Incidents of verbal abuse from family members of the residents towards the nurses and care workers were reported to be high by all groups of participants. The stated reasons for verbal abuse towards the staff were unclear. According to the participants, the ongoing verbal abuse has left the staff members, who believe they are doing their best to deliver good service, confused, frustrated and not knowing what to do. One participant had this to say:

“The families like saying, in the morning I came and when I left my mother was happy, now I come back, my mum is upset, what did you do to her? They say this in an angry way, pointing fingers at us” (CW5)

Members of the professional nurses’ group reported that lack of knowledge by the families about the dementia condition might be the reason for ongoing verbal abuse towards the caregivers, because they lack understanding. Another participant had this to say:

“Families need to be educated about dementia so that they can understand that the aggressive behaviour of their loved ones is not caused by us” (PN2).

4.6.2 Fall prevention challenges

4.6.2.1 Staff Shortage

Shortage of staff emerged as one of the contributing factors to falls when staff members were asked about their daily challenges. Participants reported that most of the time they work hard to cover the daily routine because only three staff members are allocated for a house. They also reported that some staff members absent themselves because of exhaustion caused by work overload. Participants mentioned that workload has resulted in the staff members that are on duty having to do more

than they should or are able to as they try to close the gap. They elaborated that shortage of staff makes it impossible to carry out other duties. All groups reported they feel exhausted and burned out. One participant reported:

"This work of looking after psycho-geriatric residents is very hard, one is always exhausted" (CW5)

Another said:

"We male staff we bath this (these) guys in the morning, after their bath they go outside alone unsupervised because we must continue to bath other residents, like this guy Mr M can try to enter where it is not possible to enter, then fall or hurt himself " (CW6).

Another participant added:

"For now we are two but when my colleague comes back from lunch she is going to be alone. She can't keep an eye on Mrs B, Mrs C, and Mrs E and look for Mrs D who is getting up as I speak, it is not easy when you are left alone" (CW 11).

4.6.2.2 Infrastructure Challenges

Infrastructural challenges emerged as one of the main causes of falls in the dementia care centre. Participants reported that the outside yard is not flat, has uneven slopes which expose psycho-geriatric residents to tripping and falls. The staff reported that these challenges have a negative impact on their job, because it looks like they are not caring. One participant had this to say:

"There are slopes outside and is not levelled, residents fall especially when it's dark. (Nurse2).

Another participant added:

"There are also hanging trees that must be cut off because these trees scratch the residents and they fall on them" (Nurse 3).

4.6.3 Staff members educational needs

4.6.3.1 Lack of fall prevention consciousness

Fall prevention consciousness emerged as lacking from the participants. Participants were asked about the seriousness of the risk of falls, specifically the psycho-geriatric residents that are known to fall every day. The participants responded by expressing that known fallers do not get injured when they fall. This study revealed that a lack of fall prevention consciousness has resulted in staff ignoring fall prevention procedures from being followed in the dementia care centre.

One had this to say:

"Mr X falls every day because he does not want to sit down" (CW8).

Another participant added:

"Mrs Y goes all over; it is hard to follow her always, so she falls every time" (CW 9).

4.6.3.2 Limited fall prevention training

Staff members' health education needs emerged as an important theme for the delivery of quality nursing care. When participants were asked how often they attend fall prevention training in the dementia care centre, the participants reported that training for fall prevention is held once a year. It emerged that the limited training has resulted in the staff members forgetting the quality procedures of fall prevention, such as manual transfer technique of a psycho-geriatric resident and patients with dementia.

One participant had this to say:

"Once a year they (teachers) do come and we learn about fall prevention" (CW11).

Another participant added:

"When a resident suddenly becomes physically weak and unable to get out of bed on his own, but was used to get up in the past, nurses and care workers usually do not know that the resident's condition has changed, they will want to force him/her to still get up, which usually results in falls. We all need training about dementia" (PN 1).

4.6.3.3 Neglect of relieving staff members

Deprivation of training for relieving nurses and care workers emerged as a prominent sub-theme. This study revealed that the relief staff members were the most neglected when it comes to all forms of training, including fall prevention training. This study also discovered that majority of the relief staff have been the relievers for more than three years, and do not get a chance for training. It has emerged from the study that the relief nurses have developed a low self-esteem, especially when a new procedure has been taught and she or he does not know it. A participant had this to say:

"As a reliever, I am not included in the training, because one day I work in this house and the other day in another house. I work in all other houses; I go where a staff member is absent every time" (CW 10).

Another participant added:

"Relieving nurses look after the psycho-geriatric residents when we go for training, because we cannot leave them alone" (Nurse 3).

4.6.3.4 Knowledge of fall prevention

When participants were asked about their daily practices on fall prevention, it emerged that there is some knowledge gap regarding fall prevention procedures. This study revealed that participants reported a low fall rate; however, this study has discovered that multiple falls are not reported due to lack of knowledge. One participant had this to say:

"*We have residents that fall every time but do not get injured.* (CW8)

Another participant added:

"When the resident wants to go outside, it becomes a problem because I must follow him/her, and if I'm alone I must leave other residents unsupervised. Like the resident who is moaning that side, she wants to go up and down, up and down and we are taught not to restrict them, but they fall when left alone" (Nurse 1)

4.7 Phase Three (Integration phase) Findings

Four relationships were discovered between phase one and phase two results. These were the following:

Relationship 1: Staff fear violent attacks by the psycho-geriatric residents which negatively impacts on rendering of quality care to the psycho-geriatric residents. It was noted in phase two results that the staff members fear maintaining close supervision in cases where a psycho-geriatric resident needs to be escorted outside to prevent him or her from falling. This lack of supervision could increase the fall risk of the psycho-geriatric residents.

Relationship 2: Inadequate psycho-geriatric residents' supervision due to few staff members expected to supervise restless psycho-geriatric residents was discovered. Work overload and shortage of staff could make it impossible for staff members to efficiently supervise all psycho-geriatric residents, especially the ones that are restless and go all over the premises.

Relationship 3: There was difficulty in preventing psycho-geriatric residents from falling when escorted by care workers during outside walks due to uneven grounds which were designed to make the garden look beautiful. The psycho-geriatric residents' unsteady gait also makes them trip during garden walks.

Relationship 4: Lack of fall prevention consciousness by staff due to inadequate fall prevention training. It was noted from phase two results that there was a failure to take fall prevention precautionary measures seriously by the nurses and care workers. This is due to the insufficient fall prevention training that is rendered once a year according to the staff responses in phase two. This might result in serious fall injuries experienced by the psycho-geriatric residents because they often fall and are ignored.

4.8 Discussion of Results and Findings

This study aimed at exploring and describing any possible relationship between the fall risk of the psycho-geriatric residents of a dementia care centre in Gauteng and the nature of the staff's fall prevention practices and educational needs. This was done in

order to find out the implementation processes for the prevention of falls in the dementia care centre.

4.8.1 Discussion of Phase one results - Fall risk

This study's results revealed that the majority of psycho-geriatric residents in the dementia care centre have a moderate risk for falling. Four psycho-geriatric residents had a high risk for falling and one participant had a low fall risk level. The level of risk was determined based on the total score. A total score of less than 25 indicates a low risk level for falls. Participants with a score of less than 25 require basic nursing care. Where the total score of participants was 25-45, the risk level for falls was moderate, which indicated that the participants in this category require routine screening for fall risk factors and an individually targeted fall prevention program, Goodwin (2014) in Pfortmueller et al. (2014). Participants with a score of above 45 are at a high risk of falling and require continuous individual fall risk prevention interventions to be implemented according to the needs and capabilities of the psycho-geriatric resident, Gabrijeluc et al. (2016).

4.8.2 Fall risk factors

In this study the fall risk factors were revealed as Alzheimer dementia diagnosis, old age, history of falling, diagnosis of secondary disease/s, use of walking aids, weak gait and forgetting limits by psycho-geriatric residents. Alzheimer dementia was the most common primary mental diagnosis in the dementia care centre. This is similar to the findings determined by the World Health Organisation (2017) that Alzheimer dementia is the most common of all the mental and neurological disorders in the elderly population. Alzheimer dementia has been found to be the main risk factor to falls by many studies. In the current study old age is revealed as a risk factor for falls because old age contributes to ill health, ill health contributes to weak gait and weak gait results in falls. Alshammari et al (2018) study findings agrees that age is strongly associated with falls in that the prevalence of falls progressively increased with age. Fall history was identified as a risk factor for falls; in the present study 17.9% of psycho-geriatric residents were identified as known fallers, meaning they have a history of recurrent

falls. Fernando et al. (2017) confirms that a history of any fall by an elderly in the previous year exposes the same elderly to a large risk for injurious fall. The percentage evidence of known fallers in the study could have produced a different outcome if all the psycho-geriatric residents that fall were recorded. This study revealed multiple secondary diagnoses amongst psycho-geriatric residents as a fall risk factor. The Alshammari et al. (2018) study reported the findings that were conducted in Canada (2014) which discovered that the risk of suffering a fall is greater in individuals with multiple chronic conditions compared to those with none. The participants who have more than one medical condition were found to be on several medications for medical and mental conditions, which exposed them to falls due to polypharmacy and the likely hood of drug interaction. Zia et al. (2015) study have discovered that taking four or more drugs in the elderly is associated with increased incidence of falls, recurrent falls and injurious falls. A walking aid was revealed as a fall risk factor in this study, Sterke and colleagues in Fernando et al.'s (2017) study are in agreement with this, they discovered that ambulation with a mobility aid was associated with an increased fall risk. A weak gait was also revealed as a fall risk factor in this study, this is similar to Alshammari et al.'s (2018) study that discovered an increased risk of falling if the elderly individual happens to suffer from gait impairment. Wandering psycho-geriatric residents were revealed as at high risk for falls in this study due to reports that participants walk outside the garden which has unlevelled slopes. Forgetting limits by the psycho-geriatric residents was revealed as a fall risk factor in the study, it was discovered that participants forgot to use their walking aids and they also forgot their ambulation limitations when they want to walk due to cognitive impairment.

4.9 Discussion Phase two Findings

Phase two explored nurses and care workers fall prevention practices and perceived effectiveness and their educational needs.

4.9.1 Staff members' demographic details

This study revealed that the majority of staff members in the dementia care centre are care workers and enrolled nursing assistants followed by few professional nurses. This is in agreement with McGilton et al.'s (2011) study in McGilton et al. (2014) which confirms that long-term care nursing homes for the aged has a decrease in registered nursing staff available to provide skilled care, despite new demands for accountability of the registered nursing staff.

The majority of the caring staff have undergone a six months care training course which is a minimum level certificate, and allows them to assist psycho-geriatric residents with activities of daily living which include bathing, dressing, feeding, incontinence care and ambulation. Backhaus et al.'s (2014) study is in agreement with the six months care training course which includes caring for the elderly and frail. The nursing assistant qualification allows the nursing assistants to provide the majority of care needed by the residents, especially activities of daily living, which include bathing, dressing, feeding, incontinence care and ambulation. This study has revealed that care workers undertake the same duties as nursing assistants under the nursing assistants' supervision. This study has found that nearly 50% of the care workers and nursing assistants had worked in the dementia care centre for more than five years. The professional nurses' years of experience working in the dementia care centre are the lowest when compared with other caring staff. Neff et al. (2011) study in McGilton et al.'s (2014) agrees that retention of registered nursing staff in long-term care is an ongoing concern given the high rate of resignation of such staff from this healthcare setting.

4.9.2 Themes and subthemes discussion - Staff members are faced with difficulties

This study revealed that the majority of participants in the dementia care centre were exposed to workplace violence that was physical (assault), psychological (verbal aggression) and emotional (blaming). Niu et al (2019) study discovered that 55.7% of nurses had experienced physical violence and 82.1% had experience psychological violence. This study further reveals that the perpetrators of the violence are psycho-

geriatric residents and their families. Niu et al. (2019) agree that most of the perpetrators of violence towards caregivers are patients' and their families. The current study has discovered that nursing assistants and care workers group reported more about the violence that they are experiencing on daily basis from the psycho-geriatric residents, as compared with the professional nurses' group, who were less vocal about the violent acts. Niu et al.'s (2019) confirms that nurses that provide direct patient care, and interact more frequently with patients and their families are exposed to direct violent attacks from patients and/or families.

4.9.3 Fall prevention challenges

This study has revealed that one of the major challenges in prevention of falls in the dementia care centre is the shortage of nurses and care workers. Shemdoe et al.'s (2016) study confirms that the shortage of caring staff is a common factor in the African continent; and further discovered that United Republic of Tanzania has 56% of health care shortages. The current study also revealed that overworked staff resolves to absenting themselves from work due to exhaustion. Shemdoe et al.'s (2016) study confirms that overwhelming workloads are the major factors that push health workers to contemplate leaving their jobs. The current study further discovered that shortage of staff impacts negatively in the supervision of psycho-geriatric residents because it becomes impossible for close supervision of the psycho-geriatric residents to be maintained. This is in line with Jarrar et al.'s (2017) confirmation that the care outcome of a nurse whose workload is high is consequently poor. The present study further discovered that nurses and care workers are not concerned about the psycho-geriatric residents that fall regularly because their falls have not caused any serious harm. Vu et al. (2014) in Chan and Chan (2018) warns that even though the majority of falls in nursing homes do not result in serious injury, 10-25% result in hospital admission and/or fractures. The current study revealed that fall prevention training for permanent nurses and care workers is done annually in the dementia care centre, and further discovered that relieving nurses and care workers that work regularly at the dementia care centre are not included in all the training including fall prevention training. Meyer et al. (2017) agrees that there is an existing knowledge gap for community care health professionals about falls and effective fall prevention approaches for people living with

dementia. Meyer et al.'s (2017) study further suggested the implementation of recommended best practice guidelines which are person-centred care, environmental modification, raising knowledge and awareness, and changing behaviour and practice. The Dementia care centre's outside garden environment was revealed as a risk factor for falls by the staff. Alshammari et al. (2018) study confirms that the strongest association with falls were with environmental hazards where 81.7% of people exposed to environmental hazards had a fall.

4.9.4 Fall prevention knowledge

According to the findings, there was an indication that nurses and care workers have some knowledge gaps about the prevention of falls. The study identified a need for updated regular education and training regarding fall prevention procedures and dementia. The study revealed that training on fall prevention is done once a year in the dementia care centre. DiZazzo-Miller et al's study (2014) support regular learning of caregiving skills under the guidance of experienced professionals which improves the quality of patient care and reduce the incidence of preventable injuries.

4.10 Conclusion

In this chapter the results of Phase one, findings of Phase two and the relationships of phase three (Integration phase) of the study were discussed and supported with literature. Chapter 5 concludes the study, discusses limitations and provides further recommendations.

5 Conclusion, Summary, Findings, Limitations and Recommendations

5.1 Introduction

This chapter provides a summary of the research results and main findings of the study. It includes the limitations of the study, implications and recommendations for

the prevention of falls in the dementia care centre and recommendations for further research.

5.2 Summary of the research results and findings

There were four objectives to this study viz:

- To describe the fall risk of the psycho-geriatric residents of a dementia care centre in Gauteng using the Morse Fall Scale (Appendix A).
- To explore nurses' and care workers' fall prevention practices and their perceived effectiveness for the psycho-geriatric residents in a dementia care centre in Gauteng.
- To explore nurses' and care workers' educational needs regarding fall prevention.
- To explore and explain the relationship between the nurses' and care workers' prevention practices and educational needs and the psycho-geriatric residents' fall risk.

This was the first study of this kind to be conducted in the dementia care centre in Gauteng.

5.2.1 Phase one results

In phase one, the demographics of the study participants showed that 50% of the psycho-geriatric participants were between 81-90 years and the most common primary diagnosis was Alzheimer dementia at 42.9%. The structured observations that were conducted using Morse Fall Scale (Appendix A) observed five fall items which were history of falling, secondary diagnosis, ambulatory aid, gait and mental status. Under the history of falling 17.9% were found to be known fallers. The majority of the participants (85.7%) were found to be suffering from more than two medical diagnoses and were taking several medications for both medical and mental conditions. Zia et al. (2015) study has confirmed that polypharmacy exposes the psycho-geriatric residents to drug interaction and sedation effects which contribute to a fall. Under the ambulatory aid 32% of participants had ambulation challenges and depended on an ambulation aid for walking due to either a weak gait or balancing problems. Bedridden

participants were found to have a lower risk for falling because they were dependant on the nurses and care workers for transferring assistance. Mental status was revealed as the main contributory factor to falls because the participants tend to forget their mobility limitations and try to walk unaided even when they have no ability to do so. Most of the psycho-geriatric residents (82%) had a moderate risk for falling.

5.2.2 Phase two findings

In phase two, the highest qualified nurses had a diploma in nursing and the majority of the staff members possessed a health care worker certificate. Most of the staff members (70%) had an average work experience which is less than five years. The participants' age was from 25 years to 59 years. Three themes were discovered out of data collection, these were difficulties facing staff members, fall prevention challenges and staff members education needs. Eight subthemes also emerged from data collection; these were violence from psycho-geriatric residents, abuse from family members, staff shortage, infrastructure challenge, lack of fall prevention consciousness, limited fall prevention training, neglect of relieving staff members and knowledge of fall prevention. The study identified a need for updated regular education and training regarding fall prevention policies.

5.2.3 Phase three findings

There were four relationships discovered that captured the link between the nurses' and care workers' prevention practices and educational needs and the psycho-geriatric residents' fall risk. These were the following:

Relationship 1: Staff fear violent attacks by the psycho-geriatric residents which negatively impacts on rendering of quality care to the psycho-geriatric residents. It was noted in phase two results that the staff members fear maintaining close supervision in cases where a psycho-geriatric resident needs to be escorted outside to prevent him or her from falling. This lack of supervision could increase the fall risk of the psycho-geriatric residents.

Relationship 2: Inadequate psycho-geriatric residents' supervision due to few staff members expected to supervise restless psycho-geriatric residents was discovered.

Work overload and shortage of staff could make it impossible for staff members to efficiently supervise all psycho-geriatric residents, especially the ones that are restless and go all over the premises.

Relationship 3: There was difficulty in preventing psycho-geriatric residents from falling when escorted by care workers during outside walks due to uneven grounds which were designed to make the garden look beautiful. The psycho-geriatric residents' unsteady gait also makes them trip during garden walks.

Relationship 4: Lack of fall prevention consciousness by staff due to inadequate fall prevention training. It was noted from phase two results that there was a failure to take fall prevention precautionary measures seriously by the nurses and care workers. This is due to the insufficient fall prevention training that is rendered once a year according to the staff responses in phase two. This might result in serious fall injuries experienced by the psycho-geriatric residents because they often fall and are ignored.

5.3 Limitations

In terms of the methodological limitations of this study, the first limitation was related to the sample size. The quantitative data was limited to 28 participants. This was partly due to the difficulty in obtaining consent from relatives, as the residents were not able to give consent themselves due to the nature of their disabilities. Based on the fact that the residents' fall risk were mainly found to be "moderate" with a few outliers, it seems unlikely that a larger sample would have resulted in significantly different scores to the ones obtained though. A lack of data, particularly related to the history of falls, resulted in difficulty in completing the falls observations accurately. The researcher had to rely on staff members for information as the residents were not able to give accurate information, and it is possible that staff members understated the residents' history of falls due to social desirability bias. Paul (1984) in Latkin et al (2017) defines social desirability bias as the tendency to underreport socially undesirable attitudes and behaviours and to over report more desirable attributes. Data saturation was reached with the first day shift participants because limited information was obtained from the participants during group interviews; there was a lot of repetition of the same information from each group as if the groups were prepared on how to answer the questions asked. Group interviews were conducted

instead of focus group. Group interviews allowed the researcher to interview fewer participants because it was not possible to interview eight participants at once. Participants were allocated in different houses and they could not leave the psycho-geriatric residents' unsupervised during the interview session.

5.4 Recommendations

On the basis of the present study, the researcher recommends the following regarding prevention of falls:

5.4.1 Recommendations for nursing practice:

- Counselling and support groups should be commenced to assist and support staff members who have been subjected to violence and abuse. This will encourage the staff members to work without fear. In so doing, the shortage of staff could be reduced and the psycho-geriatric residents will be closely supervised for falls.

- A zero-tolerance policy of staff abuse by the family members should be implemented to reduce abusive incidents from families. Family members should be educated on what to expect from the dementia care centre services. This will help the staff members to do their work confidently. And they will be able to implement fall prevention measures fearlessly.

- Tailoring of the uneven grounds to accommodate the daily walks of the psycho-geriatric residents will make it easy for nurses and care workers to manage the psycho-geriatric residents when outside the dementia care centre.

5.4.2 Recommendations for nursing education

- Quarterly fall prevention training for all nurses who work in the dementia care centre should be implemented, for both permanent and temporary staff. They should all receive updated training about fall prevention of the psycho-geriatric residents and dementia as a condition to strengthen their knowledge and skills.

- Training should be tailored to meet the individual needs of the psycho-geriatric residents because of their different individualised risk factors to falls. Each fall risk factor requires a specific nursing care plan which the staff should be knowledgeable about it, to prevent falls.

- There should be development and implementation of a clear induction programme for new staff members for both permanent and relief staff on the policies, procedures and programmes for looking after the psycho-geriatric residents. This will assist the new employees to practice with confidence and prevent falls.

5.4.3 Recommendations for future research

- More studies with bigger sample sizes need to be done in the prevention of falls in the psycho-geriatric population in South Africa.

- Intervention research to create specific fall prevention programmes for dementia care centres is necessary in the prevention of falls in the psycho-geriatric population.

5.5 Conclusion

The purpose of the study was to explore and describe any possible relationship between the fall risk of the psycho-geriatric residents of a Dementia care centre in Gauteng and the nature of the staffs' fall prevention practices and educational needs. There were four relationships discovered between psycho-geriatric residents fall risk and the nurses and care workers fall prevention practices and educational needs. This study has revealed important information about constraints, which affect the incidents of falls and the importance of assessing the fall risk among elderly psycho-geriatric residents.

Fall prevention in the psycho-geriatric population remains an important issue that needs to be addressed by all health workers, and specifically those in chronic elderly care. The private health facilities needs to invest more in future research of fall prevention in the psycho-geriatric population to reduce costs of fall related injuries and the negative consequences of falling for vulnerable elderly people.

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APPENDICES

Appendix A. **Morse Fall Scale**

Resident Code: _____ Age _____ Gender _____ Diagnosis_____

Morse Fall Scale		**Patient Score**
1. History of falling; immediate or within 3 months	No = 0 Yes = 25	
2. Secondary diagnosis	No = 0 Yes = 15	
3. Ambulatory aid	None, bed rest, wheel chair, nurse = 0 Crutches, cane, walker = 15 Furniture = 30	
4. IV/heparin lock	No = 0 Yes = 20	
5. Gait/transferring	Normal, bed rest, immobile = 0 Weak = 10 Impaired = 20	
6. Mental status	Oriented to own ability = 0 Forgets limitations = 15 Total Score:	

0 – No Risk for falls, Less than 25 – Low Risk for Falls, 25 – 45 Moderate Risk for Falls, Above 45 – High Risk for Falls

Appendix B. **Information Document for Family Members**

FALL PREVENTION IN A DEMENTIA CARE CENTRE IN GAUTENG

Hello, my name is Sonto Mabula, an MSc student at Wits University.

I am conducting a research on mentally ill older adults residing in the dementia care centre. Research is just the process to find an answer to a question. It is not part of a routine care. I am inviting your family member to be part of the study. I am asking for your permission to include your family member in the research study. The study involves a structured observation of the fall risk of the psycho-geriatric residents' by me using a form called the Morse Fall Scale. His/her participation would require him or her to be observed by me while in the dementia care centre for the fall risk which will take five minutes. The participant will not be harmed during this observation. Although there may be no direct benefit to the resident, the possible benefit for the residents' will be future prevention of falls.

Participation is on a voluntary basis, and refusal to participate will involve no penalty or loss of benefits to which the participant is otherwise entitled, and he/she may discontinue participation at any time without any penalty or loss of benefits to which the participant is otherwise entitled.

Personal information will be kept confidential. I will not record his/her name anywhere. I would, therefore, like to request your consent on behalf of your family member to participate in the study. If you have any questions or you need clarification you can contact me on 0728998721 or email me at sontomabula@hotmail.co.uk or my supervisor, Mrs Maboko on (011)717-4217, or email at Disebo.Maboko@wits.ac.za. Should you have any concerns about any aspect of this study or want to report any problem about this study, you can contact the Human Research Ethics Committee (Medical) Chairperson of the University of the Witwatersrand using the following details: Prof. CB Penny, HREC Chairperson, Tel (011) 717-2301, Clement.Penny@wits.ac.za. Committee Secretariat: Ms. Zanele Ndlovu or Mr Rhulani Mkansi Tel (011) 717-2700/1252/1234/2656, Zanele.Ndlovu@wits.ac.za or Rhulani.Mkansi@wits.ac.za.

Thank you for your consideration.

Sonto Mabula. Tel - 0728998721, sontomabula@hotmail.co.uk

Appendix C. Information Document for Psycho-Geriatric Residents

FALL PREVENTION IN A DEMENTIA CARE CENTRE IN GAUTENG

Hello, my name is Sonto Mabula, an MSc student at Wits University.

I am conducting a research on mentally ill older adults residing in the dementia care centre. Research is just the process to find an answer to a question. It is not part of a routine care. I am inviting you to be part of the study. I am asking for your permission to include you in the research study. The study involves a structured observation of the fall risk of you by me using a form called the Morse Fall Scale. Your participation would require me observing you while in the dementia care centre for the fall risk which will take five minutes. You will not be harmed during this observation. Although there may be no direct benefit to you, the possible benefit for all the psycho-geriatric residents will be future prevention of falls.

Participation is on a voluntary basis, and refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled, and you may discontinue participation at any time without any penalty or loss of benefits to which you are otherwise entitled.

Personal information will be kept confidential. I will not record your name anywhere. I would, therefore, like to request your assent to participate in the study. If you have any questions or you need clarification you can contact me on 0728998721 or email me at sontomabula@hotmail.co.uk or my supervisor, Mrs Maboko on (011)717-4217, or email at Disebo.Maboko@wits.ac.za. Should you have any concerns about any aspect of this study or want to report any problem about this study, you can contact the Human Research Ethics Committee (Medical) Chairperson of the University of the Witwatersrand using the following details: Prof. CB Penny, HREC Chairperson, Tel (011) 717-2301, Clement.Penny@wits.ac.za. Committee Secretariat: Ms. Zanele Ndlovu or Mr Rhulani Mkansi Tel (011) 717-2700/1252 /1234/2656, Zanele.Ndlovu@wits.ac.za or Rhulani.Mkansi@wits.ac.za.

Thank you for your consideration.

Sonto Mabula. Tel - 0728998721, sontomabula@hotmail.co.uk

Appendix D. **Consent Form for the Family Members**

FALL PREVENTION IN A DEMENTIA CARE CENTRE IN GAUTENG

- I hereby agree on behalf of my family member to participate in the research on "**FALL PREVENTION IN A DEMENTIA CARE CENTRE IN GAUTENG"**
- I understand that he/she is participating freely and without being forced in any way to do so. I also understand that he/she can stop participating at any point should he/she not want to continue and that this decision will not in any way affect him/her negatively. I understand that this is a research project whose purpose is not necessarily to benefit him/her personally in the immediate or short term. I understand that his/her participation will remain confidential.

Signature on behalf of the participant _____

Name of the family member / Guardian _____

Relationship _____ Date_____

Appendix E. **Assent Form for Psycho-Geriatric Residents**

FALL PREVENTION IN A DEMENTIA CARE CENTRE IN GAUTENG

I hereby assent to participate in the research on **'FALL PREVENTION IN A DEMENTIA CARE CENTRE IN GAUTENG'**

I understand I am participating freely and without being forced in any way to do so. I also understand that I can stop participating at any point should I not want to continue and that this decision will not in any way affect me negatively. I understand that this is a research project whose purpose is not necessarily to benefit me personally in the immediate or short term. I understand that my participation will remain confidential. My name will not be written anywhere.

Date _____

Patient's signature / an 'X' for Yes _____

Patient's name_____

Appendix F. **Semi-structured Interview Guide**

AIM: CONDUCTING OF THE FOCUS GROUPS TO FIND OUT THE FALL PREVENTION PRACTICES THAT ARE USED BY THE NURSES' AND CARE WORKERS' TO PREVENT FALLS AMONG THE PSYCHO-GERIATRIC RESIDENTS OF A DEMENTIA CARE CENTRE IN GAUTENG AND THEIR EDUCATIONAL NEEDS.

Demographic data
Age:

Number of year working in the dementia care centre:

Highest qualifications:

Rank/ Position:

Question:

1. Please tell me, what are you currently doing to prevent falls amongst the psycho-geriatric residents residing in the dementia care centre?
    - Probes:
        - What is in place to reduce the prevalence of falls?
        - Are the current preventative measures in reducing falls effective?

2. Please tell me, what are your educational needs regarding fall prevention?
    - Probes:
        - Which areas need most improvement when it comes to fall prevention?
        - What are your daily challenges regarding the fall prevention and how do you deal with the challenges?
        - What type of the educational support do you think will be relevant in your situation?

Appendix G. Information Sheet for Group Interview Participants

FALL PREVENTION IN A DEMENTIA CARE CENTRE IN GAUTENG

Good day, my name is Sonto Mabula; I am an MSc Nursing student in the Department of Nursing Education. I am undertaking a research study entitled, **"FALL PREVENTION IN A DEMENTIA CARE CENTRE IN GAUTENG"**I would like to invite you to participate in the research study. Before agreeing to participate, it is important that you read and understand the following information about the purpose of the study, the study procedures and your right to withdraw from the study at any time. This information sheet is to help you decide if you would like to participate. You need to understand everything before you agree to take part in this study.

This study aims to describe the fall risk of the psycho-geriatric residents of a dementia care centre in Gauteng and explore nurses' and care workers' fall prevention practices and educational needs. This will be done in order to contribute to the prevention of falls in the dementia care centre.

You will be asked to volunteer the information about the actions the nurses and care workers take to prevent falls among the psycho-geriatric residents and to inform the researcher about your learning needs. Your participation will entail participating in a focus group discussion about the fall preventative measures and you're learning needs, aimed at making future recommendations. This will take approximately an hour.

There is no confidentiality in a focus group because there will be other people participating with you. You may withdraw your participation from the study at any time without any prejudice to yourself or negative consequences. There will be no remuneration for participating in this study.

If you have any questions or you need clarification you can contact me on 0728998721 or email me at sontomabula@hotmail.co.uk or my supervisor, Mrs Maboko on (011) 717 4217, or email at Disebo.Maboko@wits.ac.za

Should you have any concerns about any aspect of this study or want to report any problem about this study, you can contact the Human Research Ethics Committee (Medical) Chairperson of the University of the Witwatersrand using the following details: Prof. CB

Penny, HREC Chairperson, Tel (011) 717-2301, Clement.Penny@wits.ac.za. Committee Secretariat: Ms. Zanele Ndlovu or Mr Rhulani Mkansi Tel (011) 717-2700/1252 /1234/2656, Zanele.Ndlovu@wits.ac.za or Rhulani.Mkansi@wits.ac.za.

Thank you for your consideration

Sonto Mabula

Participant Signature _____

Appendix H. **Consent Form for Group Interview Participations**

FALL PREVENTION IN A DEMENTIA CARE CENTRE IN GAUTENG

I hereby confirm that I have been informed by the researcher, Sonto Mabula about the nature of the focus groups entitled "**FALL PREVENTION IN A DEMENTIA CARE CENTRE IN GAUTENG"** I have received, read and understood the written information sheet regarding the focus group. I am aware that the results of the focus group will be anonymously processed into a study report and the researcher will keep all information given to her confidential.

I may, at any stage, without prejudice, withdraw consent and participation in the workshop.

I have had sufficient opportunity to ask questions and of my free will, declare myself prepared to participate in the focus group.

Signature _____ Date _____

Appendix I. **Permission to Tape/Digitally Recording Semi-Structured Focus Group Interviews**

Good Morning

I would like to request your permission to tape/digitally-record the semi-structured focus group interview that will be conducted with you. The reason for the recording is to ensure accuracy and reliability during the analysis of the research results. Your real name will not be used during the interview and these records will not be given to anyone other than those involved in the study. I will destroy these records once they are no longer required to be used in this study.

Thank you

.....

Sonto Mabula

MSc Student

Appendix J. **Request Letter for Permission to Conduct the Study**

50 Gordon Grey Street
DanPienaarville
1739
14 Feb 2018

Nursing Service Manager
Gauteng Province

Dear Cheryl

Request Permission to Conduct the Research Study

My name is Sonto Mabula, a Master of Science nursing student at Wits University. My supervisor is Mrs Rita Maboko. I request to conduct a study at the dementia care centre, which will include observing the psycho-geriatric residents by completing the Morse Fall Scale and scoring them. Each score indicates the level for fall risk of each psycho-geriatric resident, the causes and the predisposing factors. The study will provide information about the fall prevention practices that are used by the nurses and care workers in the dementia care centre and to know their educational needs. The focus groups will be conducted at your preferred suitable venue and time to minimize disruption of the daily routine.
The proposed topic of my research is '**FALL PREVENTION IN A DEMENTIA CARE CENTRE IN GAUTENG'**

Study Objectives are:

- To describe the fall risk of the psycho-geriatric residents of a dementia care centre in Gauteng
- To explore nurses' and care workers' fall prevention practices and educational needs. This will be done in order to contribute to the prevention of falls in the dementia care centre.
- I have attached to this letter:

a) A copy of the research tool which I intend using in my research.

Our contact details are: Sonto 0728998721, Email: sontomabula@hotmail.co.uk

Mrs Maboko (011) 717 – 4217, Email: Disebo.maboko@wits.ac.za

Upon completion of the study, I undertake to provide you with a bound copy of the report.

Your permission to conduct this study will be greatly appreciated

Yours sincerely

Sonto Mabula

Appendix K. **Permission Letter**

FLOWER FOUNDATION
Retirement Homes
Est 1963
NPO 000-836

Unit 4, Surrey Square Office Park
330 Surrey Avenue
Ferndale, 2194
P O Box 3442, Randburg, 2125
Tel: +27(0)11 781 4920
Fax: +27(0)11 781 4931
info@flower.org.za
www.flower.org.za

7 June 2018

To: Lizzie Nomasonto Mabula

The purpose of this letter is to grant Lizzie Nomasonto Mabula, at the University of Witwatersrand permission to conduct research at Cosmos Care – a specialised Dementia care centre.

The study entitled "Fall prevention in a Dementia care centre in Gauteng" entails the following:

1. The description of the fall risk of the psycho-geriatric resident using the Morse Fall Scale to examine the residents and their records.
2. The exploration of the nurses' and care workers' fall prevention practices and educational needs through focus groups.

This will benefit Cosmos care centre because it is done in order to contribute to the prevention of falls in the care centre.

After review of the study protocol, I, Cheryl Dudgeon, Nursing Services Manager do hereby grant permission for Lizzie Nomasonto Mabula to conduct the research and access residents records.

Sincerely

CHERYL DUDGEON
NURSING SERVICES MANAGER

Chairman: IDJ Van de Merwe, **Deputy Chairman:** PR Cooke, **Board Members:** K Boulle, DR Griffiths, W Long, CW Luüs, PJG Mason, NP Ramokgopa, JN Raubenheimer, NR van der Merwe,

Independent Living: Elm Park Village, Northcliff; Kensington Gardens, Kensington; Maxhaven Village, Cresta; Orchid Place, Houghton; Silver Stream Village, Malanshof; Willowbrook, Sandton; Witpoortjie Village, Witpoortjie; Zonneveld Estate, Witpoortjie
Mid Care: Clivia Care Centre, Witpoortjie; Pioneer House, Oaklands; Rose Lodge, Northcliff; Willowbrook, Sandton; Willow Lodge, Malanshof
Full Care: Clivia Care Centre, Witpoortjie; Patricia King Wing, Oaklands; Primrose Place, Northcliff; Willowbrook, Sandton; Willow Lodge, Malanshof
Dementia Care: Cosmos Care

Appendix L. **Permission to Utilise the Morse Fall Scale**

Janice Morse (janice.morse@nurs.utah.edu)

2015/09/02

To: Sonto Mabula

From: **Janice Morse** (janice.morse@nurs.utah.edu)

Sent: 02 September 2015 05:57:27 PM

To: Sonto Mabula (sontomabula@hotmail.co.uk)

Dear Sonto:

You have my permission to use the Morse Fall Scale.

Do not alter the scale in any way: Do not add or delete items, or change the value of each item, or change the format of the scale.

All of the information you will need to use the scale is described in the book. "Preventing Patient Falls" 2nded (Springer Pub, fall 2008), as well as instructions on how to calibrate the scale. You should have a copy of this book on each unit, so that nurses can refer to fall preventions strategies, and understand how the program works. If you are using the firsted (Sage Pub) there is an error in the book on page 41, Table 4.1. The Values for Gait (Item #5) are:

Normal etc. 0

Weak 10

Impaired 20.

Staff training for using the MFS is available online from Hill Rom: http://www.hill-rom.ca/ca/PatientFallsRisk/03.htm

Pocket cards of the scale for staff reference are available from Hill-Rom, order number CTG581

Using the MFS: I strongly recommend that you record all of the item scores, as well as the total score on the chart, so that as patients' scores increase or decrease, these scores can be used to monitor improvements or decline in the patients fall risk.

I recommend that you use 45 as the high risk cut-off score.

In order to use the MFS, you must examine the patient. Scores cannot be obtained by using chart information.

I have received a lot of questions about medications recently. Medication is a part of the scale in the secondary diagnosis score. In developing the indices (items) we first included meds that were thought to contribute to falls, then numbers of meds, then combined this item with co-morbidity (Secondary Dx). Of course meds contribute to falls as they relate to the other variables (mainly gait and mental status). I recommend that if a patient scores as high risk for falling, then a patient assessment is conducted, and this includes a review of meds, with the goal of reducing the medications or side effects, to reducing the pts fall score. (See Morse, Preventing patient falls, Sage publications)

Re Paediatric falls: I do not recommend the use of the MFS for children—it was not developed with kids, so I was surprized that it has even used with kids. Develop a category called "developmental falls" (toddlers, and climbers) and tag them in your data past and analyse them separately.

The MFS was developed on adults (over 18) but with kids you should be concerned about INJURY from a standing fall. Look back in your records and see how old the first kid was who was injured from an anticipated physiological fall (it has something to do with impact--adequate height and weight to cause injury—my guess is 12 years for a big kid) and score from that age up.

Do not be fooled into looking at unanticipated physiological falls (seizures etc. or true accidents or developmental falls (in little kids)--the scale does not predict those.

There are 4a scales that have been developed for paediatrics:

1. Falls Assessment Form—Children's Hospital Central California (Cooper & Nolt, 2007)

2. Graf, E. (2004). General risk assessment for paediatric in-patient falls scale (GRAF_PIF). Fall risk assessment tool, Children's Memorial Medical Centre. Federal Copyright received 2005.

3. Humpty Dumpty Scale. Miami Children's Hospital.

Hill-Rodriguez, D., Messmer, P., Williams, P., Zeller, R., Williams, A., Wood, M., et al.'s. (2009). The Humpty Dumpty Falls Scale: A Case-Control Study. *Journal for Specialists in Paediatric Nursing, 14*(1), 22-32.

From: Sonto Mabula <sontomabula@hotmail.co.uk>
Date: Tuesday, September 1, 2015 at 1:16 PM
To: Janice <janice.morse@nurs.utah.edu>
Subject: Morse Fall Scale

Dear Dr J Morse

Request to use Morse Fall Scale
I kindly request a permission to use the Morse Fall Scale tool in my research.
I am a master's student at Witwatersrand University in Johannesburg, South Africa. I am currently making a research proposal on "falls analysis of elderly dementia mental health care users in a psychiatric unit".
Your permission will be highly appreciated
Kindest Regards
Sonto

Appendix M. **Clearance Certificate for Fall Prevention in a Dementia Care Centre**

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

R14/49 Ms LN Mabula

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)
CLEARANCE CERTIFICATE NO. M160541

NAME: (Principal Investigator)	Ms LN Mabula
DEPARTMENT:	School of Therapeutic Sciences Department of Nursing Education Medical School University
PROJECT TITLE:	Fall prevention in a dementia care centre
DATE CONSIDERED:	27/05/2016
DECISION:	Approved unconditionally
CONDITIONS:	Study title change noted 19/10/2018
SUPERVISOR:	Ms DR Maboko
APPROVED BY:	Dr CB Penny, Chairperson, HREC (Medical)
DATE OF APPROVAL:	11/07/2018

This clearance certificate is valid for 5 years from date of approval. Extension may be applied for.

DECLARATION OF INVESTIGATORS

To be completed in duplicate and **ONE COPY** returned to the Research Office Secretary on 3rd floor, Phillip V Tobias Building, Parktown, University of the Witwatersrand, Johannesburg.
I/We fully understand the conditions under which I am/we are authorised to carry out the above-mentioned research and I/we undertake to ensure compliance with these conditions. Should any departure be contemplated from the research protocol as approved, I/we undertake to resubmit to the Committee. **I agree to submit a yearly progress report**. When a funder requires annual re-certification, the application date will be one year after the date of the meeting when the study was initially reviewed. In this case, the study was initially reviewed in **May** and will therefore reports and re-certification will be due early in the month of **May** each year. Unreported changes to the application may invalidate the clearance given by the HREC (Medical).

Principal Investigator Signature

Date 20/10/2018

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES

Appendix N. **Transcript for one of the group interviews**

Date: 4 January 2019

Time: 13h30 – 14h15

Venue: Community hall in dementia care centre

Number of participants: 05 for this group interview

Researcher:

Please tell me, what are you currently doing to prevent falls amongst the psycho-geriatric residents residing in the dementia care centre? Is there anyone who would like to share with us? Yes CW1.

CW 1: "Pull up the cot sides if the patient is restless"

Researcher: >>> Trying to find some clarity >>>Do you mean during sleep time CW1?

CW 1: "Yes, when it's sleeping time and the psycho-geriatric resident is restless while still in bed, I will then pull the cot sides so that he or she does not fall off the bed.

Researcher: Ok, so what about during the day?

CW1: During the day as we put the resident on the wheel chair we help each other so that the resident does not slip (fall)".

Researcher: Is there anyone else who would like to share with the group? "Yes, CW2".

CW 2: "We make sure there are no open electric wires on the floor".

Researcher: Yes, but why? >>probing>>

CW 2: Open electric wires will make the psycho-geriatric residents to trip and fall when they are walking around the area. Researcher: "Yes" <<< prompting her to continue >>> CW2: They are unable to see danger. Researcher: Yes <<<prompting >>> CW2: So this place must be clear of anything that is loose and crossing like electric extensions.

Researcher: Are the current preventative measures in reducing falls effectively? Is there anyone who would like to share with us? Yes CW3.

CW3: “Yes, because the residents do not fall every day”. Researcher: Ok >> what does that mean when you say psycho-geriatric residents do not fall every day? <<prompting.

CW3: I mean we rarely have incidents of falls that cause serious injuries where the resident is admitted in the hospital for a broken bone. Researcher: Ok, which fall incidents do you have? And what do you do when they happen? >>> prompting her to continue.

CW3: We have minor falls where the psycho-geriatric resident fall and sustain a minor scratch. Researcher: Ok >> CW8 has raised her hand; would you like to add from what CW3 has said?

CW8: Yes. We have psycho-geriatric residents that fall every time but do not get injured. Mr X falls every time because he does not want to sit down.

Researcher: Ok, CW3 and CW8 what do you do when the psycho-geriatric resident fall? >> CW3: we report them to the sisters (professional nurses). CW8: The psycho-geriatric residents that fall every time we don’t report them because they do not get injured.

Researcher: Ok, >> probing >> what happened after that? CW3: the sister will come to check the psycho-geriatric residents for injuries and clean him/her.

Researcher: Ok. What is in place to reduce the prevalence of falls? CW2 was raising her hand >> let’s hear CW2.

CW 2: “Honestly speaking, we always escort them.

Researcher: So if I get you correctly, escorting of psycho-geriatric residentss where ever they go reduces falls?

CW 2: Yes, because we are always around and help them if we see that they are now walking on the dangerous ground. Researcher: CW1 would you like to add?

CW1: Yes, in the morning during bathing time, it is not possible to escort psycho-geriatric residents where ever they go. After bathing a resident, we attend to the other one, so the bathed resident remains unsupervised and they go outside alone.

Researcher: Do they fall or sustain injuries when left unsupervised? >> probing >>

CW1: Yes they do fall, Mr M can try to enter where it is not possible to enter, and so he does fall and hurt himself.

Researcher: Clarifying >> CW2 what would you say about what CW1 has just said regarding the difficulties that they are faced with in the morning which makes it impossible to escort and supervise the psych-geriatric residents.

CW2: Yes in the morning it is always hard to escort and supervise them especially the psycho-geriatric residents that can walk by themselves.

Researcher: Ok, which areas need most improvement when it comes to fall prevention? CW8 was raising her hand. Let's hear you.

CW8: Improvement of more care workers. Researcher: >> probing>> Why? For now we are two but when my colleague comes back from lunch she is going to be alone. She can't keep an eye on Mrs B, Mrs C, and Mrs E and look for Mrs D who is getting up as I speak; it is not easy when you are left alone. Researcher: >>supporting her>> I'm sorry to hear that.

Researcher: What are your daily challenges regarding prevention of falls? Nurse1 let's hear.

Nurse 1: Shortage of staff. Researcher: Ok, could you explain that to me >> prompting<< Nurse 1: when the resident want to go outside, it becomes a problem because I must follow her, and if I'm alone I must leave other residents unsupervised. Like the one who is moaning that side, she want to go up and down, up and down and we are taught not to restrict them, but they fall when left alone outside and we are expected to account.

Researcher: Ok, I see. Please tell me, what are your educational needs regarding fall prevention? And what type of educational support do you need? CW2 let's hear.

CW2: Everything about dementia and fall prevention.

Researcher: If I hear you correctly, you would like to know everything about dementia and fall prevention?

CW2: Yes.

Appendix O. **Field notes**

Field notes of a 2nd group interview

Date: 27 December 2018

Venue: House lounge

Time: 11h00 – 12h15

No. of participants: 3

Rank: Two care workers and one enrolled nursing assistant

The group interview was conducted in one of the houses at the residents lounge where psycho-geriatric residents seat after the morning routine with the care workers. The environment was the normal daily setting; participants were seated in a circle next to the psycho-geriatric residents. The researcher encouraged the participants to be relaxed and offered them some sweeties. The researcher also re-assured them that a group interview is not going to be a formal discussion. The researcher gave all the participants the information letter and read it to them as well; she gave them time to ask questions before commencing with the questions. All consent forms were signed by all the participants. The participants were familiar with the researcher because some of them assisted the researcher to collect data during phase one of the study data collection.

The participants wanted to know if anything they are going to say will not put them in trouble with their employer. The researcher reassured them by reminding them that none of the documents will have their names and this research study will not be used to put any of them in trouble with their employer. Participation from this group was very slow and participants had to be probed more often due to silence after a question. The researcher repeated questions to make the participants understand and encouraged them to respond. In cases where there was a lack of understanding, the questions were explained. The participants were encouraged throughout the group interview to support their statements with examples that prolonged the engagement between the researcher and the participants. Follow–up questions were asked by the researcher to test for misinformation and to get rich accurate data. The group interview was conducted in English and where a participant did not understand, it was interpreted in vernacular. The researcher prolonged interview by engaging with the participants. Data from this group was valuable information although limited to basic

information of fall prevention. There was some noise and a couple of disturbances from the psycho-geriatric residents however the group interview went well. The discussion lasted for forty five minutes.