The relationship between mental healthcare users' medication adherence and the nursing presence of registered nurses in primary healthcare

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Dissertation accepted in fulfilment of the requirements for the degree Master of Nursing in Psychiatric Community Nursing at the North-West University

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"BASETSANA ba ga ITUMELENG, tlhokang pelaelo ka ga THOTLOETSO le TSHIRELETSO tsa ga Ramasedi, ka e le sesupo sa gore ruri, Ena, OREOKAME ka malatsi otlhe".

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ABSTRACT

This study investigates the relationship between mental healthcare users' (MHCU) medication adherence and the nursing presence of registered nurses in primary healthcare. The overall aim of the study was to describe the medication adherence of MHCUs at primary healthcare clinics in an urban health district, to describe the nursing presence of registered nurses at primary healthcare clinics in an urban health district, and to determine if there is a relationship between MHCUs' medication adherence and the nursing presence of registered nurses at primary healthcare clinics in an urban health district.

This research study used a quantitative, non-experimental, descriptive correlational and cross-sectional design. The sample included MHCUs in an urban health district in the Gauteng province of South Africa, (n =180). Data were collected using the Medication Adherence Rating Scale (MARS) and the Presence of Nursing Scale (PONS) questionnaires.

The relationship between the study variables (nursing presence of registered nurses and self-reported medication adherence of MHCUs) was determined by calculating correlational coefficients (r), t-tests and analysis of variance (ANOVA) as statistical techniques.

The analysis of the responses showed that there was a strong positive correlation between PONS and MARS as shown by the positive value of the correlation coefficient of .685 with a corresponding sig-value of 0.000, which is less than the level of significance 0.01. Since the p-value (0.000) was less than 0.01, the influence was significant. This implies that MHCUs with positive perceptions on PONS were also likely to report higher levels of adherence to their medication.

Based on these results, the hypothesis that there is a relationship between MHCUs' medication adherence and the nursing presence of registered nurses working in primary healthcare clinics in an urban health district was supported. Recommendations for nursing practice, nursing education, nursing research and policy development were made.

Keywords: Nursing presence, registered nurses, primary healthcare clinics, mental healthcare users and medication adherence

Related concepts: Attentive care, healing presence, ministry of presence, caring presence, presence, therapeutic presence, the therapeutic use of self, wellbeing, presence approach and mindful practice, medication compliance

OPSOMMING

Hierdie studie ondersoek die verband tussen geestesgesondheidsgebruikers se medikasiegebruiknakoming en die verpleegteenwoordigheid van geregistreerde verpleegkundiges binne die primêre gesondheidsorgstelsel. Die oorkoepelende doelwit van die studie was om die medikasiegebruiknakoming van geestesgesondheidsgebruikers by primêre gesondheidsorgklinieke in 'n stedelike gesondheidsorgdistrik te beskryf en om te bepaal of daar 'n verband is tussen die verpleegteenwoordigheid van geregistreerde verpleegkundiges by primêre gesondheidsorgklinieke in 'n stedelike gesondheidsorgdistrik en die medikasiegebruiknakoming van geestesgesondheidsgebruikers van hierdie primêre gesondheidsorgklinieke.

Die studie het gebruik gemaak van 'n kwantitatiewe, nie-eksperimentele, beskrywend-korrelerende deursnit-ontwerp. Die steekproef het geestesgesondheidsorggebruikers in 'n stedelike gesondheidsorgdistrik in die Gautengprovinsie van Suid-Afrika (n =180) betrek. Data is versamel deur middel van die Medikasienakomingbeoordelingskaal (Medication Adherence Rating Scale – MARS) en die Skaal van die Teenwoordigheid van Verpleegkundiges (Presence of Nursing Scale – PONS) vraelyste.

Die verband tussen die studieveranderlikes (die verpleegteenwoordigheid van geregistreerde verpleegkundiges en selfgerapporteerde medikasiegebruiknakoming onder geestesgesondheidsorggebruikers) is bepaal deur die berekening van die korrelasiekoeffisiënte (r), t-toetse en 'n analise van variasie (ANOVA) as statistiese tegnieke.

Die ontleding van die terugvoer het 'n sterk positiewe korrelasie tussen die PONS en MARS getoon soos blyk uit die positiewe waarde van die korrelasiekoeffisiënt van .685 met 'n korresponderende sig-waarde van 0.000, wat minder is as die 0.01 vlak van beduidendheid. Aangesien die p-waarde (0.000) minder was as 0.01, was die invloed beduidend. Dit impliseer dat geestesgesondheidsorggebruikers met positiewe persepsies op die PONS meer waarskynlik was om hoër vlakke van medikasiegebruiknakoming te rapporteer.

Hierdie resultate ondersteun die hipotese dat daar 'n verband is tussen geestesgesondheidsorggebruikers se medikasiegebruiknakoming en die verpleegteenwoordigheid van geregistreerde verpleegkundiges in primêre gesondheidsorgklinieke in 'n stedelike gesondheidsorgdistrik. Die studie maak aanbevelings vir die praktyk, verpleegopleiding, verpleegnavorsing en beleidsvorming.

Sleutelwoorde: Verpleegteenwoordigheid, geregistreerde verpleegkundiges, primêre gesondheidsorgkliniek, geestesgesondheidsorg gebruikers, medikasiegebruiknakoming

Verwante konsepte: Aandagtige sorg, genesende teenwoordigheid, bediening van teenwoordigheid, sorgsame teenwoordigheid, teenwoordigheid, terapeutiese teenwoordigheid, die terapeutiese gebruik van self, welstand, teenwoordigheidsbenadering en bewuste praktyk (mindful practice), medikasienakoming

ABBREVIATIONS

α	Cronbach's alpha coefficient
ANOVA	Analysis of Variance
CFA	Confirmatory Factor Analysis
DoH	Department of Health
EFA	Exploratory Factor Analysis
HREC	Health Research Ethics Committee
MARS	Medication Adherence Rating Scale
MHCA	Mental Health Care Act
MHCU	Mental Health Care User
NWU	North-West University
PHC	Primary Healthcare
PONS	Presence of Nursing Scale
r	Correlation Coefficient
SA	South Africa
SPSS	Statistical Package for Social Sciences
WHO	World Health Organization
WBOT	Ward-based Outreach Team

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CHAPTER 1: OVERVIEW OF THE STUDY

1.1 Introduction

This chapter provides an overview of the study. The chapter commences with an introduction and background to provide context. This is followed by the problem statement that inspired this study to determine the relationship between mental healthcare users' (MHCUs) self-reported medication adherence and the nursing presence of registered nurses at primary healthcare (PHC) level in an urban district in Gauteng. The chapter outlines the aim and objectives of the study, followed by a brief discussion of the theoretical framework and conceptual definitions. The research design and research method are summarized and the dissertation outline is provided in conclusion.

1.2 Background to the study

The issue of medication adherence by MHCUs at PHC level has been an ongoing challenge (WHO, 2008:35). Numerous strategies have been implemented to promote medication adherence among MHCUs, and these strategies have been categorised according to the factors associated with adherence, namely strategies related to the patient, the disorder and the treatment (Leclerc *et al*., 2013:251). To establish the effectiveness or non-effectiveness of these strategies, the medication adherence of MHCUs will have to be measured according to Johnson *et al*. (2016:697). According to Costa *et al*. (2015:1303) there are various methods available, such as patient self-report questionnaires. However, research on the registered nurses' therapeutic use of self, in this case, nursing presence, and medication adherence is scarce To date, such research has shown that there might be a link between nursing presence and medication adherence (Yagasaki & Komatsu, 2017:515), and it seems worthwhile exploring this topic.

A background discussion on mental healthcare and the current PHC landscape, particularly with regard to the mental healthcare provided to the MHCUs, follows.

The World Health Organization (WHO) defines mental health as a state of wellbeing in which the individual realizes his or her own abilities, can cope with the normal stressors of life, can work productively and fruitfully, and is able to make a contribution to his/her community (WHO, 2001d:1). Unfortunately, according to the South African Department of Health (DoH) there is an increase in the prevalence of mental disorders (DoH, 2010:11-12) and insufficient human resources to provide mental healthcare. This leads to a substantial gap between demand and supply of mental health services as evidenced by the Mental Health Human Resource statistics in South Africa

(DoH, 2010). According to the Mental Health Human Resource statistics in South Africa, there are 0.3 psychiatrists, 0.5 other medical doctors, 7.5 nurses, 0.3 psychologists, 0.4 social workers, 0.1 occupational therapists and 0.3 other health workers who provide mental healthcare per 100 000 members of the population (WHO, 2007:17). This was confirmed by a breakdown of the mental health workforce done in 2014 that reported an average of 0.1 psychiatrists and 0.6 nurses per 100 000 members of the population in South Africa as one of the member states forming Africa (one of the WHO regions) (WHO, 2014:37).

Looking at the above statistics, it is evident that the available mental health human resources will not in any manner be able to meet the increasing demand of mental health problems in communities (Al-Khathami *et al*., 2013:203). It is therefore emphasized that accessibility is one of the core elements in ensuring effective mental healthcare services for all (WHO, 2001b:88). The above statement is clearly supported by an international study that states that patients reporting poor access to mental healthcare services had much lower adherence to treatment than those not perceiving access as difficult (McDonald *et al*., 2016:214). In order to deal with the identified problem, the WHO made recommendations, one being that mental health services be integrated into the PHC system (WHO, 2001a:59).

The DoH followed this recommendation and formulated and endorsed a National Mental Health Policy Framework and Strategic Plan, which introduced a new mental health system, thus addressing the integration of mental health services in the PHC system (DoH, 2010:9). The National Mental Health Policy Framework and Strategic Plan states that there should be medication monitoring and psychosocial rehabilitation as part of the recovery framework for severe mental illness, as well as detection and management of common mental illnesses at the PHC level of the health system (DoH, 2010:23). This policy has set out provisions of a new mental health system and the Mental Health Care Act (MHCA) (17 of 2002) as amended by Mental Health Care Amendment Act 12 of 2014 also guides and supports the implementation of this policy (DoH, 2016).

Mental health services have been integrated into PHC for more than a decade (Ssebunnya *et al*., 2010:128) and many challenges undoubtedly remain (Stein, 2014:115). Registered nurses experience challenges with this integration (Ssebunnya *et al*., 2010:128), and such challenges are linked to mental health staffing and training and management of patients (Abera *et al*., 2014:119). From research, it seems that PHC nurses lack clarity concerning their role in the integration of mental health services into PHC (Dube & Uys, 2016:124) and they were also found to be uncomfortable dealing with patients with mental disorders (Mesidor *et al*., 2011:289). PHC nurses have to be equipped with skills and training to change their overall attitude. Internationally, McKinky and Davison (2011:18) also found that nurses were hesitant to become involved in the

work of the primary mental health initiatives, often because they were unsure of their skills in this area. Hardy and Kingsnorth (2015:270) found that most healthcare workers in primary care have little knowledge of mental health, so they are unsure of their role in the management of patients with mental health problems.

The challenges with the integration of mental health services into PHC is even more prevalent in urban healthcare districts, where PHC is characterized by overburdened PHC workers (Lavhelani *et al*., 2015:437) or over-stretched PHC services, as Abera *et al*. (2014:114) refer to it. This leads to inadequate time to evaluate and treat patients with mental disorders, a reluctance to integrate mental healthcare into PHC services as evidenced by the lack of interest, and burnout among PHC workers due to inadequate training and support (Abera *et al.,* 2014:114). Poor MHCUs' adherence to medication at PHC level (WHO, 2008:35) and the lack of valid treatment protocols/standing orders for psychotropic drugs (Lavhelani *et al*., 2015:437) contribute to these challenges. From the researcher's experience of working in an urban health district within the Gauteng province, the above-mentioned challenges seem to be a true reflection of the situation regarding the provision of mental health services in an urban PHC setting.

At the same time, it is vital for PHC nurses, also in urban areas, to be able to effectively manage mental healthcare to MHCUs and assess their mental state, medication effects and lifestyle (Dube & Uys, 2016:3), not forgetting medication adherence highlighted as a significant aspect of such mental healthcare (Serobatse *et al*., 2014:799). Medication adherence can be enhanced by approaches such as providing information and reminders; simplifying the behaviour required; practicing ongoing assessment, counselling and self-monitoring; and providing reinforcements (DiMatteo *et al*., 2012:77). A study by Crowe *et al*. (2011:901) labelled such interventions as being complex and not always successful, especially with psychiatric medication. However, it is evident from other research that one approach, namely the quality of the therapeutic relationship and nurse-patient communication, can play a key role in medication adherence (Haddad *et al*., 2014:50). Misdrahi *et al*. (2012:49) further emphasize the above by stating that maintaining a beneficial therapeutic alliance between patients and nurses is one effective strategy for improving medication adherence, especially in patients with mental disorders (Fadare *et al*., 2014:1).

One way to facilitate a therapeutic alliance is nursing presence. Nursing presence is an essential component of the nurse-patient relationship (Turpin, 2014:14), and is evident when the registered nurse interacts in an intentional and present manner with the MHCU (Gelogahi *et al*., 2018:296), also in PHC. Engqvist *et al*. (2010:313) conducted a study on nursing presence and a specific group of participants with a psychiatric condition. They concluded that it was imperative to recognize nursing presence as an important strategy to improve the art of psychiatric nursing, especially when the aim is to provide compassionate and effective nursing care to this vulnerable

population. Söderlund *et al*., (2013:271) provide guidelines to nurses who would like to improve their nursing presence. She defines nursing communication as closely related to caring. Nurses have to apply it daily in their work environments, but her emphasis was on nurses having to master the skill of being present during their nursing communication with patients Söderlund *et al*., (2013:265). In their support of nursing presence, they go on to list ways in which nurses can practice being present, for example smiling and making eye contact when attending to a patient (Söderlund *et al*. 2013:272).

Similarly, Robertson and Szabo (2017:a1055) specifically write about care in relation to chronically mentally ill persons living in the community. He highlights the significant role of PHC nurses in ensuring the wellbeing of mentally ill persons in the community and also states how the care is encompassed within the caring nature of nurses. This caring nature might even be part of the spiritual dimension of both the nurse and the patient that can be expressed as a healing presence, therapeutic use of self, intuitive sensing, exploration of the spiritual perspective, patient-centeredness, meaning-centred therapeutic intervention and care that integrates holistic human aspects (Ramezani *et al*., 2014:213-214). Nursing presence may be of particular value to individuals with chronic illnesses, such as a mental illness, who may not only present themselves regularly to the registered nurse for high-quality healthcare, but also because a therapeutic, trusting relationship has developed over time (Robinson, 2014:44). However, a study by Yagasaki and Komatsu (2013:515) highlight a disturbing observation that nursing presence has become invisible in the current health systems. Nursing presence involves devotion to a patient's wellbeing while bringing scientific knowledge and expertise to the relationship resulting from a value system of holistic beneficence and patient empowerment (Bunkers, 2012:13).

It is believed that each registered nurse has his or her own strengths, passions and attributes that make them unique in their practice (Lieberman, 2013:24). When registered nurses practice nursing presence according to their unique strengths, the relational engagement between themselves and patients may improve (McMahon & Christopher, 2011:72). Nursing presence is often used in conjunction with other nursing interventions (Zyblock, 2010:123) with the main aim to cultivate caring relationships (Mohammadipour *et al*., 2017:19). Kontos *et al*. (2017:44) concurs with this statement when she states that a meeting between a nurse and another in a presence that is more than just task-focused provides an avenue through which connectedness in a nurse-patient relationship may occur.

In a study by Kornhaber *et al*. (2016:537), findings indicated that the nurse-client relationship remains foundational to nursing practice, with the importance of rapport and trust resonating throughout the findings. In the study the nurses emphasized the following activities as crucial to the development of trust and rapport in their relationships with patients: conveying an empathic

and non-judgemental nursing attitude, providing an individualized, flexible approach to nursing care, assisting with practical and basic needs on a daily basis, promoting respect, dignity and privacy, ensuring nurse availability, matching nursing interventions to the clients' needs, offering information and education, and maintaining the least restrictive approach to treatment (Pazargadi *et al*., 2015:555).

The establishment of a good therapeutic relationship seems to be a crucial component of several psychosocial interventions (Leclerc *et al*., 2013:250), including the promotion of medication adherence. Berben *et al*. (2011:15) define medical adherence as the extent to which a patient acts in accordance with the prescribed interval and dose of medication. It includes the concept of patient choice, where both the registered nurse and patients share the responsibility for medication adherence (Verloo *et al.*, 2017:747). A poor nurse-patient relationship may adversely affect medication adherence (McCabe *et al*., 2012:e36080). This is also highlighted in a study by Novick *et al*. (2015:5), where a weak patient-nurse therapeutic alliance was associated with poor medication adherence. Likewise, in a study by Verloo *et al*. (2017:749), nurse accessibility was mentioned as one of the interventions where nurses themselves emphasized the importance of taking time to see the patients. The study also revealed that continuity in the patient-nurse relationship is of crucial importance. In a study by Cruz *et al*. (2016:5), psychiatric patients raised one of the factors relating to their poor medication adherence as healthcare practitioners being too disconnected and restricted in their attention to medication prescription, without truly comprehending and attending to patients' individual needs. De las Cuevas *et al*. (2017:688) also concluded that better clinical relationships were linked with improved medication adherence.

Medication adherence has been identified as one of the factors that influences the development of mental healthcare (Li & Tsai, 2017:11). It is very important in psychiatric nursing, as it is directly related to the prognosis of the patient (Nath, 2017:289). A study by Al-Batran (2015:28) has demonstrated medication adherence as having a positive effect on decreased relapses and rehospitalization; increase in quality of life, self-satisfaction, self-efficacy and self-esteem for MHCUs.

1.3 Problem statement

From the above discussions, it is evident that nursing presence may play a significant role in the adherence to medication of MHCUs at the PHC level, but it is currently not known what the relationship is between nursing presence and the medication adherence of MHCUs in PHCs in an urban district in Gauteng. Medication adherence has often been perceived as dependent on patients only, and not on healthcare providers, but there is evidence that factors in the healthcare system, including healthcare providers, have an important effect on adherence (Kardas *et al*.,

2013:7). It is therefore worthwhile to investigate whether nursing presence does have an influence on medication adherence.

In the researcher's experience as a mental healthcare practitioner providing mental health services to MHCUs at a secondary level at Primary Health Care clinics in an urban health district, there is a significant number of MHCUs who are non-adherent to their medication. Even MHCUs who had good medication adherence for a number of years at the secondary level clinics prior to being down-referred to PHC clinics, tend to stop attending the clinic for their treatment at some point. This research may provide insight into the relationship between self-reported medication adherence and the nursing presence of registered nurses in PHC.

1.4 Research questions

The following questions emerge from the background and problem statement:

- What is the self-reported medication adherence of MHCUs at PHC clinics within an urban health district in Gauteng Province, South Africa?
- To what extent does registered nurses have a nursing presence at PHC clinics within an urban health district in Gauteng Province, South Africa?
- What is the relationship between the self-reported medication adherence of MHCUs and the nursing presence of registered nurses at PHC clinics in an urban health district in Gauteng Province, South Africa?

1.5 Philosophical assumptions

According to Botma *et al*. (2010:39), it is imperative for researchers to know philosophies related to the scientific nature of seeking knowledge as this will have an effect on the researcher's choice of an approach to address the research problem. Terre Blanche *et al*. (2014:6) identified three paradigms that may guide the researcher to identify their philosophical stand, namely the positivist, interpretivist and realism philosophical assumptions. The researcher worked with a positivist approach as she believes that scientific methods can be used to study social phenomena and that universal laws exist to explain human behaviour in an objective way (Moule *et al*., 2017:154). This view is discussed in more detail in Chapter 3.

1.6 Theoretical assumptions

According to Botma *et al*. (2010:187), theoretical assumptions reflect the researcher's knowledge of existing theoretical or conceptual frameworks regarding the field of study. Theoretical assumptions can help the researcher to declare her standpoint regarding the research topic, and

thus to place herself within theoretical frameworks regarding the field of study. The theoretical framework for this study is discussed below, together with the conceptual definitions of keywords.

1.6.1 Theoretical framework

One of the theories that guided this research is the theory of Kostovich (2012:167-175), which describes nursing presence as a multidimensional unified whole, fluidly existing in the cognitive, affective, behavioural and spiritual experiential domains all at once. Nursing presence is revealed through direct and indirect physical availability, empathetic attention, and the provision of physical and emotional comfort, competent performance of nursing procedures, patient education, and coordination of care with other healthcare providers. It entails listening and taking subsequent knowledge-based action. Nursing presence creates a therapeutic healing experience, thereby enhancing the quality of life and engendering a psycho-spiritual peace. The antecedents of nursing presence are openness between nurse and patient, confidence in the nurse, and commitment from the nurse. The attributes of nursing presence are teaching, surveillance, concern, empathy, companionship, educated skilfulness, availability, responsive listening, and coordination of care, spiritual enhancement, reassurance and personalization of care. The patient consequences are emotional comfort, physical comfort, healing, safety, nurse-patient connection, enhanced quality of life, empowerment and peaceful reality (Kostovich, 2012:169).

This research also looked at medication adherence as described by Thompson *et al*. (2000:241-247) as the basis of understanding medication adherence within a specific group of people, namely MHCUs. There are three main methods of measuring adherence. These include patient and clinical self-report, pill counts, and biological measures (Thompson *et al*., 2000:241). In this case, self-report was used to determine medication adherence, as the researcher agrees with Thompson *et al*. (2000:241) that it is the most efficient and cost-effective method to measure compliance among MHCUs. Patients' medication adherence behaviour, patients' attitude to taking medication and the negative side effects and attitudes to psychotropic medication are factors that play a role in medication adherence (Thompson *et al*., 2000:244).

1.6.2 Conceptual definitions

The conceptual definitions serve as both theoretical and operational definitions:

- **Mental healthcare user**

The Mental Health Care Act (MHCA) (SA, 2002:10) describes a MHCU as a person receiving care, treatment and rehabilitation services or using a health service at a health establishment aimed at enhancing the mental health status of a user, who can also be a state patient or a

mentally ill prisoner. In this study, a MHCU refers to a person receiving treatment and care at an urban PHC clinic, post-discharge from a mental healthcare establishment, and in remission.

- **Primary healthcare (PHC)**

The WHO Alma-Ata Declaration of 1978 defines primary healthcare (PHC) as,

> *"Essential health care based on practical, scientifically sound and socially acceptable methods and technology made universally accessible to individuals and families in the community through their full participation and at a cost that the community and country can afford to maintain at every stage of their development in the spirit of self-reliance and self-determination. It forms an integral part both of the country's health system, of which it is the central function and main focus, and of the overall social and economic development of the community. It is the first level of contact of individuals, the family and community with the national health system bringing healthcare as close possible to where people live and work, and constitutes the first element of a continuing health care process".*

In this study, PHC refers to the care that MHCUs receive at PHC clinics. The care involves diagnosing and treating people with mental disorders; putting in place strategies to promote and prevent mental disorders; and ensuring that PHC workers are able to apply key psychosocial and behavioural scientific skills, such as interviewing, counselling and interpersonal skills, in their day-to-day work (Ssebunnya *et al*., 2010:129).

- **Nursing presence**

> *"Nursing presence is an intersubjective human connectedness shared between nurse and patient. It begins as both the nurse and the patient enter the relationship as vulnerable beings. Trust and confidence in the nurse evolve until both nurse and patient risk openness and enter into the relationship. The nurse responds as a compassionate and committed caregiver manifesting nursing presence" (Kostovich, 2012:169).*

In this research, nursing presence refers to the shared human connectedness between registered nurses at the PHC and the MHCUs within an urban health district as experienced by the MHCUs. This human connectedness takes place within a relationship that includes trust, commitment and compassion.

- **Medication adherence**

Thompson *et al*. (2000:242) define medication adherence as a rating of a patient or MHCU's medication-taking behaviour, thus grouping them as compliers or non-compliers. In this research medication adherence specifically refers to self-reported medication-taking behaviour of a MHCU at the PHC level within an urban health district.

- **Registered nurse**

According to the Nursing Act (33 of 2005), a registered nurse is a person who is registered and accredited, who is qualified and competent to independently practice comprehensive nursing in the manner and to the level prescribed and who is capable of assuming responsibility and accountability for such practice (SA, 2005). The registered nurse in this study is a person who meets the aforementioned criteria and is working in primary healthcare clinics, providing care and treatment to MHCUs. Such a registered nurse may or may not have a qualification in psychiatric nursing.

1.7 Research aim and objectives

The research aim and objectives are based on the problem statement and research questions. They are stated below.

1.7.1 Research aim

The aim of the research is to determine the relationship between MHCUs' self-reported medication adherence and the nursing presence of registered nurses at PHC clinics in an urban health district in Gauteng Province, South Africa.

1.7.2 Research objectives

The research objectives of this study were:

- To determine the self-reported medication adherence of MHCUs at PHC clinics in an urban health district in Gauteng Province, South Africa;

- To determine the nursing presence of registered nurses at PHC clinics in an urban health district in Gauteng Province of South Africa as perceived by MHCUs; and

- To determine the relationship between MHCUs' self-reported medication adherence and the nursing presence of registered nurses at PHC clinics in an urban health district in Gauteng Province, South Africa.

1.8 Hypothesis

This study tested the following hypothesis:

H1: There is a relationship between MHCUs' self-reported medication adherence and the nursing presence of registered nurses working in PHC clinics in an urban health district in Gauteng.

1.9 Research methodology

The discussion of the research methodology is based on the framework of Saunders *et al.* (2019:130), who uses the image of a research onion. The layers of the research onion include the research philosophy, approach to theory development, methodological choice, research strategies and study context, and data collection and analysis. The research philosophy along with the theoretical framework of this study are discussed above in Sections 1.5 and 1.6. In the following sections the remaining layers of the research onion are discussed, starting with the approach to theory development. All these aspects are discussed in more detail in Chapter 3.

1.9.1 Approach to theory development

The approach to theory development or research approach as commonly known can be defined as a process or plan comprised of various steps. These steps involve broad assumptions of data collection method, analysis of the collected data and its interpretation. The approach to theory development, therefore, is chosen on the basis of the research problem and research questions of a particular research project. There is a choice between two types of approaches to theory development for application in a particular research project, namely the deductive approach or the inductive approach (Moule *et al.*, 2017:155). The focus of the deductive research approach is to test an existing theory. In this type of research, an extensive study of the existing works is done and the implication for existing theories are then tested against the current data.

In this study, a literature study was done, followed by empirical research.

1.9.1.1 Literature study

The researcher performed a literature study while keeping in mind the aim of the study (to determine the relationship between MCHUs' self-reported medication adherence and the nursing presence of registered nurses at PHC clinics in an urban health district in Gauteng). The aim of the literature study was to help the researcher locate existing similar or related studies that could serve as a basis for the study; to help the researcher to develop a conceptual map; and gain an in-depth understanding of the relevant study methods and instruments or tools with which to measure the study variables (Brink *et al.*, 2012:52).

It was evident from the literature (see Chapter 2) that medication adherence is the most effective way to further improve healthcare outcomes, more so in mental health services as it contributes towards increasing the MHCU's quality of life. There are many factors that enhance medication adherence for MHCUs, of which the influence of practitioners or the healthcare team has been identified as one of the factors that has not been adequately researched. A study by Holtzman *et al.* (2015:817) further emphasize the above statement by recommending that research on interventions focusing on practitioners' characteristics may help to further improve medication adherence for patients. The nursing presence of registered nurses is one way in which practitioners can improve the medication adherence of MHCUs.

There is no evidence in the available literature with respect to the relationship between the nursing presence of registered nurses and MHCUs' medication adherence. In light of this shortcoming, the researcher saw this study as imperative to bridging the knowledge gap by determining MHCUs' medication adherence and the nursing presence of registered nurses and explaining the relationship between these two variables.

The literature review included searches of the databases in the North-West University's library to gather information regarding nursing presence, medication adherence and mental healthcare services at PHCs. The search engines and databases included the following: EBSCOHost, ScienceDirect and Google Scholar Search. Chapter 2 offers a detailed discussion of the literature.

1.9.1.2 Empirical research

According to Polit and Beck (2010:752), empirical research refers to the approach the researcher uses to conduct the research study in the real world. For this study the researcher considered methodological choice, including the setting, the population, the criteria used to choose the sample, instruments used for data collection, procedures followed for data collection, the data analysis method, the role of the researcher, the measures that the researcher took to ensure the rigour of the study and the ethical principles relevant to this study. The next section provides an overview, with a detailed discussion in Chapter 3.

1.9.2 Methodological choice

According to Moule *et al*. (2017:151), methodological choice or research design is a map for how the researcher will engage with the research participants to achieve the outcomes needed to address the research aims and objectives. This study used a quantitative, non-experimental, descriptive, correlational and cross-sectional design. According to Singh (2007:63), quantitative research is the best option the researcher can choose to determine the relationship between an independent variable and a dependent variable in a population. The purpose of descriptive

research in quantitative research is to describe the characteristics of phenomena and the relations between variables as accurately as possible (Du Plooy-Cilliers *et al*., 2014:75). Du Plooy-Cilliers *et al*. (2014:76) highlighted that correlational studies look at the relationship between certain variables or how one variable is affected by another variable. The researcher did this study by means of a cross-sectional design, which means data were collected from participants only once (Du Plooy-Cilliers *et al*., 2014:149). This design ensured that the overall picture of a phenomenon studied is at one point in time.

Looking at the above breakdown of the chosen research design, the chosen design is the most suited to the study as this design enabled the researcher to describe fully the two variables of the research study (self-reported medication adherence of MHCUs and nursing presence of registered nurses) and to establish whether there is a relationship between the studied variables.

1.10 Research strategies and study context

An overview of the research setting; the population; sample and sampling; data collection and data analysis follows below.

1.10.1 Research setting

The area of interest for the study was an urban health district in the Gauteng province, which is divided into four (4) sub-districts. Across the district, there are 47 primary healthcare clinics that are all expected to offer primary mental health services to communities. According to statistics the researcher received from the district, 15 of the 47 clinics offer the majority of the mental healthcare services at PHC in the urban healthcare district, because the 15 clinics also provide mental health services at a secondary level and the registered nurses at the secondary level are able to support and give guidance to PHC registered nurses in the management of mental healthcare users.

This setting was selected because it is an exemplary district in terms of integrating mental health services at PHC as one of the significant goals in the implementation of the National Mental Health Policy Framework and Strategic Plan 2013-2020 (DoH, 2010:23).

1.10.2 Population

Population refers to a group of people about whom or which the researcher is interested in collecting information or data (Moule *et al*., 2017:411). The study population for this research study was an estimated number of 500 MHCUs from 15 PHCs in the Gauteng province that offer most of the mental healthcare services in the urban healthcare district. The researcher ensured that only participants who are stable enough to give consent during data collection take part by

screening them for their capacity to consent to participation using the MacArthur Competence Assessment Tool for Clinical Research (MacCAT-CR) instrument (Appelbaum & Grisso, 2001:88) (see details in Chapter 3).

1.10.3 Sample and sampling

A sample is any subset of the population selected for the purpose of being studied; and the process by which elements are drawn from the population is known as sampling (Moule *et al*., 2017:413).

For this study, consecutive sampling (Polit & Beck, 2010: 311) was applied, resulting in an all-inclusive sample of MHCUs receiving mental healthcare services at the PHC clinics in the selected urban healthcare district in the Gauteng province. This ensured that participants who showed interest in the study had an equal opportunity to be selected. The sample size was determined by the number of MHCUs at the PHC clinics during the time of data collection. From the total estimated population of about 500 MHCUs, the statistician advised that a sample of 100 or more would be considered adequate. The number of MHCUs who voluntarily participated in the preliminary and main study were n=5 and n=180 respectively. Inclusion and exclusion criteria were used to guide the process of sampling for this study, as outlined in Chapter 3.

1.10.4 Data collection

According to Grove *et al.* (2013:45), data collection refers to a detailed, systematic gathering of facts relevant to the research purpose or the definite objectives, questions, or hypotheses of a study. This process in quantitative studies is usually numerical. For this study, data collection is discussed by providing an overview of the recruitment process and screening for capacity to consent, data collection tools, data collection procedure and the role of the researcher. The researcher used a visual representation as a guide to outline the data collection process used in this research study (see Figure 1.1). The figure below offers an overview of this process as discussed in the following sections, with a detailed discussion of this process in Chapter 3.

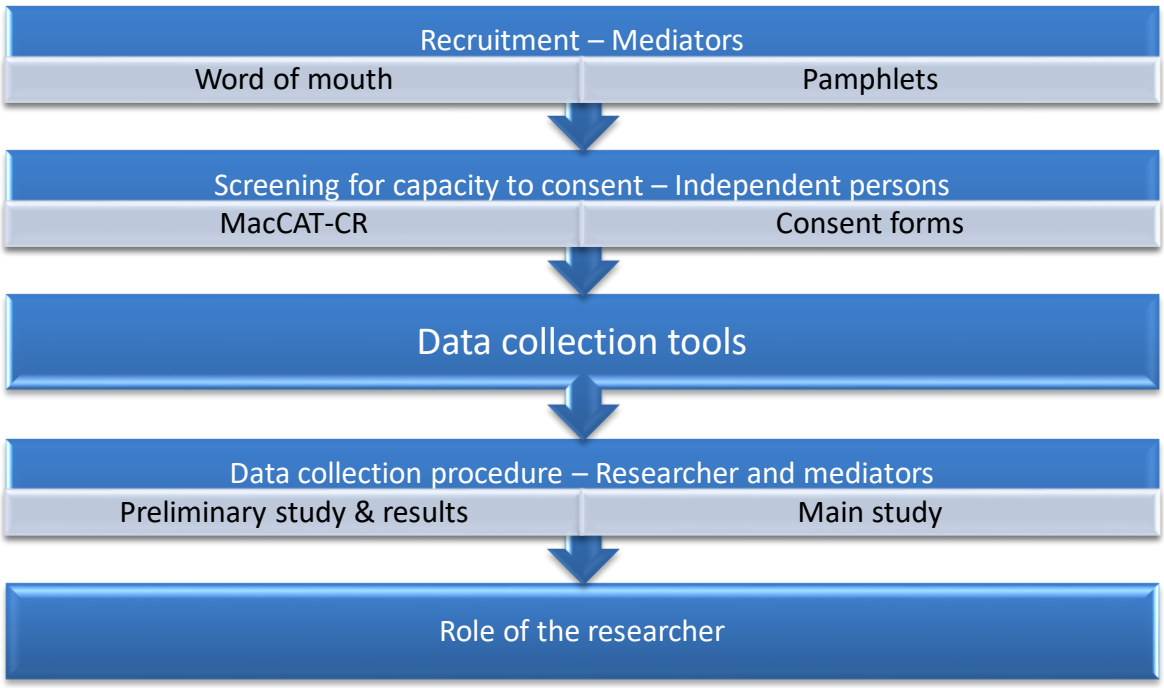

Figure 1-1: Visual representation of data collection process

1.10.4.1 Recruitment process and screening for capacity to consent

Recruitment refers to the process of locating participants for a study. This includes finding potential participants, approaching them to participate in the study, and getting their approval to participate (Grove *et al*., 2013:707). The recruitment process for this study also included screening potential participants for capacity to consent. The recruitment permission process was done by mediators identified by the researcher at PHC clinics by word of mouth and recruitment pamphlets (see Annexure B). Following the recruitment by mediators, potential participants were screened by independent persons for capacity to consent using the MacCAT-CR tool (see Annexure I). Furthermore, those participants deemed capable to consent were taken through the process of obtaining informed consent using detailed informed consent forms (see Annexure A) by independent persons to ensure that potential participants do not feel coerced to participate. Please see Section 1.12.1 for the relevant discussion on permission and informed consent.

1.10.4.2 Data collection tools

This research used two (2) standardized self-report questionnaires to determine the relationship between MHCUs' self-reported medication adherence and the nursing presence of registered nurses working at PHC clinics in the urban health district. To measure the MHCUs' self-reported medication adherence, the Medication Adherence Rating Scale (MARS) was used and the Presence of Nursing Scale (PONS) was used to measure nursing presence practiced by registered nurses as perceived by MHCUs (see Annexure G).

The questionnaires that were used for the research study were culturally relevant to the study population as they were in a language that the participants understood, which is English. There was thus no need for the questionnaires to be translated to make them culturally relevant and comprehensible. The closed-ended questions in the questionnaires were simple and unambiguous. Statements were in short sentences and in everyday vocabulary to accommodate all participants, irrespective of their educational level. For participants who could not read, the well-trained mediators and the researcher were able to read out the questions to them and guide them through what was required of them. The reading out of questions to participants by the researcher and mediators also awarded them a platform to address individual misunderstandings prior to participants, giving them their choice of responses to the questions. The researcher ensured that participants would be able to understand the questionnaires by conducting a preliminary study prior to the actual study's data collection process to identify and remedy any challenges related to the comprehension of the questionnaires. Participants were expected to respond to the questions by choosing an answer from an already provided list of possible answers by either putting an 'x' or circling their choice, thus ensuring that participants who are of low educational level could still participate. See a detailed discussion of the data collection tools (questionnaires) used in Chapter 3.

1.10.4.3 Data collection procedure

The procedure to collect data consisted of two (2) steps, namely the preliminary study and the main study. Only participants deemed to have the capacity to consent based on the screening by independent persons and who met the inclusion criteria formed part of either the preliminary or the main study. Firstly, a preliminary study with a limited number of participants from the population (in one of the PHC clinics) was conducted by the researcher. This preliminary study was used to pre-test the measurement instruments and to increase the validity and reliability of the study. Participants in this study did not form part of the main study. The data collection of the main study then followed, using the same procedure as the preliminary study. A detailed discussion of these two steps of the data collection procedure followed for this study are provided in Chapter 3.

1.10.4.4 Role of the researcher

The researcher obtained ethical clearance from the Health Research Ethics Committee of the Faculty of Health Sciences, North-West University (HREC) (reference number: NWU-00053-18-A1) (see Annexure M), and permission from the Gauteng Department of Health and the Health District (see Annexure K) to conduct the study. After obtaining goodwill permission from the health district, the researcher obtained goodwill permission from the managers of the 15 identified PHC clinics (see Annexure L). The researchers identified care workers at different clinics and

requested that they assist with the study as mediators. Care workers are individuals employed on a contract basis at the different clinics for ward-based outreach programmes (WBOT). The WBOT-team is made up of individuals possessing pre-nursing or enrolled nursing auxiliary qualifications, their team leader being an enrolled nurse. They work closely with the communities and function as a link between the communities and the district healthcare system. The mediators were briefed and trained by the researcher about the nature of the research and the role they will play as mediators. The researcher identified independent persons to assist with screening potential participants for capacity to consent and for completion of consent forms. The researcher ensured that a preliminary study was conducted and analysed prior to the main study to detect errors and address ambiguities in the questionnaires. The researcher maintained objectivity throughout the study and ensured the ongoing welfare of the participants by being prepared to take appropriate steps in the event of any sort of harm. The researcher will provide feedback to the participants regarding the findings of the study once the study has been completed.

1.10.5 Data analysis

According to Du Plooy-Cilliers *et al.* (2014:206), data analysis in quantitative studies includes finding the basic characteristics of the data set, exposing patterns within the data and recognizing relationships between gathered data and external considerations. The completed questionnaires were read and checked for completeness and coding of the collected data was done by the statistician. If missing data were identified, the incomplete questionnaires were not excluded. Instead, the given answers were considered. Descriptive and correlational statistical methods were used to analyse the data (Terre Blanche *et al*., 2014:188). The statistical analysis of the data was done with the assistance of the Statistical Consultation Services of the NWU (Potchefstroom Campus), using the Statistical Package for the Social Sciences (SPSS) version 25.0 (2017) software. Descriptive statistics included the frequency distribution, percentages, mean and standard deviation (SD). Correlational statistics were determined by calculating correlational coefficients (r), t-tests and ANOVA. Chapter 3 offers a detailed description of the data analysis process.

1.11 Rigour

Rigour refers to the principle of ensuring the truth value of the research outcome (Botma *et al*., 2010:84). The researcher strived to enhance the rigour of the study as discussed in the following sections.

1.11.1 Ensuring validity

Validity refers to whether the deduction of the study is acceptable based on the design and analysis, that is, the degree to which a dimension of an instrument represents a true value (Botma *et al*., 2010:174). Validity is all about determining whether the research measured what it was supposed to measure. In other words, validity is the extent to which the instrument that was selected actually reflected the reality of the constructs that were being measured (Du Plooy-Cilliers *et al*., 2014:256). Both internal and external validity are very important in a quantitative study. Internal validity refers to whether the research design will answer the research question (Du Plooy-Cilliers *et al*., 2014:257). The researcher ensured that an appropriate research design and instruments were chosen to answer the research question. According to Grove *et al*. (2013:694), external validity refers to the extent to which study conclusions can be generalized beyond the sample used in a specific study.

1.11.2 Reliability

Reliability refers to the uniformity and dependability of a research instrument to measure a variable (Brink *et al*., 2012:207). The PONS was used to measure the nursing presence of registered nurses and the MARS was used to measure MHCUs' self-reported medication adherence. The reliability of both data collection tools was calculated by means of Cronbach's alpha coefficient, which is the test used to establish internal consistency (Brink *et al*., 2012:164). According to Terre Blanche *et al*. (2014:154), Cronbach's alpha coefficient is a number that ranges from 0 (no internal consistency) to 1 (maximum internal consistency). A Cronbach's alpha coefficient score of 0.8 and higher was seen as acceptable in this study (Burns & Grove 2009:377, 379).

1.12 Ethical considerations

For the study to be deemed ethical, it was submitted to the Health Research Ethics Committee (HREC) for approval. Permission to conduct the study was requested from Gauteng Department of Health (see Annexure E) and the health district (see Annexure F) in which the study was to be conducted. Goodwill permission was requested from each clinic manager (see Annexure L). The ethical aspects of this research are discussed with reference to the ethical principles, norms and standards as indicated by the Department of Health of the Republic of South Africa (DoH, 2015:14-17). For this study, the researcher paid close attention to the following principles: principles of beneficence, non-maleficence, equality and respect for persons. These principles were integrated into the norms and standards discussed below.

1.12.1 Permission and informed consent

Based on the visual presentation of this process (see Figure 1.1) the care workers (as mediators), sought permission from potential participants to be part of the research study verbally and in writing. The process of informing potential participants about the research study was done in a language they understood well. The mediators were familiar with the population they worked in. The written information on the study allowed potential participants to read the information on their own (see Annexure B). The mediators and the researcher informed potential participants of the purpose of the study, how the research would be conducted, and the possible risks and the benefits of the research.

Once potential participants who had decided to be part of the study, were found to meet the inclusion criteria and deemed to possess capacity to consent to participation in the research study, the independent persons obtained informed consent. This process of screening and obtaining informed consent from participants took place in a private office or consultation room in the clinics where participants felt comfortable. This process was followed on the day of data collection, but prior collection of data. Participants were made aware of their freedom to choose to participate or not and to withdraw from the research at any point in time without penalties. Independent persons were able to assist participants to understand and complete the consent forms. Family members or friends that accompanied participants were only there to offer support during the process of permission and consent. After the process of consent, family members or friends were requested to wait for participants in an identified waiting area.

1.12.2 Relevance and value

The research can contribute to the improvement of care for MHCUs as it reveals how the use of nursing presence by registered nurses can influence the MHCUs self-reported medication adherence, thus making the study ethically justified. The research was an attempt to fill a knowledge gap by determining the relationship between the nursing presence of registered nurses and the medication adherence of MHCUs.

1.12.3 Ongoing respect for persons: anonymity, privacy and confidentiality

All information collected for the study was available only to the researcher, the study supervisor and the statistician. All contact between the participants, mediators, independent persons and researcher took place in a private space such as an office or consultation room at the clinic facilities. Family members or friends accompanying the participants were not part of the actual data collection process. They were not allowed to see the study questionnaire or to see what participants had written in their responses to the questions to ensure that the data collected

remains confidential. The data collected for the research study, including completed informed consent documents, were locked in a cabinet of the researcher's office. Participants were first given consent forms for completion separately from the questionnaires as the consent forms would have their names on after completion. Participants were then given questionnaires to start the data collection procedure. Participants did not write their names or the names of the clinics on the questionnaire. Computerized information was stored on a password-protected computer. The participants' choice not to share certain information was respected. No information was shared with persons not officially and directly involved with the study.

1.12.4 Favourable risk-benefit ratio

Participants were reassured that the study had been approved by the HREC of the North-West University, Faculty of Health Sciences (reference number: NWU-00053-18-A1), and that permission was granted by the Gauteng Department of Health and the relevant health district. No harm to the participants were anticipated and no risks were foreseen related to their participation. Participants were made aware of the possible benefits of the study (direct or indirect benefits). The study had no direct benefit for the participants, but the indirect benefit would be that of potential improvement of care for MHCUs at PHC in the urban health district. The benefits of the study outweighed the risks.

The research was classified as a medium risk study because the only expected discomforts participants may have encountered were slight emotional discomfort and mental exhaustion when completing the study questionnaires. The researcher ensured that an experienced psychiatric nurse was on standby to assist and provide emotional support to participants. Furthermore, participants were given a break during the completion of the questionnaire. The researcher was aware that the chosen participants for the study are classified as a vulnerable population as they may be factually incapable or less capable of understanding information and processing it to reach a decision about whether to participate in the research or not (DoH, 2015:26). The family members provided the necessary support. The other anticipated risk was the possibility of registered nurses working in the participating urban district feeling threatened by the research study and its results. To mitigate the risk, the researcher gave feedback of the study with a non-intimidating and non-criticising approach, but strive to uplift, equip and build through recommendations based on the outcomes of the study.

1.12.5 Role player engagement

The researcher was assisted by caregivers as mediators to raise awareness about the research and to recruit participants, get permission from potential participants and to collect data. Independent persons assisted with screening potential participants for capacity to consent and

with obtaining informed consent. The researcher was also doing the study under the close supervision of an academic supervisor. Clinic managers were also involved in the research process to give goodwill permission. The statistician was involved to ensure an adequate sample size for the study and to assist with data analysis.

1.12.6 Fair selection of participants

The researcher only invited participants relevant to the study as indicated in the discussion of the population and sampling. During the selection of participants, the researcher adhered to the formulated inclusion and exclusion criteria to ensure that only participants suitable for this study formed part and that they were selected fairly.

1.12.7 Scientific integrity

The researcher ensured that an appropriate design and method were used to achieve the research aim. The research proposal was submitted to the scientific research committee of the Quality in Nursing and Midwifery (NuMIQ) research focus area for verification of the scientific integrity. The researcher ensured scientific honesty by recognizing original authors and bypassing plagiarism. The research participants were not exposed to unnecessary risk or harm.

1.12.8 Researcher competence and expertise

The researcher has an appropriate theoretical background as she has successfully completed and passed a research methodology module and she was conducting the study under the supervision of an individual with appropriate academic qualifications (PhD), competence to conduct research (through previous research projects) and knowledge in and interest in the research topic. An experienced statistician was involved to ensure that adequate and high-quality data were collected and analysed.

1.12.9 Publication of results and feedback to participants

The results of the study will be published in the form of a research article in an accredited scientific journal with the aim of highlighting the relationship between nursing presence and medication adherence. The results will also be made available to the participating health district so that they can implement any recommendations made based on the findings. During feedback, the researcher will ensure that her report offers no criticism or judgement of the registered nurses in the urban health district. The healthcare workers will give feedback to participants in the study during their daily health talks to the patients after the researcher briefed them on the results of the study.

1.12.10 Monitoring of the research

The research progress was monitored by the research committee of the NuMIQ research focus area through reports that the researcher provided as and when requested. The research supervisor monitored and advised the researcher throughout the research process. The statistician monitored whether the questionnaires were appropriate and valid, and whether the sample was adequate. Goodwill permission from the clinic managers ensured that participants were treated with respect and that the daily activities of the clinics were not disrupted.

The researcher gave verbal progress reports to the health district managers and DoH during monthly health district meetings, and these were captured in the minutes of the meetings. Progress reports on progress the study, maintenance and security of records, evidence of compliance with proposal and conditions of approval and if applicable, adverse events, were documented in monitoring reports to the HREC. Any amendments to the proposal had to be submitted to the HREC for approval, no changes were necessary.

1.12.11 Conflict of interest

Conflict of interest in research refers to situations in which financial or other personal considerations may compromise or have the appearance of compromising a researcher's professional judgement in conducting or reporting research. The researcher declares no conflict of interest in the project as she did not stand to benefit financially or otherwise from conducting the study. The study was partly funded by the NRF, who had no direct affiliation with the researcher or the study, and the researcher also assured that she had no direct relationship with the participants.

1.12.12 Data storage and management

The data collected for the study could only be accessed by the researcher, supervisor and the statistician. Both electronic and hard copy data are kept safe by keeping all hardcopy data in locked cupboards in the researcher's office and electronic data is password-protected. The data is being used for the said study only and would be destroyed after 5 years by erasing all electronic data and shredding hardcopy data.

1.13 Summary

There have been challenges with the implementation of the WHO's most fundamental health recommendation of integrating mental healthcare into existing PHC systems (Ssebunnya *et al*., 2010:129). When considering the medication adherence of MHCUs, it is quite possible that the nursing presence of registered nurses at PHC clinics could contribute to strategies to improve the integration envisaged by the WHO by enhancing medication adherence of MHCUs. The study attempted to fill the knowledge gap by describing the relationship between MHCUs' medication adherence and the nursing presence practiced by registered nurses at PHC clinics, with the aim of determining a relationship between the two variables. The hope is that this will ultimately improve the lives of MHCUs

1.14 Division of chapters

The study can be outlined as follows:

Chapter 1: Study overview

Chapter 2: Literature review

Chapter 3: Research methodology

Chapter 4: Results and discussion

Chapter 5: Evaluation, conclusions, limitations and recommendations of the study

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter offers a review of existing literature to gain a clear understanding of the topic. A literature review entails an organized and summarized written presentation of what was found when the literature related to the proposed study was reviewed (Grove *et al*., 2013:97). The purpose of the literature review was to review similar or related studies that could serve as a basis for the study and to help the researcher to develop a conceptual map for this chapter. It also offered an in-depth understanding of the relevant study methods and instruments with which to measure the study variables (Brink *et al*., 2012:52).

For the search strategy, the researcher used the following keywords to conduct the literature search for this research study: medication adherence, mental healthcare users/psychiatric patients, primary healthcare, nursing presence and registered nurses.

The search engines and databases used included the following: EBSCOHost, ScienceDirect, ProQuest, Scopus and Google Scholar Search. Articles from the search that appeared relevant were examined for inclusion in the study. After an initial investigation, resources that were deemed irrelevant were not considered. Articles published before 2010 were included for historical purposes and relevance to the study, but the researcher focused on the literature from 2010 to the present to access the most recent information regarding the topic. Secondly, hard copy textbooks, dissertations, and theses were used, and the interlibrary loans facility was used for textbooks not available at the institution where the research was conducted.

The following headings emerged from the literature: medication adherence as a concept; benefits of medication adherence and consequences of non-adherence; registered nurses managing patients with mental disorders at PHC clinics; uniqueness of the population of MHCUs; interventions that may be used to improve medication adherence for MHCUs; nursing presence as a concept; the relationship between the two study variables; tools used for the study; nursing theories relating to medication adherence; and nursing presence. The discussion of these themes is followed by a summary of the chapter.

2.2 Conceptual map

This conceptual map serves as a visual representation of the relevant literature. The conceptual map serves as the structure for the discussion of the literature and visually represents the main ideas.

Figure 2-1: Conceptual map of relevant literature

2.3 Medication adherence as a concept

Looking at the first main concept of this study, namely medication adherence, Stentzel *et al*. (2018:156) state that the preferred definition of this concept is provided by the "World Health Organization" (2003:3). The WHO (2003:3) defines medical adherence as the extent to which the behaviour of the persons corresponds with agreed recommendations from certain healthcare service providers. Some researchers use the term medication compliance interchangeably with medication adherence as synonyms, though the terms have their own significance. De las Cuevas *et al*. (2014:1548) agree that the connotations are quite different, and they describe adherence as being about the agreement of the service user along with certain health recommendations from the healthcare professionals. On the other hand, compliance implies the passive involvement of patients in their prescribed treatment plan (De las Cuevas *et al*., 2014:1548).

According to Patton *et al*. (2018:138), medication adherence is the most important factor with regard to the betterment of the health of care users. This is emphasized by Amado *et al*.

(2015:233), who refer to it as “next frontier in quality improvement”. Tham *et al*. (2018:537) state that medication adherence is associated with numerous factors, which can be classified into four categories: patient-related, medication-related, illness-related, and external/environmental-related factors. With respect to MHCUs, these would be behaviours knowingly or unknowingly caused by the users themselves, such as the user’s insight into their disorder. Medication-related factors refer to those factors linked to the psychiatric or non-psychiatric medications a MHCU is prescribed, such as number of medications. Illness-related factors would then refer to any disabilities, disorders or symptoms linked to the illness itself, such as psychosis and lastly, external/environmental factors are external forces, like access to mental healthcare services.

A study by Semahegn *et al*. (2018:10) highlights that maintaining adherence to medication is the most essential, but challenging, part of the pharmacological treatment regime for all chronic disorders, more so for major psychiatric disorders. According to Hartung *et al*. (2017:102), these challenges of good medication adherence are linked to a series of interrelated steps involving patients, healthcare providers and the healthcare system. De las Cuevas *et al.* (2014:1547) warn practitioners like registered nurses that expecting good medication adherence to prescribed psychotropic medication for MHCUs is essential, but they have a duty to ensure that the diagnosis of the psychiatric disorders is well established and the indication for the prescribed medication is adequate.

2.4 Benefits of medication adherence and the consequences of non-adherence

Medication adherence is crucial for the management of different illnesses, be it physical or mental, as it leads to better health conditions for healthcare service users (Patton *et al.*, 2017:138). According to Chapman (2017:485), interventions aimed at improving adherence may target healthcare providers, patients, carers or family members, or a combination of these. At PHC clinics, it is the core responsibility of the registered nurses to enhance medication adherence for healthcare service users to maximize benefit from drug treatment (Çetin & Aylaz, 2018:739). Research has demonstrated that good medication adherence can lead to lower healthcare utilization and total costs and is associated with better health outcomes and decreased risk of hospitalization (Akinbosoye *et al*., 2016:454).

Medications prescribed for a particular illness would yield specific outcomes that are related to the illness and the intended outcomes of the prescribed medication. For example, patients with inflammatory arthritis who are adherent to their medication, would have benefits such as a relief of their symptoms or even prevention of irreversible joint damage (Rai *et al*., 2018:2015). Olowe and Ross (2017:a1456) indicate that good medication adherence for patients with hypertension would achieve target control measures of their blood pressure and prevent the development of cardiovascular, cerebrovascular or renal complications. Good medication adherence to antibiotics

is beneficial for treating illness by destroying infection-causing bacteria that harms the body (Hayhoe *et al*., 2018:2299). Apart from antibiotics, there are other useful medications, such as antiretroviral drugs that when taken as required by patients will benefit them by reducing their incidences of opportunistic infections and disease progression (Mthembu & Van Wyk, 2014:719).

For MHCUs, medication adherence is associated with the prevention of relapse, better management of their disorders and ultimately a better quality of life (Çetin & Aylaz, 2018:378). De las Cuevas *et al*. (2014:1547) share the same sentiments by stating that medication adherence for MHCUs ensures broader stabilization, functional recovery, better social and vocational reintegration. For MHCUs diagnosed with a bipolar mood disorder, for example, medications such as mood stabilizers have positive outcomes such as decreased chances for a relapse into mania and a greater decline in overall depressive symptoms (McKenzie & Chang, 2015:37). According to Tham *et al*. (2016:797), MHCUs diagnosed with schizophrenia would be put on antipsychotic medications to decrease psychotic symptoms like hallucinations and delusions.

However, people who are prescribed self-administered medication usually take around half of their prescribed doses and may stop treatment early. They are then be referred to as being non-adherent to their medication (Chapman, 2017:485). Medication non-adherence can be either intentional or unintentional, which may include failing to initially collect prescription medication, stopping a medication before completing the course of therapy, taking more or less of a medication than prescribed, or taking a dose at the wrong time (Semahegn *et al*., 2018:10). Gebeyehu *et al*. (2019:102) state that medication non-adherence is an indication of multi-factorial challenges experienced by healthcare systems in relation to the management of illnesses and unfortunately may result to serious and tremendous health-related consequences (Stentzel *et al.,* 2018:156).

Tham *et al*. (2016:797) highlight the seriousness of these consequences by bringing to our attention that not only the non-adherent MHCU would be affected negatively, but society at large. This means that there will be repercussions specifically for the non-adherent user, the healthcare providers and the healthcare system as a whole.

For MHCUs, medication non-adherence can lead to failure in the improvement of their health condition, leading to a lower quality of life (Hartung *et al*., 2017:101) and finally decreased overall patient survival, as stated by Atkinson *et al*. (2016:577). Failure in the improvement can refer to progression/worsening of disease (Akinbosoye *et al*., 2016:454), increased relapse rates (Patton *et al.*, 2018:139), which then leads to disruption of family, social and work life of the MHCU (Brown & Gray, 2015:193). The MHCU's complications related to the illness can also lead to poor functional outcomes (Bright, 2017:99) or even frustration (Conn & Ruppar 2017:270) from reduced effectiveness of subsequent medication (Semahegn *et al*., 2018:10), higher mortality rate

(Akinbosoye *et al*., 2016:454) and increased suicide rate (Bright, 2017:99). Gebeyehu *et al*. (2019:102) specify the complications as exacerbation of psychotic symptoms, increased aggression and violence in comparison to adherent MHCUs, higher hospitalization, and poorer community adjustment. Ruppar *et al*. (2015:699) include misdiagnosis of MHCUs as a negative effect of being non-adherent to medication. For the healthcare system, non-adherence leads to resources being wasted on unused medicines, preventable hospitalizations and more medication prescriptions (Chapman, 2017:485). One other challenge the healthcare system may experience from poor medication adherence of MHCUs is the increase in the revolving-door phenomenon (Gerber, 2017:1).

Conn and Ruppar (2017:270) claim that the increased frustration of healthcare providers like registered nurses is linked to medication non-adherence of service users. Atkinson *et al*. (2016:577) associated healthcare providers' frustration to their inability to determine treatment efficacy and effectiveness, leading to effective medication being judged as ineffective, thus a possibility of expensive diagnostic procedures or medications being unnecessarily used (Bright, 2017:99).

2.5 Registered nurses managing mental disorders in PHC clinics

The philosophy of PHC forms the basis of South African's health policy and provides guidance for healthcare service delivery in South Africa. It has led to a visible improvement in healthcare service provision (Visagie & Schneider, 2014:562). According to a study by Murphy *et al*. (2015:304), the services at PHC are nurse-driven and are expected to embrace a more patient-centred model of chronic care, which emphasizes the importance of empowering patients to play an active role in self-management by enhancing their knowledge, motivation and skills for behaviour change, as well as their self-efficacy to carry out the behaviours necessary for long-term self-care in their life context.

A study by Nunu and Munyewende (2017:a1262) explain that in the South African health system, PHC level is the first point of call for healthcare service users in the health system offering basic, curative and preventative care services. This excludes services that are complicated and require specialized care. Registered nurses have been of great importance in the provision of quality, efficient and cost-effective healthcare at this level of care for the past 50 years (Smolowitz *et al*., 2014:1). The roles and responsibilities of registered nurses, suited their unique proficiency and training for PHC, include complex care management, leadership management in care team, sharing the visits with other providers, visits of preventative care, visits with complex patients, medication titrations by the protocols, running specialized care services, and other similar services (Iddins *et al*., 2015:261).

One in every four (4) people suffers/will suffer from a mental illness at some point of their life span (Dube & Uys, 2016:1). It is a leading cause of disability. According to a study done in South Africa, 20% of the people who attended PHC services suffered from mental disorders that required intervention (Maluleke *et al*., 2015:123). One of the specialized services that registered nurses at PHC are expected to provide is mental healthcare services as per the recommendation of WHO (2008:17) as means to bridging the gap of accessibility and affordability of the services to MHCUs. According to WHO (2008:17), mental healthcare provided at PHC services should include early identification of mental disorders, treatment of common mental disorders, management of stable psychiatric patients, referral to other levels where required, attention to the mental health needs of people with physical health problems, and mental health promotion and prevention.

Despite this crucial role of providing mental healthcare services at PHC clinics, a study by Dube and Uys (2016:1) reported negative attitudes towards MHCUs among registered nurses. Furthermore, Alfredsson *et al*. (2017:8) identify in their study that PHC nurses displayed stigmatising attitudes and used stigmatising terms and psychiatric labels. This correlated with a decreased treatment effect for MHCUs, a higher probability of relapses and lack of human resources willing to specialize in the mental health field. In addition, it creates a barrier to good mental healthcare services and integration. A study by Abera *et al*. (2014:119) concluded that the poor identification and management of mental health problems by PHC nurses was due to a lack of knowledge, skills and experience required to deal with patients with mental disorders. These same sentiments of limited knowledge and skills were echoed by who were participants in another study from the same health district (Gerber, 2017:4). On the other hand, Dube and Uys (2016:6) said that poor management could also be attributed to the lack of clarity concerning South African PHC nurses' role in the management of MHCUs.

According to Jenkins *et al*. (2013:372), it is important to provide adequate and effective training to PHC registered nurses, as well as ongoing support and supervision to enhance their skills and knowledge on recognition and management of mental health disorders in PHC settings. A study by Abera *et al*. (2014:114) indicated that effective mental healthcare in PHC settings has potential benefits for MHCUs, such as a more holistic care and reduced stigma. Hardy and Kingsnorth (2015:272) highlight that training of such a nature should enable registered nurses to offer advice to maintain personal wellbeing; support MHCUs to change unhealthy behaviour; identify risk factors for stress and/or recognize symptoms of stress; help MHCUs to manage stress; recognize and manage psychological distress and mental illness; treat people with mental health problems in the same way as those with a physical health problem; monitor the physical health of MHCUs; and assist them to self-manage their conditions. Registered nurses at PHCs are on the front line of health behaviour promotion and can be trusted to transform the perceptions and concerns of

MHCUs regarding their medication, thus providing them with the training and support they require to be effective medication adherence interventionists (Chase *et al*., 2016:364) is crucial.

A South African study on the integration of mental health into PHC done by Dube and Uys (2016:1), stated that this move will ensure that all PHC registered nurses involved in the management of MHCUs will have a shared understanding of the users' progress and adherence to medication regimens. Brown and Gray (2015:193) admit that medication adherence is the core responsibility of MHCUs, but emphasize that it was important that registered nurses all recognize that they have an important role to play in promoting medication adherence, collaboratively with MHCUs.

It is therefore clear from the discussion that equipping registered nurses at PHC clinics with adequate skills and knowledge is a priority as they are an important human resource to ensure effective management of MHCUs using PHC services.

2.6 The uniqueness of the population of MHCUs in relation to medication adherence and specific barriers to good medication adherence

MHCUs are a unique population of healthcare service receivers as they are regarded as vulnerable and caring for them is a complex and difficult task for registered nurses (Sobekwa & Arunachallam, 2015:1510). Moreover, medication adherence is a challenge for people with all kinds of chronic illnesses, both psychiatric and physical (Napolitano *et al*., 2015:48). This was confirmed by the WHO (2003:17) statistical tools, which reported that around 50% of people with chronic conditions do not adhere to the medicines that have been prescribed to them (Ruppar *et al*., 2015:699). Archiopoli *et al*. (2016:1607) henceforth acknowledge that the importance and complexity of medication adherence have led to extensive literature on factors that are correlated to or predict adherence, with the goal of informing effective interventions to address the relevant barriers and enhance adherence.

This global challenge of medication adherence is even more important for MHCUs as medication adherence is regarded as the cornerstone of their therapy (Hartung *et al*., 2017:101). According to Nath (2017:289), it is also directly linked to good prognosis of the illness, broader stabilization, functional recovery, and better social and vocational reintegration (De las Cuevas *et al*., 2014:1547). According to Gebeyehu *et al*. (2019:102), globally, non-adherence rates among patients with severe mental illness ranged between 30 and 65% and continues to worsen and thus continues to be a growing public health concern (Semahegn *et al*., 2018:10). De las Cuevas *et al*. (2017:682) simplify the concept of medication non-adherence as an instance when a MHCU refuses to take their medication or fails to take it as prescribed. Chapman (2017:485) further explains that medication non-adherence may be intentional or unintentional.

Additionally, the concept of medication adherence ranges in accordance with the type of medication prescribed and the diagnosis of the MHCU (Nath, 2017:290), for example a study on adherence of MHCUs diagnosed with schizophrenia receiving first-line antipsychotic medications, reported the medication to be efficient to approximately 70% to 80% of those specific MHCUs. Of that 80%, only 50% adhered to their medications, the other 50% were non-adherent (Kretchy *et al*., 2018:292). Magura *et al*. (2014:381) gave medication non-adherence ranges for different mental disorders as being between 28% and 52% for major depressive disorder, 20% and 50% for bipolar disorder, 20% and 72% for schizophrenia and an estimate of 57% for anxiety disorders.

It is crucial for the MHCU to comply with the agreed recommendations around their prescribed medication as per the direction of RNs as adherence will contribute to a decrease in morbidity, mortality and healthcare costs (Conn & Ruppar, 2017:270). There are certain factors that are said to compromise one's ability to adhere to medication. Hartung *et al*. (2017:102) looked closely at those barriers, specifically linked to MHCUs. Some conditions may compromise their ability to take medications as prescribed. Amado *et al*. (2015:232) firmly support the sentiment of custom-made interventions for medication non-adherence by stating that knowledge of factors that are associated with non-adherence in a specific population is of great importance. They play an important role in establishing suitable interventions to improve adherence for the relevant population. The barriers linked to MHCUs' medication adherence appear in a pool of literature as described below:

2.6.1 Lack of insight

According to Tessier *et al*. (2017:316), lower adherence to pharmacological/medication treatments was significantly associated with lower insight. The same sentiments were shared by Tham *et al*. (2018: 542), namely that medication adherence among MHCUs with good insight is better and that the relationship between these two concepts affects the treatment outcomes. Improvement of insight does not occur only during admission in inpatient settings, but also at outpatient settings (Tham *et al*., 2018:545) thus registered nurses working at PHC clinics can intervene in this regard. Thus, improved medication adherence from improved insight may lead to the effective management of mental disorders and ultimately making the MHCU feel better.

2.6.2 Cognitive function

Good cognitive function is a critical component of care for patients with chronic illnesses like MHCUs, for without it they may be at greater risk for poor adherence to medications (Caballero *et al*., 2018:e195). Velligan *et al*. (2017:463) state that poor executive function and forgetfulness were the most common reasons for non-adherence self-reported by poorly adherent patients with schizophrenia in their study. The same sentiments are shared by Tham *et al*. (2018:536), who

reported that cognitive impairments may occur in MHCUs and they are usually seen through behaviours such as inability to remember to take medication appropriately and inability to properly communicate. A study by De las Cuevas *et al*. (2017:686) confirmed the above as they concluded that patients' medication adherence decreased as their cognitive psychological reactance increased. Good cognitive function may also be of importance for MHCUs in executing complex tasks of medication adherence, such as taking different dosages of medication at specific times of the day (Caballero *et al*., 2018:e199).

2.6.3 Side effects

All psychotropic medication in aspects of the mental disorder carries certain risk factors with certain side effects. Çetin and Aylaz (2018:740) in their study on schizophrenic patients and medication adherence stated that drug side effects considerably impair medication adherence in people with mental disorders. Antipsychotics is one of the classes of medications with side effects such as lethargy, weight gain, ticks, tremors, cognitive impairment, as well as disturbance while sleeping, which severely impacts the functionalities, overall quality and self-esteem of MHCUs. According to a study by Tham *et al*. (2018:545), the presence of side effects can lead to non-adherence of MHCUs to medication, so it is important that registered nurses observe for any side effects displayed by patients and that they make suggestions for medications to reduce side effects from medications that are prescribed. Some side effects are worse than the illness itself.

2.6.4 Perceived trauma associated with psychiatric care

Tessier *et al*. (2017:318) reported that MHCUs who reported trauma such as being mechanically restrained or coercively committed were less likely to adhere to their medications or use mental health services than those who did not experience the trauma.

2.6.5 The comorbidity of substance abuse

According to Dewing *et al*. (2015:347), the inappropriate use of alcohol and drugs by MHCUs may lead to impaired judgement while increasing the risk of negative behaviour such as poor medication adherence. The substances' effects may temporarily mask or interfere with symptoms of medication efficacy, leading to assumptions that the medication is ineffective or unnecessary. Velligan *et al*. (2017:464) disapprove the use of substances by MHCUs, but make healthcare practitioners aware that some patients may use recreational drugs or alcohol to self-manage symptoms of illness or to temporarily escape the stresses of a chronic health condition. Henceforth, the need for interventions by registered nurses, collaboratively with MHCUs to remedy the issue of substance use in order to gain effective medication adherence for MHCUs is of great importance.

2.6.6 Lack of financial resources

A study by Maluleke *et al*. (2015:127) revealed that participating MHCUs in their study reported lacking the financial resources to meet their basic needs, such as needs for food and shelter. This absence of support contributed to them not adhering to their medication. The other factor that was linked to the lack of financial resource was stated by Darbà *et al*. (2016:143), who highlight that pharmacological cost related to the prescribed medication for MHCU would decrease the probability of them being adherent. It may be the effect of bearing some part of the pharmaceutical cost. There must be some interventions or facilities through which the MHCUs would be able to acquire treatment free of cost, and it is a great achievement for the South African government that has reiterated the importance of PHC, making services free at the point of entry and also issuing the medication for free (Nunu & Munyewende, 2017:a1262) in order to help them cope with their lack of financial resources.

2.6.7 Intentional non-adherence

Some care users are demotivated and demoralized psychologically. This makes them intentionally non-adherent with respect to the medicines that are being provided to them. According to the statement of Rai *et al*. (2018:2021), MHCUs might still be in denial of their mental disorder diagnosis, leading them to intentionally discontinue taking their prescribed medication. Velligan *et al*. (2017:462) further identify stigma (a feeling of disgrace because of mental illness and/or need for treatment) as another reason MHCUs may intentionally not adhere to their prescribed medication.

2.6.8 Improper communication

A study by Atkinson *et al*. (2016:581) concludes that among several known factors contributing to poor medication adherence, the primary barrier is a lack of effective communication between MHCUs and healthcare providers. Chapman (2017:485) clarifies the statement of lack of effective communication by referring to it as the quality of the information about the treatment regime/medication provided to the MHCUs. Communication is an integral part of the process and plays a crucial role in effective healthcare service delivery. They also found nurses at times do not understand what medicines are prescribed to the patients, so they are also not able to convey the proper information to the MHCUs. This affects MHCUs and their medication adherence.

2.6.9 Using less beneficial drugs

Patients do not have a proper ideology about what drugs are beneficial for them. However, they depend on their healthcare practitioners. It is the core responsibility of registered nurses to ensure that most suitable medicines for MHCUs are prescribed (El-Azzab & Abu-Salem, 2018:107).

According to Tham *et al*. (2018:544), providing MHCUs with less beneficial medication will result in failure to improve, lack of faith in the healthcare services and then they will see no benefits of being adherent to their medications.

2.6.10 Co-existence of other medical conditions

A study done by Marais and Petersen (2015:14) reported that mental disorders frequently co-exist with other chronic diseases like HIV/AIDS. Patton *et al*. (2018:139) point out that this may lead to MHCUs having to take multiple medications and may lead to them being non-adherent to their medication. Miasso *et al.* (2016:780) concur with the above statements and further state that MHCUs with other comorbidities require a complex therapeutic regimen and management. They have poor medication adherence if such complexities are not addressed.

2.6.11 Attitude towards medication/ dissatisfaction with the treatment provided

There are many cases where MHCUs are not satisfied with the treatment and medication that are provided to them, which will lead them to have a negative attitude towards the prescribed medication (Velligan *et al.*, 2017:464). According to Yang *et al*. (2012:230), the negative attitude may emerge from MHCUs' perceptions of medication having no benefits for them or their perception that they have the capacity to control or manage their problem on their own (Gebeyehu *et al*., 2019:106). Tham *et al*. (2016:806) also highlight that for users diagnosed with schizophrenia, the type of antipsychotic (typical/atypical) also affected their attitude towards medication, in turn affecting their medication adherence.

The discussion above paints a clear picture of the extent to which medication adherence for MHCUs as a vulnerable population is of importance. It further states unique factors that are barriers to the population's medication adherence, which can assist in implementing tailor-made interventions by registered nurses to improve their adherence.

2.7 Interventions that may be used to improve medication adherence for MHCUs

Improved functioning is the most important part of treatment for MHCUs because it makes them head towards a better life standard free from possible psychological issues (Del Mar Bonnis *et al*., 2019:468). According to De las Cuevas *et al*. (2014:1547), the advances of psychopharmacology in the last five decades have allowed broader stabilization, functional recovery, better social and vocational reintegration, and more favourable outcomes for patients with psychiatric disorders. However, medications do not work if MHCUs do not take them, hence the need for continuous research on interventions to improve medication adherence. According to Dahan *et al*. (2016:660), there are different strategies with good benefits that can be applied by healthcare service providers like registered nurses as interventions to enhance medication

adherence of MHCUs. These interventions aimed at improving medication adherence may target registered nurses, patients, carers or family members, or a combination of these. Hennessy and Cocoman (2018) emphasize that these interventions must be a core responsibility of registered nurses as healthcare professionals, even though it is known that caring for MHCUs is a difficult task confronting clinicians (Sobekwa & Arunachallam, 2015:1513).

The focus for registered nurses on the interventions might be on encouraging good communication, promoting behaviour change, on gaining knowledge or skills, or being involved in decision making (Chapman, 2017:485) as described below:

2.7.1 Shared decision making in mental healthcare

Slade (2017:146) refers to shared decision-making as a complex and dynamic social interaction between a clinician such as a registered nurse and a MHCU regarding the health needs of the user. Chapman (2017:486) shares the slogan 'no decision about me, without me', which was proposed by the UK government in support of shared decision making for all patients' consultations.

It is also necessary to adopt shared decision-making while delivering effective services to the service users as highlighted in a study by Slade (2017:147), who further elaborates on the matter that registered nurses have expertise in diagnosis and treatment options, but MHCUs have expertise in illness experience and treatment preferences. Bringing these two types of expertise together can produce better decisions. One other interesting study on shared decision-making of MHCUs concluded that self-reported medication adherence was significantly higher in those that participated in decision making regarding their treatment (De las Cuevas *et al*., 2014:1547). Ruppar *et al*. (2015:704) also add that the shared decision-making platform would be great to improve registered nurses' ability to address users' medication needs and concerns through effective MHCUs' engagement.

2.7.2 Empowering people with mental illnesses to self-manage

It is necessary to empower the service users so that they are able to handle themselves on their own. People suffering from mental issues are likely to lack in self-management. However, they must be treated in such a way that they are able to manage their health on their own. According to Strout *et al*. (2018:1533), care users who have been in contact with the PHC centres have been found to have had a positive effect on their living standards. Additionally, they have been able to manage their actions and also had enhanced confidence that made them head towards a better life. There are certain programmes that are effective in developing the mental health of the care

users and make them feel better. This has also resulted in the enhanced confidence level of such care users.

2.7.3 Using peers to stimulate the recovery process

Peers in this regard refer to people in recovery from mental illness, who are trained and employed to offer support to others using mental health services due to mental disorders (Rosenberg & Argentzell, 2018:53). Working in collaboration with the peer can help the healthcare professional to deliver effective services to the users. Support and complete personal recovery plans are usually prepared for assisting the care users.

2.7.4 Education of healthcare professionals to support recovery and resilience

In order to deal with people who are mentally ill, it is necessary for the healthcare professionals to be educated and acquainted with strategies to handle the MHCUs. According to Li *et al*. (2018:83), these healthcare professionals can help the MHCUs regain their confidence and also assist them with rebuilding their skills and deepen their knowledge so that they are able to cope with their normal living.

2.7.5 Education of MHCUs and their family members

It is necessary to make the MHCUs aware of the timing of their medication and that there are various therapies through which the healthcare professionals are able to manage the mental issues of the care users. A study by Nafradi *et al*. (2017:e1864) stated patient empowerment as being associated with positive health and clinical outcomes from medication adherence, but it requires a co-constructed sense of control in the nurse-patient dyad. This also keeps the care users away from suicidal thoughts and other trauma related to mental disorders. A study done by Kretchy *et al*. (2018:29) on the burden caregivers experienced from caring for MHCUs revealed that it is important to make resources available to support caregivers throughout the disease process because such support services will help reduce their burden and improve their role in ensuring optimal medication adherence levels in their family members. Holtzman *et al*. (2015:817) explain that social support from family members can help MHCUs maintain clinic visits and medication adherence, as the support often provides moral encouragement and healthcare assistance through transportation and reminders.

2.7.6 Engaging staff

Engaging all healthcare workers and training them to provide care to the MHCUs is important and must be ensured by the healthcare professionals. They are also required to nurture an effective relationship with the patients. As per the statement of Grigorescu *et al*. (2018:360), this can also

help the healthcare workers to engage with other care workers. Efficient and team-based workflow is effective for improving the services that are catered to them. Farmakas *et al*. (2014:43) advocate for a teamwork approach in caring for MHCUs, which according to Iddins *et al*. (2015:254) provides better care and improved medication adherence.

2.7.7 Scheduling appointments

It is the core responsibility of the nurses and other healthcare professionals such as pharmacists to ensure that the care users are provided with medicines at the proper time. Scheduling is also necessary to ensure that care users are taking good care of themselves. According to El-Mallakh and Findlay (2015:1086), along with scheduling appointments, it is also necessary to use certain tools such as mobile phone text message reminders for the MHCUs and to acquaint the MHCUs with these tools. The study further highlights that such technological supports can be beneficial to MHCUs who are committed to medication adherence and are occasionally non-adherent due to forgetfulness.

This can make them independent so that they care for themselves when healthcare workers and nurses are not around. In the long run, care users are bored by taking so many medicines.

2.7.8 Customising support tools

According to Semahegn *et al*. (2018:10), the variety of factors related to non-adherence calls for individually tailored approaches to promote medication adherence, which means registered nurses have to make sure that the approaches they use to promote medication adherence is applicable to individual users' circumstances and not a 'one size fits all' type of intervention. Ruppar *et al*. (2015:703) advise registered nurses that one way they can customise approaches to improve MHCUs' medication adherence would be for them to assess the user's readiness to change, which will enable the nurses to gauge the user's level of motivation to change their medication-taking behaviour to improve adherence. Adherence management approaches can then be tailored to the specific MHCUs' perceived level of readiness to change his or her behaviour. Pakpour *et al*. (2017:2529) state that customising interventions to address medication non-adherence is crucial as MHCUs with a psychiatric diagnosis of bipolar mood disorder, for example, might not have the same positive outcomes to enhance adherence to the same intervention that was effective for an MHCU diagnosed with schizophrenia.

2.7.9 Using beneficial medication and simplified medication-taking regimes

Ruppar *et al*. (2015:705) believe choosing medications based on evidence-based guidelines would help registered nurses ensure that MHCUs are prescribed medications that will benefit them and these benefits will motivate users to adhere to their medication. Other strategies with

beneficial effects were simplified dosing regimens (Chapman, 2017:485), such as users being required to take their medication at night only.

The above summarizes the interventions found in the literature that can help registered nurses at PHC to improve MHCUs' medication adherence. In the following section, nursing presence as a potential way to increase medication adherence, is discussed. The meaning of the concept "nursing presence" is discussed first, followed by a discussion of how nursing presence can potentially increase medication adherence.

2.8 Nursing presence as a concept

Nursing presence is described as follows:

> *"Nursing presence is a human connection between a nurse and a patient. The connection entails a reciprocal relationship between the two parties where they are initially vulnerable beings. In this relationship, the patient will need to gain trust and confidence in the nurse which will ultimately lead to risk of being open to a relationship by both the nurse and the patient. In the established relationship, the nurse will exhibit nursing presence by being a compassionate and committed caregiver" (Kostovich, 2012:169).*

In addition, Mohammadipour *et al*. (2017:4314) provide an operational definition of nursing presence as a phenomenon that occurs via nurse-patient interactions within the health experience expressed through the nurse's desire to begin interacting with patients. Wolf (2017:196) makes registered nurses aware that nursing presence is not task-driven and therefore will require their full attention to practice it. O'Connor (2017:348) calls being present with another an act of courage to learn as well as the curiosity and desire to engage in an authentic relationship that is needed to deepen learning.

According to Mohammadipour *et al*. (2017:4314), nursing presence falls into the category of nursing interventions that are non-invasive. Nursing presence is often used in conjunction with other nursing interventions (Zyblock, 2010:123), like engaging MHCUs in their plan of care. However, Stockmann *et al*. (2018:63) state that unfortunately the practice of nursing presence receives less attention than the other interventions it embodies. This leads to the concept being less explored and often being confused with other concepts, such as empathy and support (Papastavrou *et al*., 2012:370). Mohammadipour *et al*. (2017:4322) credit this intervention as one unique intervention nurses should be proud of and embrace in their nursing practice as it allows them to participate in the professional, humanistic, mental-emotional, and spiritual–ethical

domains; described by Kostovich (2012:169) as 'being with the wholeness of the patient' along with performing the nursing procedures when interacting with the patient.

Caldeira and Timmins (2015:2356) state that the scientific development and digitalized world in the field of the nursing profession, its ethical and moral foundations actually give more reason why nursing presence is crucial in nursing practice. Jones (2018:43) approves nursing presence as a means of ensuring that healthcare is still humane and dignified. Stockmann *et al*. (2018:61) further state that the humane and dignified healthcare brought along by nursing presence will assist in moving registered nurses away from being task-oriented and objectifying MHCUs. Arakelian *et al*. (2016:2528) state that registered nurses might experience conflict between internal and external demands in caring for MHCUs. Nursing presence, which comes from humanism, demands respect for the MHCU and his or her autonomy.

Nursing presence occurs within the nurse-patient interaction, which according to Mohammadipour *et al*. (2017:4320) is a co-constructed interaction, implying that task-based behaviours co-exist with social-emotional behaviours where the MHCU and the registered nurse accompany each other in creating meanings and recognizing the path to healing. Papastavrou *et al*. (2012:370) refer to this interaction as an interpersonal process characterized by sensitivity, holism, intimacy, vulnerability and adaptation to unique circumstances. According to Zyblock (2010:123), patients in their study who had experienced nursing presence during their care from nurses, regarded the nursing presence as more important than any specific technical care or skill performed on them. O'Connor (2017: 348) supports the above-stated patients' observation by highlighting that it was indeed important for registered nurses practising nursing presence to do so in such a way that the MHCU receiving it realizes this unique intervention, their commitment, concern, and personal attentiveness. Furthermore, Flynn (2016:36) urges registered nurses to always keep in mind that nursing presence may remain elusive in terms of a generalized definition, but MHCUs are able to define presence from their individual perspective.

According to Papastavrou *et al*. (2012:370), nursing presence is representative of caring behaviours within the nursing profession, behaviours that provide comprehensive care (Mohammadipour *et al*., 2017:4322) that is personalized (Caldeira & Timmins, 2015:2356) or responsive to the patient's needs (La Cava Osterman *et al*., 2010:204) and most importantly, focusing on the here and now (La Cava Osterman *et al*., 2010:198). This caring behaviour matures in levels from bedside/physical to clinical/psychological and then ultimately healing/spiritual presence (Papastavrou *et al*., 2012:370). Stockmann *et al*. (2018:60) simplify these levels as follows: bedside presence refers to the registered nurse interacting body-to-body with an MHCU. Clinical presence refers to the interaction being mind-to-mind, and healing presence being interaction spirit-to-spirit. La Cava Osterman *et al*. (2010:197), on the other hand,

prefers to refer to these levels as phases, namely: presence, to partial presence, and then full presence.

Registered nurses are expected to be open and spontaneous to respond to the call of presence from MHCUs and alter levels/phases of presence to give based on the users' needs and behaviours; the current context of the environment and the registered nurses' past experience (La Cava Osterman *et al*., 2010:204). According to Mohammadipour *et al*. (2017:4318), this openness and spontaneity will ensure that each MHCU is cared for as a unique human being, which explains why methods of treatment would not always follow a fixed law with each mental healthcare user. Registered nurses would benefit from using caring behaviours such as eye contact, giving information, empathy, active listening, self-disclosure, and silence as means of being open when practicing nursing presence (Stockmann *et al*., 2018:61). The behaviours will encourage open communication between the MHCUs and the registered nurses (Stockmann *et al*., 2018:61) as according to Papastavrou *et al*. (2012:370), MHCUs often need a person to talk to and to listen to them to express emotions such as anger, sorrow or even excitement and such communication with them shows them that registered nurses are concerned about them and that their opinions regarding their health state are being taken into consideration.

Du Plessis (2016:380) indicates nursing presence as a skill through which MHCUs' wellbeing might be promoted. It is supported by Stockmann *et al*. (2018:63) who state that the intention of nursing presence is to improve client outcomes, be it mental or physical wellbeing. Papastavrou *et al*. (2012:376) state that nursing presence provides registered nurses a great opportunity to assess MHCUs' health condition, to recognize in time their deterioration and provide necessary care in that regard. This simply means that through nursing presence, registered nurses can use the self to assess, set goals, plan, intervene, and evaluate MHCUs' outcomes (La Cava Osterman *et al*., 2010:198).

According to Stockmann *et al*. (2018:63), through nursing presence, registered nurses in their study provided comfort and engaged patients in their plan of care and this contributed to the establishment of a trusted relationship between nurses and patients, thus making patients progressively more willing to participate in their own care (Papastavrou *et al*.,2012:376). Zyblock (2010:123) further states motivation and hope as benefits of nursing presence for MHCUs. Stockmann *et al*. (2018:63) also highlight that registered nurses can use nursing presence to affirm their MHCUs' value as people by showing them they are worth their time despite the condition they are in. According to Gelogahi *et al*. (2018:297), registered nurses practising nursing presence are able to assist MHCUs through reintegration of self, not only by helping to intervene with the cause of the disease, but also by helping them maintain a sense of belonging, control, meaning, worth, and esteem through the process. Furthermore, Mohammadipour *et al*.

(2017:4319) highlight an interesting aspect that registered nurses who practiced nursing presence as part of their nursing care practice, were a good link between the impersonal technological world and the human world within the health service delivery, more so as they have a prominent role in the healthcare system.

According to Finfgeld-Connet (2008:530), the process of nursing presence can be initiated when a MHCUs' vulnerability, fearfulness, and worry get out of control; and they sense a need for a therapeutic experience. Mohammadipour *et al*. (2017:4319) echo the same sentiments by stating that users may make a call for nursing presence when they believe that they are faced with challenges in the course of the illness experience. La Cava Osterman *et al*. (2010:197) further refer to the MHCUs expression of challenges as cues and stimuli from them to guide the registered nurses' way of enacting presence. This starting point will entail the MHCU's narrative about his or her life situation, which will lay as the foundation for relationship building, information sharing, shared deliberation and shared decision making (Arakelian *et al*., 2016:2528).

Stockmann *et al*. (2018:63) reported in their study the unfortunate effects of failing to enact nursing presence reported by registered nurses in their study. The registered nurses felt that patients did not receive thorough education without nursing presence and this resulted in non-adherence to their plan of care, leading to increased readmissions. Failure of registered nurses to use nursing presence as an intervention may lead to MHCUs feeling objectified and forgotten (Stockmann *et al*., 2018:60). Mohammadipour *et al*. (2017:20) also report that a decrease in the practice of nursing presence by registered nurses has been found to increase aggression among MHCUs, violence towards healthcare providers and may cause loneliness and anxiety for the users.

La Cava Osterman *et al*. (2010:197) report that registered nurses might encounter challenges that may hinder their practice of nursing presence in caring for MHCUs, such as inadequate time, organizational pressures or even lack of education and understanding of the very nursing presence practice (Caldeira & Timmins, 2015:2355). Caldeira and Timmins (2015:2355) further warn nurses that if time is used as a reason not to provide nursing presence, then this is something that will most likely be detrimental to both the nursing profession and to the patients in their care. La Cava Osterman *et al*. (2010:201) disregard the time factor as being a barrier by stating that nurses did not need a set-aside time to enact presence, they needed to ensure presence was embedded in their practice of providing nursing care. Caldeira and Timmins (2015:2356) confirm this by stating that nursing presence is all about adding meaning to time spent with MHCUs in order to nurture patients' holistic wellbeing. Gelogahi *et al*. (2018:305) recommend the practice of nursing presence by registered nurses because of the simplicity and inexpensiveness of this intervention, which does not have any side effects for the recipient.

Papastavrou *et al*. (2012:376) state that the use of nursing presence by registered nurses may improve their communication skills and enhance their mental wellbeing. According to Mohammadipour *et al*. (2017:4314), registered nurses can gain in-depth knowledge and understanding about MHCUs under their care. Mohammadipour *et al*. (2017:24) further state that nursing presence can lead to personal growth for registered nurses, through their understanding and openness. Nursing presence is said to be positively associated with registered nurses' intent to stay in the nursing profession, and they also reported increased job satisfaction and work involvement (Tsai *et al.*, 2015:2). A study by Hunter (2015:918) concluded that presence may offer registered nurses an alternative way of coping with stress by altering the way they operate within a stressful work environment, leading to a quiet mental space which will give them perspective and ultimately enhanced patient care.

Mohammadipour *et al*. (2017:23-24) identify antecedents for registered nurses to practice nursing presence namely: professional/clinical competence, personal maturity/self-actualization, openness to experience and environmental issues. Yesilot and Oz (2016b:97) refer to the above antecedents as primary elements of the presence process and goes further to identify elements that are related to MHCU as being expected to be aware of their needs and be receptive to accepting assistance. O'Connor (2017:348) explains that the environment for nursing presence to occur must be conducive to the interconnection between the registered nurse and the MHCU to take place, thus allowing trust, caring, and vulnerability. If both the registered nurse and the MHCU enter into the nursing presence process with all the required antecedents, at the end of the presence process, the uniqueness of the registered nurse as a professional and as a person who is needed by the MHCU is approved, leading to both the registered nurse and MHCU becoming better people (Yesilot & Oz, 2016b:97-98).

2.9 Relationship between medication adherence of mental healthcare users and the nursing presence of registered nurses in PHC clinics in an urban health district

According to Hardy and Kingsnorth (2015:271), registered nurses make up a large part of the PHC workforce and therefore have increasing responsibility for making decisions about patient care, including care of MHCUs. These registered nurses that work at PHC to provide assistance to MHCUs play a crucial role and can be instrumental in improving the medication adherence of MHCUs (Chase *et al*., 2016:357). The role can be both mentally and physically exhaustive to the registered nurses, especially if they are expected to provide such services without being equipped with the relevant skills and knowledge training (Grigorescu *et al*., 2018:357). Medication non-adherence among people with mental disorders is more prevalent in PHC settings than in specialized services due to differences in disease recognition capacity and help-seeking behaviours of the MHCUs (Miasso *et al*., 2016:776).

Using multilevel approaches such as nursing presence to improve the medication adherence of MHCUs is more likely to reach greater numbers of MHCUs and yield greater overall improvement than focusing solely on patient-level interventions (Ruppar *et al*., 2015:705). A study by Holtzman *et al*. (2015:451) further emphasize the above statement by recommending that research on interventions focusing on practitioners characteristics may help to further improve medication adherence for healthcare service users. Zyblock (2010:123) reports that nursing presence has a positive impact on MHCUs' recovery, remission and healing, and most importantly has a sustained therapeutic effect that may last long after the actual presenting event had occurred (Zyblock, 2010:123). Yesilot and Oz (2016:443) believe the objective for registered nurses practicing nursing presence is to intervene in order to change the course of the MHCU's health and disease, and enhancing their medication adherence would be one positive course for their health.

The therapeutic relationship within which nursing presence occurs, is proven to have positive implications for MHCUs. As per the statement of Smith-Merry *et al*. (2015:32), these benefits include adherence to treatments, reductions in psychological distress, symptoms improvements and patient satisfaction. Mohammadipour *et al*. (2017:4313) explain the 'co-constructed interaction' that takes place during nurse-patient interaction with nursing presence as an interaction that enhances cooperation, coordination and collaboration in caring and improves nursing outcomes, such as medication adherence.

For example, being suicidal is a known symptom for some mental disorders, like major depressive disorder and schizophrenia. Researchers with an interest in suicidal patients have found that a nursing presence approach to their treatment could raise the MHCU's awareness of the ruminative nature of suicidal thoughts and facilitate non-judgemental perception of their thoughts. This could have a positive effect on preventing MHCUs from committing suicide (Zeng *et al*., 2017:734). However, based on the views of Coyne (2013:804), nursing care to a MHCU is one of the toughest practices as it is not a task-driven endeavour. Wolf (2017:196) links reasons for the practice being tough to expectations of the interaction between the MHCU and registered nurse to facilitate humanization, meaning, choice, quality of life and healing in living and dying compared to other nursing disciplines. Penque and Keamey (2015:44) believe registered nurses might benefit from the use of nursing presence as an intervention in which all their nursing tasks are encompassed to master this tough practice, thus leading to improved nurse-patient interaction and patient outcomes.

It is clear from the above discussion that caring behaviours that registered nurses may display when they practice nursing presence as an intervention when caring for MHCUs will definitely improve users' outcomes. It would therefore be of importance to look at MHCUs' medication

adherence as means of improving their outcomes as it has been clearly highlighted as the most important aspect in their management (Hartung *et al*., 2017:101) and directly linked to good prognosis of the illness and quality of life (Nath, 2017:289). A good prognosis leads to improved MHCUs' outcomes such as functional recovery, and better social and vocational reintegration (De las Cuevas *et al*., 2014:1547). From the literature, there was no evidence available on the relationship between nursing presence of registered nurses and MHCU medication adherence. In light of this shortcoming, the researcher saw the study as imperative to bridge the knowledge gap by determining MHCUs' medication adherence and nursing presence of registered nurses and describing the relationship between these factors.

2.10 Tools used for the study

Given the importance of establishing the relationship between nursing presence and medication adherence, the researcher was able to identify already existing tools (questionnaires) to can measure the two (2) study variables (MHCUs medication adherence and nursing presence of registered nurses) quantitatively to determine the relationship between MHCUs self-reported medication adherence and nursing presence demonstrated by registered nurses at PHC clinics in an urban health district as perceived by MHCUs.

The two identified questionnaires were standardized self-report surveys. To determine MHCUs self-reported medication adherence, the MARS was used (Thompson *et al*., 2000:241-247). To determine nursing presence of registered nurses as perceived by MHCUs, the PONS tool was used (Kostovich, 2012). These questionnaires are discussed in detail in Chapter 3.

2.11 Nursing theories relating to medication adherence and nursing presence

Throughout the history of the nursing profession, there have been many nursing theories that have been developed based on evidence-based practice and proven research results in order to guide nurses in their nursing care (Im & Ju Chang, 2012:157). These theories have oftentimes helped patients and nurses reach better outcomes and solve problems based on basic principles. Nursing theories are further highlighted as being of utmost importance in researching and utilizing proven infrastructures of success, especially in the current ever-changing nursing environment.

There are certain theories that can be applied by registered nurses to address aspects that may bridge the gap that arises in between the medication adherence of MHCUs and themselves as healthcare service providers, of which some are discussed below:

2.11.1 Nursing theory pointing towards medication adherence

The nursing theory of self-care of chronic illness, developed by Riegel *et al.* (2012), can be seen as one of the guiding nursing theories when considering MHCUs' medication adherence. This theory suggests that a primary means of caring for patients with chronic conditions like mental disorders is self-care, with healthcare professionals like registered nurses having a role in promoting self-care. According to WHO (2008:19), individuals' role of self-care may range from collaborative decision making concerning their treatment, to actively adhering to prescribed medication, through to changing health-related behaviours such as drug and alcohol use or stress management. Riegel *et al*. (2012:195) further provide an operational definition of self-care as a process of maintaining health through health-promoting practices and managing illness. According to Udlis (2011:131), self-care does not occur in a vacuum as the MHCU will have to interact with and be influenced by healthcare professionals like registered nurses. The researcher saw this theory as fit to guide registered nurses in interactions with patients with chronic disorders like mental disorders.

One of the assumptions of this middle range theory is that there are differences between general health-promoting self-care and illness-specific self-care. General self-care is a dynamic, subjective process influenced by age, gender, culture, education, socioeconomic status, and so forth. Self-care that occurs in association with a chronic illness also is influenced by other people (e.g. registered nurses) and has direct consequences for symptom relief, quality of life, and survival (Riegel *et al*., 2012:195).

A second assumption is that when health providers like registered nurses interact with MHCUs, their intention to form a partnership should be to motivate MHCUs to engage in a level of self-care that can realistically be incorporated into their daily life and lifestyle. In a study by Kralik *et al*. (2010:203) patients revealed their need for an understanding, non-judgemental approach to care, built on a relationship that is based on trust and shared understanding, a relationship that recognizes and values their experiences and perspectives. It is within this context of a mutually rewarding relationship that the self-care of chronic illness takes place. Engaging in self-care makes the MHCU an active participant in the management of illness. Self-care behaviours may be recommended by others (e.g., healthcare providers or family members) or may be chosen by the MHCUs to meet his or her own goals.

Key concepts of the theory are:

- **Self-care maintenance**

Self-care maintenance is behaviours used by patients with a chronic illness to preserve health, to maintain physical and emotional stability, or to improve wellbeing. These behaviours may be

health-promoting behaviours (e.g. coping with stress) or illness-related behaviours (e.g. being adherent to their prescribed medication) and are said to often mirror the recommendations of healthcare providers like registered nurses (Riegel *et al*., 2012:196). Adherence of MHCU to prescribed medications is an essential component of self-care maintenance (Riegel *et al*., 2012:196). A study by Udlis (2011:133) concludes that consequences of self-care maintenance in chronic illness converge into three major themes, namely improved clinical outcomes, reduced healthcare expenditures and improved quality of life.

- **Self-care monitoring**

Riegel *et al*. (2012:197) self-care monitoring is the process of observing oneself for changes in signs and symptoms. It is a process of routine, vigilant body monitoring, surveillance, or body listening. The goal of self-care monitoring is the recognition that a change has occurred. Monitoring for changes related to health or wellbeing is a normal human behaviour, but in self-care of chronic illness, monitoring needs to be more systematic and part of a daily routine. Chapman (2017:485) states that medication self-care monitoring is generally effective in improving medication use, adherence, clinical outcomes, and reducing adverse events. Self-care monitoring in MHCUs could include activities such as monitoring their anger levels for users with schizophrenia as a means of achieving emotional stability.

- **Self-care management**

Self-care management is the response to occurring signs and symptoms. It involves an evaluation of changes in physical and emotional signs and symptoms to determine if action is needed. These changes may be due to illness, treatment, or the environment. In this context, situation awareness involves the MHCUs alertness to their bodily sensations and the ability to reliably determine how these sensations change in response to the medication (Riegel *et al*., 2012:196). Those who are managing self-care comprehend the meaning of changes and are able to mentally reproduce options and decide on a course of action (Riegel *et al*., 2012:197). If a response is needed, self-care management requires that treatment be implemented and then evaluated as a method to determine an effective treatment. Self-care management requires that MHCUs pay attention to the effectiveness of a medication to evaluate whether or not it should be tried again in the future.

Registered nurses should keep in mind that self-care management decisions and capacities fluctuate and evolve as life and illness present new challenges (Kralik *et al*., 2010:202) and this is where their role of working collaboratively with MHCUs to negotiate the adoption of as many of the advocated behaviours as the user can tolerate and accept comes in. Riegel *et al*. (2012:196) cautioned registered nurses that healthcare users with chronic diseases like mental disorders often have self-care knowledge-based on personal experience about what self-care behaviours

are effective for them and this knowledge must be respected, but registered nurses should encourage behaviours that have been proven to be effective rather than behaviours that lack evidence of effects, fail to provide consistent benefit, or may even be harmful.

2.11.2 Nursing theory pointing towards nursing presence

The humanistic nursing theory (Paterson & Zderad, 1976:23) could serve as a theoretical framework for registered nurses who choose to practice nursing presence. This theory is grounded in existentialism and emphasizes the lived experience of nursing. One of the existential themes that it builds on is the affirmation of being and becoming of both the MHCUs and the registered nurse, who are actualized through the choices they make and the intersubjective relationships they engage in. Wu and Volker (2012:472) further clarify that the registered nurse–MHCU relationship is characterized by interactions designed to promote wellbeing and existential growth in the context of the lived world. In the world of humanistic nursing theory, when we speak of human beings, as per study at hand, we mean MHCUs (e.g., individuals, members of families or members of communities) and registered nurses. A person becomes a MHCU when he or she sends a call for help with some health-related problem. The person hearing and recognizing the call becomes a registered nurse and will care for the MHCU by presence and other nursing actions or activities (Wu & Volker, 2012:472).

Zyblock (2010:121) highlights presence as an integral component of the theory of humanistic nursing and further acknowledges it as “a mode” of being available or open in a situation with the wholeness of one unique individual being. Presence is transformative to the MHCU’s care experience, having the potential to facilitate their healing process. A registered nurse, by intentionally choosing to become a nurse, has made a commitment to help others with health-related needs. It is important to emphasize that in humanistic nursing theory, each registered nurse and each MHCU is taken to be a unique human being with his or her own particular gestalt. Gestalt refers to the unique expression of our individuality as human beings who exist in this particular space at this particular time, with circumscribed resources and in a physical body that senses, filters, and processes our experiences to which we assign subjective meanings. The phenomenological nature of the theory proposes that human beings, the world, and their experiences of their world are inseparable thus each person is perceived as existing “all at once.” The researcher is aware that the chosen philosophy of positivism is in contrast with this theory, but highlights that the philosophy was followed in conducting the research study but in connection with the recommendations to nurses regarding nursing presence, the researcher agrees with the theory.

This theory emphasizes the caring aspects of nursing and further clarifies nursing, as seen through humanistic nursing theory, as the ability to struggle with another through “peak

experiences related to health and suffering in which the participants are and become in accordance with their human potential". The struggle evolves within a dialogue or intersubjective relating between the participants, illuminating the possibility for each to "become in concert with the other". According to Paterson and Zderad (1976:23), in nursing, the purpose of this intersubjective relating, is, "nurturing the wellbeing and more-being of persons in need"

The process enfolded in humanistic nursing theory is beneficial to self-reflective practitioners in all areas of nursing, and registered nurses at PHC can also equip themselves with the use of the theory in managing MHCU under their care. MHCUs call to registered nurses both verbally and nonverbally, with all sorts of health-related needs such as the user being intentionally non-adherent to their medication because of the side effects. In clinical settings like PHC clinics, registered nurses who want to apply the humanistic nursing theory to their practice, need to illuminate the concepts of empathy, comfort, and presence innate. It is important to hear the calls as registered nurses and know the process that lets them understand those calls. In hearing the calls and searching one's own experiences of who they are, their personal angular view, they may progress as humanistic nurses through practising nursing presence.

The theories mentioned above mean that medication adherence of MHCUs can be encouraged through self-care of MHCUs and registered nurses play an important role as supporters of their self-care through nursing presence.

2.12 Summary of the chapter

In this chapter, the researcher provided an overview of the study variables (medication adherence and nursing presence). To evaluate the importance of medication adherence for MHCUs, all the necessary points in relation to registered nurse and PHC were discussed. It is clear from the literature that the prevalence of mental health disorders will continue to increase and their management at PHC settings is unavoidable, thus putting registered nurses at the forefront of the management of patients with these mental disorders. It was also evident from the above discussion that MHCUs' medication adherence remains a challenge for this vulnerable population, even when it is emphasized as a crucial element in their prognosis and quality of life. It was also clear that medication adherence of MHCUs at PHC would benefit from registered nurses working collaboratively with them in managing their mental health.

Challenges related to MHCUs' medication adherence are related to multiple factors, health provider related factors being one of them. There is a need for research studies such as this one, looking at nursing presence of registered nurses. Hopefully, after answering the questions aimed to be answered by the study, more information will be obtained to help the researcher identify and conclude whether or not there is a relationship between MHCUs' self-reported medication adherence and the nursing presence of registered nurses at PHC clinics in an urban health district in Gauteng province. A detailed research methodology followed for the research study will follow in chapter 3.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

Choosing a proper research methodology is essential for completing the research project successfully. This chapter provides a brief outline of the research methodology that was chosen for this research. It furthermore applies a framework, called the research onion, to explain the research philosophy, approach to theory development, methodological choice, research strategies and study context, and data collection and analysis, along with justifications where relevant. It also includes a detailed discussion on the rigour (validity and reliability) of the study instruments, which was an indispensable part of this research. The research methodology is a systematic plan for gathering information for conducting research. The research methodology may include both quantitative and qualitative research methods that include surveys, interviews, experiments, observation as well as secondary research (De Brún *et al*., 2016:346).

3.2 Methodology outline

A detailed discussion of the research methodology is provided in this chapter. In summary, the study was conducted by surveying 180 MHCUs from 15 PHC clinics of the urban health district in Gauteng Province using a questionnaire for collecting quantitative data, which were subjected to analysis through statistical tools and techniques. The study followed a deductive approach to theory development/research approach and a positivist research philosophy. A cross-sectional, non-experimental, correlational and descriptive research design was followed to conduct the research. The detailed discussion follows.

3.3 Research onion

Saunders *et al*. (2019:130) put the idea of a research onion forward. This idea is used to explain the research methodology of this research study to offer a clear understanding of the framework followed for completing this research. The framework of the research onion is represented as layers of an onion. To complete a research project a researcher has to proceed from the outermost layer of the research onion towards the innermost layer. The research onion contains six (6) layers, namely 1) research philosophy; 2) approach to theory development; 3) methodological choice; 4) research strategies and study context; 5) techniques by which data is collected, and 6) procedures by which it is analysed (Saunders *et al*., 2019:130). Passing through the different stages of the research onion helps the researcher develop an effective methodology. In every stage of research onion, the researcher has to select a particular method for the specific research. This framework eliminates any kind of misconception and misunderstandings during the development of a research methodology. The researcher used the idea of the research onion

as a guide to outline the research methodology used in this research study (see Figure 3.1). The figure is representative of how the research onion framework was followed in this specific study. The application of the research onion and each layer is discussed below.

Figure 3-1: Research onion (Adopted from Saunders *et al*., 2019:130)

3.3.1 Research philosophy

The research philosophy, an essential element for designing a research methodology, is the belief regarding the way in which information on a particular phenomenon is collected, assessed and utilized in research. Studying research philosophy is essential as it allows a decision to apply a particular philosophy in line with the research question. The three overarching types of research philosophies are positivism, realism, and interpretivism (Saunders *et al*., 2019:145). The belief of the positivist research philosophy is that observation can lead to factual knowledge that can be measured and that is trustworthy (McCusker & Gunaydin, 2015:539). This research philosophy relies on observations that are quantifiable and involves statistical analysis of the data. The basis of the realism research philosophy is the scientific assumptions that depend on the notion of independence of reality for developing knowledge. The realist philosophy can be critical and

direct. Interpretivism helps a researcher to interpret with the assumption that accession to reality is permitted with the help of social constructions like shared meanings, consciousness, instruments, and most importantly, language. According to Saunders *et al*. (2019:145) the interpretivism research puts forward that reality is created through social interaction in which social actors create partially common meanings and truths, in other words reality is constructed inter-subjectively and is applied to the qualitative analysis of the data.

3.3.1.1 Justification of the selection of the research philosophy

In the present study, the positivist research philosophy was used as it is the appropriate research philosophy for quantitative research methodology. This research philosophy enabled the researcher to focus on the facts and the provision for human interest is limited. This has helped in this particular research as it allowed MHCUs as participants to participate independently and for the researcher to conduct the research being purely objective (Moule *et al*., 2017:22-23). This philosophy was the most appropriate to fit the aim of the study, which was to conduct a quantitative study that will involve measurement of variables and statistical analysis of the collected data (Du Plooy-Cilliers *et al*., 2014:27).

A similar study, by Ausili *et al*. (2017:75), on measuring self-care highlighted the importance of using a quantitative research approach to measure a concept such as self-care in chronic illness to better understand patients' self-care and to tailor specific interventions aimed to improve one or more of the self-care processes. In another similar study by Pawlikowski *et al*. (2018), the authors concluded that the use of the positivist approach jointly with the humanistic approach in nursing had the potential to be useful in nursing research by gathering data for improved techniques, finding increased effectiveness of patient interactions, and increasing observable evidence for research. Hence the choice of the researcher to use the PONS to measure MHCUs' experience of nursing presence, and the MARS scale to determine their self-reported medication adherence, with the intention of making recommendations for the humanistic interaction of nursing presence, in order to improve medication adherence.

3.3.2 Approach to theory development

Theory development approach/research approach can be defined as the process or plan comprised of various steps involved in broad assumptions of data collection method, analysis of the collected data and its interpretation. The approach to theory development, therefore, is chosen on the basis of the research problem and research question of a particular research project. A choice from two types of approaches can be made for application in a particular research project, the deductive approach, and the inductive approach (Moule *et al*., 2017:155). The focus of the deductive research approach is to test an existing theory. In this type of research, extensive study

of the existing research is done and the implication for existing theories is then tested against the current data. According to Polit and Beck (2010:207-208), with the deductive research approach, the researcher will choose already existing theories and develop a hypothesis (predictions about the manner in which variables in the theories would be interrelated if the theories were correct) that would be tested through statistical analysis. To achieve this, the researcher used the theories' constructs, key variables in the theories and also data collection instruments that are aligned with the theories. For this study, the researcher used the medication adherence and nursing presence constructs and theories (see 1.6.1 in chapter 1); and the MARS and PONS data collection questionnaires to test the hypothesis through statistical analysis. Deductive research is generally applied to quantitative research (Clandinin *et al*., 2017:90). Inductive research is applicable to the case of qualitative research. The inductive approach is aimed at developing a new theory that emerges from the accumulated data. In this approach, the scope of the study is narrowed using the research questions and the already researched and existing phenomena are examined from a separate perspective, or a new theory is developed (Basias & Pollalis, 2018:100). According to Saunders *et al*. (2019:152) deductive reasoning occurs when the conclusion of a study is resulting logically from a set of theory-derived evidences, the conclusion being true when all the evidences are true.

3.3.2.1 Justification of the selection of the research approach

A deductive approach was selected for the present research study as it is best suited to quantitative research (Clement *et al*., 2015:20). Moule *et al*. (2017:155) state that deduction is seen as part of quantitative research as it looks to test hypotheses for correlations and relationships. For this study, the researcher used the deductive approach to help to test the hypothesis: There is a relationship between MHCUs' medication adherence and the nursing presence of registered nurses working in PHC clinics in an urban health district in Gauteng, using existing and validated instruments, namely the MARS and PONS scales. The obtained data was thus used to either verify or discount the hypothesis (Moule *et al*., 2017:155).

3.3.3 Methodological choice

According to Moule *et al*. (2017:151), methodological choice/research design is defined as a plan that researcher follows to find answers to the research questions in order to address the research aim and objectives. This study used a quantitative, non-experimental, descriptive, correlational and cross-sectional design. The methodological choice will be discussed below.

3.3.3.1 Quantitative research

According to Singh (2007:63), quantitative research is the best choice to discover the relationship between an independent variable and another dependent or effect variable in a population. Moule *et al*. (2017:154) state that a quantitative research study aims to generate research data that can be analysed numerically using statistical techniques. Botma *et al*. (2010:108) identify quantitative research as the best option when one wants to describe the study variables and determine if there is a relationship between the studied variables. As in this study, the researcher used the questionnaire MARS and PONS to collect data, which were analysed statistically.

3.3.3.2 Non-experimental design/surveys

Non-experimental research designs include descriptive research – studies that summarize the status of phenomena – and correlational studies that examine relationships among variables but involve no manipulation of the independent variable (Polit & Beck, 2010:255).

According to Moule *et al*. (2017:159), data collection techniques mostly used within quantitative nursing research include experimental, quasi-experimental and surveys (non-experimental) types. According to Grove *et al.* (2013:231), quasi-experimental and experimental designs examine causality (cause and effect relationship) and non-experimental designs are used in descriptive or correlational studies. According to Grove *et al*. (2013:224), surveys in quantitative studies tend to mean two (2) things: a) survey refers to a non-experimental design, and b) it is also a term used to describe a data collection technique in which the researcher uses questionnaires to collect quantifiable data from research participants. Du Plooy-Cilliers *et al*. (2014:146) emphasize the importance of having to carefully choose a data collection technique and highlights that choosing a technique should be done with the aim of the specific quantitative research study in mind. For this study, the researcher had to keep in mind that the aim of the study was to determine the relationship between MHCUs self-reported medication adherence and nursing presence of registered nurses, not to examine a cause and effect relationship. Looking at the above-given explanations of 'survey', the researcher decided to use a survey as a data collection technique through the use of questionnaires as a data collection tool. Survey as a non-experimental design also applied in this study as the researcher could not manipulate any of the study variables (MHCUs' medication adherence and registered nurses' nursing presence as perceived by MHCUs).

3.3.3.3 Descriptive design

The purpose of descriptive research in quantitative research is to describe the characteristics of the study variables (Du Plooy-Cilliers *et al*., 2014:75). Botma *et al*. (2010:110) explain that

descriptive designs are a good choice if a researcher wants to describe the variables in their study as they naturally occur. The study variables that were described in this study were self-reported medication adherence of MHCUs and nursing presence of registered nurses as they occur within PHC clinics in an urban health district in the Gauteng province.

3.3.3.4 Correlational design

Du Plooy-Cilliers *et al*. (2014:76) highlight that correlational studies look at the relationship between certain variables or how one variable is affected by another variable. Botma *et al*. (2010:113) further state that the purpose of the design is to describe the existing relationship between study variables, which could mean a change in one variable corresponding to change in another variable/s. Polit and Beck (2010:235) warn researchers to keep in mind that correlation does not prove causation. Moule *et al*. (2017:159) give more explanation with regard to the relationship between study variables as being done by identifying the strength of the relationship through statistical testing that identifies results between a perfect positive (+1) to perfect negative (-1). For this study, the researcher used the descriptive correlational design to describe the relationship between the two study variables (medication adherence and nursing presence).

3.3.3.5 Cross-sectional design

The researcher also used a cross-sectional design, which means data were collected from a cross-section of the populations at a specific point in time (Du Plooy-Cilliers *et al*., 2014:149), indicating that the data were gathered once from the specific sample (Botma et al., 2010:113). The researcher collected data from the MHCUs, at the respective clinics within the urban health district, in Gauteng Province. Data were collected using the MARS and the PONS, where MHCUs were expected to complete the questionnaires once off.

3.3.3.6 Justification of the selection of the methodological choice

In this research, a descriptive, non-experimental, correlational and cross-sectional methodological choice/research design was used. However, an experimental research design was not entertained as it was not possible to manipulate the conditions in this study.

3.4 Research strategies and study context

Alongside and following the methodological choice/research design, are the research strategies, choices, time horizons and the study context (Saunders *et al*., 2019:130). These aspects are discussed in an integrated and applied manner, namely a discussion of the research setting, followed by a discussion of population and sampling

3.4.1 Research setting

Grove *et al*. (2013:373) define the research setting as the scene where a study is conducted. There are three common situations for conducting nursing research: natural, partially controlled, and highly controlled. A natural setting, or field setting, is an uncontrolled, real-life situation or environment. Conducting a study in a natural setting means that the researcher does not manipulate or change the environment for the study. Descriptive and correlational quantitative research studies are often conducted in natural settings. Since this research study was a quantitative, non-experimental, descriptive and correlational design, the researcher found it fit to state that the setting described below was a natural setting (Grove *et al.,* 2013:373).

The area of interest for the study was an urban health district in Gauteng province that is divided into four (4) sub-districts. Across the district, there are 47 primary healthcare clinics that are all expected to be offering primary mental health services to communities. According to statistics the researcher received from the district, 15 of the 47 clinics were offering the majority of the mental healthcare services at PHC level in the urban healthcare district. These 15 clinics are also providing mental health services at secondary level and are therefore able to support and give guidance in the management of mental healthcare at PHC level.

This setting was selected because it is an exemplary district in terms of integrating mental health care services into PHC as one of the significant goals in the implementation of the National Mental Health Policy Framework and Strategic Plan 2013-2020 (DoH, 2010:23).

3.4.2 Population

Brink *et al*. (2006:206) defines population as a complete set of persons or objects that possess some common characteristics that are of interest to the researcher. Terre Blanche *et al*. (2014:562) refer to the population as the larger pool of cases from which a sample is drawn. The study population for this research study was an estimated number of 500 MHCUs from 15 clinics that offer most of the mental health services in the urban health district, in Gauteng Province receiving mental healthcare services at the PHC level, hence a quantitative approach was relevant for the study. Most of the MHCUs attending the community services were classified as voluntary MHCUs according to the MHCA (SA, 2002), which defines them as those users who submitted voluntarily to a health establishment for care, treatment and rehabilitation services.

The researcher was aware that MHCUs are classified as a vulnerable group, but since they were the only participants suitable to assist in answering the research question at hand, they were included. The researcher ensured that only participants who are stable enough to give consent during data collection take part by screening them for their capacity to consent to participation

using the MacArthur Competence Assessment Tool for Clinical Research (MacCAT-CR) instrument (Appelbaum & Grisso, 2001:88) (see details in section 3.5.1.1).

3.4.3 Sample and sampling

A sample is any subset of the population that is obtained for the purpose of being studied; and the process by which elements are drawn from the population is known as sampling (Fox & Bayat, 2007:54). Sampling involves selecting a group of people with which to conduct a research study Grove *et al*., 2013:351). There are two (2) types of techniques for sampling, namely probability and non-probability sampling techniques (Emerson, 2015:166). The probability sampling technique refers to a method of sampling where all units in a sampling frame have more than a zero chance of being included in the final sample and in non-probability sampling technique, sample is not chosen randomly from the population and the researcher is unable to state the chances of elements of the population appearing in the final sample (Moule *et al*., 2017:410-411).

In this study, the non-probability sampling technique was followed, referred to as consecutive sampling (Polit & Beck, 2010: 311). It involved recruiting all of the people from an accessible population who meet the eligibility criteria over a specific fixed period of time. This type of sampling is the best option if the population of the study is not made up of a large number of elements, more so if the study is a quantitative study. Consecutive sampling leads to what is referred to as an all-inclusive sample, which applied to this research study.

Power calculations were not relevant, as the research used an all-inclusive sample and not a random sample. All participants who were willing to participate and who complied with the selection criteria were included in the sample.

For this study, the sample was an all-inclusive sample of MHCUs receiving mental healthcare services at the PHC clinics within the urban healthcare district in Gauteng province so that participants who showed interest in the study would have equal opportunity to be selected. The sample size was determined by the number of MHCUs at the PHC clinics during the time of data collection and was also dependant on the inclusion and exclusion sampling criteria. The number of MHCUs who voluntarily participated in the preliminary and main study were n=5 and n=180 respectively. The statistician used the Kaiser–Meyer–Olkin (KMO) statistical measure to measure the sampling adequacy for this study. According to According to Weis and Schank (2017:405), KMO values >0.8 are highly suggestive of a sufficient sample size. The KMO for this study was 0.857, thus indicating that the sample of 180 MHCUs was adequate.

3.4.3.1 Inclusion and exclusion sampling criteria

According to Grove *et al*. (2013:352) sampling criteria, also referred to as eligibility criteria, include a list of characteristics essential for membership or admissibility in the target population. This include both inclusion criteria and exclusion criteria (Polit & Beck, 2010:330). The criteria are developed from the research problem, the purpose, a review of literature, the conceptual and operational definitions of the study variables, and the design. The sampling criteria determine the target population, and the sample is selected from the accessible population within the target population (Grove *et al*., 2013:352). Researchers are cautioned to guard against developing sampling criteria that will become so restrictive that they cannot find an acceptable number of study participants (Grove *et al.*, 2013:353). The researcher followed these principles in formulating the selection criteria, which are outlined below in Table 3.1.

Table 3-1: The inclusion and exclusion criteria for sampling

No.	Inclusion criteria	Exclusion criteria
1.	MHCUs attending any of the 15 identified PHC clinics within the urban health district.	MHCUs that participated in preliminary data collection.
2.	Must have been using the PHC services for at least 3 months.	MHCUs who were deemed not capable to give consent after the screening process.
3.	MHCUs who were willing to participate and completed consent forms.	MHCUs not willing to participate.
4.	MHCUs that have been down-referred from secondary mental health services.	MHCUs who were regarded as visitors from other health districts or provinces.
5.	MHCUs who after the screening process were deemed capable to give consent for participation.	MHCUs who used PHC services as assisted or involuntary users.

3.5 Data collection

The procedure of gathering, evaluating and analysing the insights of the research in an accurate way with the help of validated and standard tools and techniques is termed as **data collection** (Grove *et al*., 2013:46). The relevance of the source for data is very important for the accurate collection of data (Althubaiti, 2016:211). In quantitative research, data collection involves obtaining numerical data to address the research objectives, questions, or hypotheses (Grove *et al*., 2013:46). For this study, the discussion of the data collection process included recruitment, data collection tools/instruments, data collection procedure followed by the researcher in this study, and lastly a detailed description of the researcher's role throughout the process.

3.5.1 Recruitment and screening for capacity to consent

3.5.1.1 Recruitment

Recruitment for data collection involves identifying, accessing, and communicating with potential study participants who are representative of the target population (Grove *et al*., 2013:374). Mediators (see section 1.10.4.1) informed potential participants by word of mouth (during their morning health talks and interactions with all clients at the clinics) and by recruitment pamphlets that were made available at all PHC clinics identified for this research study (see Annexure B).

Potential participants who were interested in participating in the study were requested to inform the mediators, who then made an appointment for them to meet the researcher for more information and clarity on the questions they might have had. The meeting between the researcher, the mediators and the participants was scheduled a week after the mediators' contact with the participants in respective PHC clinics. The potential participants were allowed to bring one friend or family member during the initial stage of the recruitment process for the research study until the obtaining of 'permission and informed consent' stage. The family members or friends were there to offer participants physical and emotional support. The researcher and mediators explained clearly what was expected of the participants during the research study process and they also availed themselves to answer questions potential participants may have had.

3.5.1.2 Capacity to consent screening and the results

The researcher ensured that only participants who were stable enough to give consent during data collection took part by screening them for their capacity to consent to participation using the MacArthur Competence Assessment Tool for Clinical Research (MacCAT-CR) instrument (Appelbaum & Grisso, 2001:88). This screening of potential participants was done by the independent persons using the MacCAT-CR tool (see Annexure I). The independent persons were registered nurses working at secondary mental health level within the clinics. Screening was done on the day of data collection, for both the preliminary study and main study. It began with project-specific disclosures to potential participants by the independent persons by word of mouth and recruitment pamphlets provided during the recruitment phase. Screening entailed using a set of questions the researcher adapted to the specifics of this research study. The researcher ensured that independent persons had received extensive training in the use of the research specific adapted MacCAT-CR instrument. This training was provided in the form of face-to-face meetings with the independent persons and an intensive discussion of the instrument (MacCAT-CR) and its application in this research.

The MacCAT-CR is said to be a structured format, flexible to the particulars of any given research project, reliable and valid means of assessing potential participants' capacity to consent for participation in research studies (Appelbaum & Grisso, 2001:88). This tool can be administered in 15–20 minutes. The MacCAT-CR measures the four generally accepted components of decision-making capability namely: understanding, appreciation, reasoning and the ability to express a choice through a semi-structured interview (Appelbaum & Grisso, 2001:88). Each component was assessed by specific question/s with answers rated on a 0–1 scale with 0 reflecting no comprehension and 1 indicating comprehension of a relevant question under a specific component. For this study the 'Understanding' scale had two (2) questions with a score range of 0–2, the 'Appreciation' scale had two (2) questions also with a score range of 0–2, the 'Reasoning' scale had one (1) question with a score range of 0–1 and the 'Expressing a choice' scale had two (2) questions with a score range 0–2. Therefore, from the above, the total maximum score was 7. According to Biros (2018:74), although responses on the tool are scored, no psychometric interpretation of the scale is needed to determine whether or not the potential participant does really have decision-making capacity, thus there was no additional competency needed to interpret the scores and the researcher was able to interpret the scores. For this study, the researcher decided that a total score of 5 or more out of the seven (7) questions deemed the potential participant competent to give informed consent to take part in this research study and a score of 4 or below deemed the potential participant not capable to give informed consent. The researcher and mediators did not form part of this screening and obtaining of informed consent process.

The total number of potential participants screened for the capacity to consent were 194 MHCUs from the 15 clinics in an urban health district of the Gauteng province. Of that 194 MHCU, 180 (92.8% of the total 194) MHCUs were found to have the capacity to consent to participate in the research study (they scored 5 and above) and the remaining 14 (7.2%) were deemed not capable of giving informed consent (scored 4 and below). The 5 and 180 participants who formed the sample for the preliminary and the main study respectively after they were deemed to have capacity to consent based on their scores from the screening process, were given informed consent forms by independent persons to complete.

3.5.2 Data collection tools

The questionnaire used for data collection had four (4) sections: A covered demographic data, section B was a questionnaire on nursing presence using PONS, section C was a questionnaire on medication adherence using MARS and section D was for comments participants might have regarding the entire data collection tool (see Annexure H). The MARS and PONS are discussed in details below, including the advantages and disadvantages of questionnaires.

3.5.2.1 The Medication Adherence Rating Scale

The MARS is a tool for measuring self-reported medication adherence, developed by Thompson *et al*. (2000). It is a ten-item self-report measure of medication adherence to psychoactive medications. It is a quick, non-intrusive and easy tool for patients/MHCUs to complete as the participants are only required to respond to the statements in the questionnaire by circling the answer which best describes their behaviour or attitude towards their medication during the past week. The tool is easy to administer and interpret, both clinically and in a research setting (Thompson *et al*., 2000:244-245). The questionnaire measures the participant's medication adherence looking at three (3) factors, namely: 1) patients' medication adherence behaviour; 2) patients' attitude to taking medication and 3) the negative side effects of psychotropic medication. According to Owie *et al*. (2018:88), the total score range of this questionnaire is from 0 (poor adherence to medication) and 10 (good adherence to medication). Johnson *et al*. (2016:699) further describes levels of medication adherence according to the MARS as a score from 0 to 3 indicating low adherence, from 4 to 6 indicating partial adherence and from 7 to 10 indicating good adherence

The questionnaire has previously been validated internationally, including Nigeria (Owie *et al*., 2018:85-92), but not in the South African context, according to the researcher's knowledge. The study may have the potential to assist in the questionnaire's validation in South Africa. A letter to request permission to use the questionnaire was sent to one of the co-developers of the MARS instrument, Professor Kulkarni (see Annexure C) and permission was granted (see Annexure G).

3.5.2.2 PONS

The PONS is a 28-item questionnaire on a Likert scale developed by Kostovich, to measure nursing presence (2012:167-175). It is a self-report questionnaire for patients to measure to what extent they perceive the nurses as 'present' and how satisfied they are with the nurses' presence (Kostovich, 2012:171). According to Yesilot and Oz (2016a:445), the scale measures presence of the nurse through respectively 26 close-ended items and the two (2) open-ended items measure the patient's satisfaction with the care provided by nurses. The first question of the 26 close-ended items is for initially determining the existence of nursing presence (Kostovich, 2012:169). According to Kostovich (2012:171) ratings of the remaining 25 close-ended items are summed across items to achieve a total score on the PONS as follows: never (1 point); rarely (2 points); occasionally (3 points); frequently (4 points); and always (5 points). The total score of this PONS 25 items is the score that indicates the patient's perceived level of nursing presence demonstrated by registered nurses with the minimum and maximum scores being 25 and 125 respectively and the total score per MHCU will indicate the level of nursing presence demonstrated by a registered nurse as perceived by the MHCU (Yesilot & Oz, 2016a:445). The

scale has no specific sub-divisions: rather it leads to measuring the presence of total nurses by the mean as a whole.

The questionnaire also requires the participants' demographic data (Kostovich, 2002:2012), which the researcher was allowed to adjust for this research, by including age, gender, marital status, level of education, psychiatric diagnosis and number of years receiving medication for the psychiatric diagnosis. Permission to adjust and use the questionnaire was granted by Dr CT Kostovich to Professor E. du Plessis (see Appendix D). The tool has not been validated in the South African population and this study will contribute towards its validation in South Africa.

3.5.2.3 Advantages and disadvantages of questionnaires as data collection tools

Moule *et al*. (2017:301) state that questionnaires are frequently used within nursing and healthcare research. Questionnaires allow for massive amounts of quantitative data to be collected and data can be standardized (Du Plooy-Cilliers *et al*., 2014:160) as evidenced in this study where the researcher managed to collect data from 180 MHCUs, in 15 PHC clinics spread across an urban health district and within a period of a month, using questionnaires which was standardized for all participants. Du Plooy-Cilliers *et al*. (2014:160) further state other advantages of questionnaires to collect data as them being inexpensive, less time consuming and the possibility of being filled anonymously. For this research, the questionnaires were filled in anonymously by requesting participants not to write their names on the questionnaires and that made the participants comfortable to share even their sensitive issues when answering the questions and comments in the questionnaires.

According to Botma *et al*. (2010:135), disadvantages to using self-administered questionnaires should be considered carefully before the researcher finally decides to use them. Disadvantages such as low response rate from participants, misunderstanding of questions and inability of the researcher to ensure the honesty of participants (Brink *et al*., 2012:152) were the disadvantages the researcher considered and tried putting measures in place to address them. Participants completed the questionnaires at the respective clinics they attended, with mediators or the researcher present to respond to any questions they had and the preliminary study which was done was meant to detect flaws and ambiguities with the questionnaires and they were corrected and attended to before the main study. The researcher/mediators emphasized the importance of honesty to participants when answering questions.

3.5.3 Data collection procedure

This procedure is discussed, referring to the preliminary study and the main data collection.

3.5.3.1 Preliminary study and results

Before the main data collection process for this research study started, the efficacy of the questionnaires was tested by means of a preliminary study with 5 MHCUs who were then not allowed to form part of the main study participants. By requesting participants to complete the questionnaires for the preliminary study, the researcher aimed to determine if the questionnaires were clear (Botma *et al*., 2010:275), understandable and easy to complete for potential participants. Participants for the preliminary study separately consented, but the same process as highlighted under the discussions of permission and informed consent and screening was used. Participants in the preliminary study were requested to give feedback on the clarity, ease of the questionnaires or any other problems they encountered so that possible errors or difficulties with measurement instruments would be picked up and remedied to avoid the same errors being encountered during the data collection process of the main study.

The outcome of the application of questionnaires revealed that the questionnaire was too long for some MHCUs. Two (2) of the five (5) MHCUs, halfway through the questionnaire said they would have preferred it if the questions on the instrument were read out loud to them and they responded verbally, with the researcher or the mediators completing the questionnaires for them based on the responses they gave, one stating unsteady hand as a reason and the other one could not concentrate on reading the questions for long. The other three (3) MHCUs took about 40 minutes to complete the questionnaires and they were able to do so on their own, reporting that the used language was simple and clear to understand. The participants further gave a report on two (2) questions on the PONS (Question 27 & 28) which they felt were the same according to them. The researcher also noticed that some participants did not follow the instructions on how to complete the questionnaire e.g. for section B and C, participants did not circle their responses but they used an ‘x’ or ‘√ ‘.

The outcomes of the preliminary study were taken into account when conducting the main data collection.

3.5.3.2 Main study data collection

The day before data collection, the researcher called the respective clinic managers to remind them of the scheduled dates and times for data collection and clinic managers were even requested to acknowledge and give permission for the data collection process by completing a ‘letter of goodwill’ (Appendix L). The researcher ensured that the days, time and venue used for

completion of questionnaires were convenient for participants by communicating and agreeing upon such arrangements through specific clinic mediators and managers. The clinic managers were assured that the data collection process would not interfere with their service delivery to patients in any way. Questionnaires for the research study were delivered to the respective clinics on the day of data collection.

The participants were surveyed directly, separately and were asked to answer questions that were on the full questionnaire package, with the assistance of the researcher or the mediator. The participants were given a total of at least an hour to complete the questionnaires, with a break in between to accommodate those who felt they couldn't concentrate for longer periods. They were requested to respond to the questions as honestly as they could, so as to obtain information that reflected a true picture of the relationship between the two studied variables. The researcher requested a separate office or consultation room at the specific clinics for any contact between the participants and mediators/researcher to provide a private space for participants. The researcher scheduled a day per clinic for data collection in the participating clinics. On days when the researcher was at other clinics, the mediators at clinics already visited by the researcher would continue collecting data from participants as they came to the clinics. The data collection process took place over a period of one month as a control measure to ensure participants took part only once. Mediators at specific clinics were requested to keep a name list of participants who have participated and not so as to keep records thus avoiding multiple participation by participants, the name list was kept anonymous to the researcher and the mediators destroyed the lists by shredding them immediately after data collection. The mediators were requested to sign confidentiality agreements (see Annexure J) in this regard.

Participants were expected to respond to the questions by choosing an answer from an already provided list of possible answers by either putting an 'x' or circling their choice thus ensuring that participants who were of low educational level could still participate. The inputs and challenges noted from the preliminary study were remedied and incorporated during the main study data collection. The researcher and the mediators made the participants aware that they needed to follow the instructions well when answering the questions, it was highlighted to them that for Section A, they were to use 'x' and write fully where required; for section B and C, they had to circle their choice of answers and section D was for them to write their comments in full, if they had any.

For the participants who encountered problems with the length of the questionnaire or other issues that could have led to participants not being able to complete the questionnaires themselves, the researcher and well-trained mediators read out questions from the questionnaire to participants and completed (putting an 'X' or circling a choice) them according to the responses

provided by participants; these were not done for all participants but for those who felt the questionnaires were too long and giving them a break in between did not seem to work as they became irritable, some of the participants who had challenges of unsteady hands due to medication-related side effects also got questions read out to them. The rest of the other participants who did not raise any issues, were able to complete the questionnaires themselves. The reading out of questions to participants by the researcher and mediators also awarded them a platform to address an individual's misunderstandings prior to participants giving them their choice of responses to the questions.

Participants were not expected to write their names on the questionnaires thus ensuring anonymity. The mediators of the respective clinics and/or the researcher were available during the data collection process to assist with clarifying or answering questions MHCUs may have had when completing the questionnaires. Mediators were trained by the researcher on understanding the questionnaires so that in an event where participants struggled to understand the questions from the questionnaires, then mediators could explain or simplify questions/statements to them. After completion of the questionnaires, participants were directed to a common waiting area, where they were provided with refreshments.

Completed questionnaires were put in a box labelled 'completed questionnaires'. From one clinic to the next, the researcher with the help of mediators followed the same methodology of data collection until all data had been collected. The collected data were safely kept by the researcher until all identified clinics were visited and data were collected. The 180 completed questionnaires were then put in one box labelled "completed questionnaires", well-sealed and personally taken to the statistician to assist with data analysis.

3.6 Data analysis

The collected data were organized and summarized to portray or describe important features (Moule *et al*., 2017:349), in this case, the relationship between the presence of nurses and self-reported medication adherence. Descriptive statistics were used to analyse the demographic data of the participants and their responses in both questionnaires using the frequency distribution and percentages which according to Terre Blanche *et al*. (2014:194) refers to a graphical or tabular representation in which the values of a variable were plotted against the number of times they occurred. Analysis of the demographic data was done to provide the researcher with a clear picture of the characteristics of the research participants. The relationship between the study variables (nursing presence of registered nurses and self-reported medication adherence of MHCUs) was determined through calculating correlational coefficients (r), t-tests and ANOVA.

Factor analysis was used to examine interrelationship among numbers of items of the MARS questionnaire and separate those relationships to identify clusters of items that are most closely linked together to form factors or subscales (Grove *et al*., 2013:694). Two (2) types of factor analysis are exploratory (EFA) and confirmatory (CFA). The three pre-existing factors or subscales of the MARS tool were initially taken into consideration when the correlational coefficient was calculated. However, due to the low Cronbach's alpha coefficient value for the third factor, possibly due to a limited number of items for this factor (Grove *et al*., 2013:391) the researcher decided to interpret the data collected through the MARS scale as a whole. There were no subscales in the PONS scale, as the phenomenon of 'presence' is seen as one unified whole (Kostovich, 2012:174), thus no factor analysis was done.

Power calculations were not relevant, as the researcher used an all-inclusive sample and not a random sample.

3.7 Rigour

The term rigour stands for the precision or soundness of the research methodology regarding the planning of the research, collection, and analysis of data, and reporting the data (Harris *et al*., 2015:331). Many ways are followed by researchers for measuring the accuracy of the methods in quantitative research. There are indicators to help in this process. However, for enhancing the rigour of the present study, the researcher looked at the validity and reliability of the measurement instruments as discussed below.

3.7.1 Ensuring validity

Validity indicates whether the conclusion of the study is justified based on the design and interpretation, that is, the degree to which a measurement represents a true value (Botma *et al*., 2010:174). Validity is all about determining whether the research measured what it was supposed to measure. In other words, validity is the extent to which the instrument that was selected actually reflected the reality of the constructs that were being measured (Du Plooy-Cilliers *et al*., 2014:256). Both internal and external validity are very important in a quantitative study. Internal validity refers to whether the research design will answer the research question and external validity refers to whether the researcher will be able to generalize the results from the sample to a broader population (Du Plooy-Cilliers *et al*., 2014:257). The researcher ensured that appropriate research design and instruments (MARS and PONS) were chosen to answer the research questions. The researcher ensured the validity of the research instruments by looking at face validity, content validity and construct validity as discussed below.

3.7.1.1 Face validity

According to Du Plooy-Cilliers *et al*. (2014:256), face validity refers to whether the instruments are well designed and look like what they are supposed to measure. For this study, face validity was ensured by presenting both questionnaires (MARS and PONS) to the statistician prior to the commencement of the study and the statistician confirmed that questions were clear and not ambiguous. The questionnaires were pre-tested on 5 MHCUs to determine if the questionnaires were clear (Botma *et al*., 2010:275), understandable and easy to complete for potential participants. Participants in the preliminary study were requested to give feedback on the clarity and ease of the questionnaires so that possible errors or difficulties with measurement instruments were picked up and remedied to avoid same errors during data collection process of the main study.

3.7.1.2 Content validity

According to Moule *et al*. (2017:178), content validity refers to the ability of the questions on the questionnaires to collect data about the variables under study. For the PONS, the developer of the scale addressed content validity by experts' criticism prior to data collection. The experts noted that the alpha level when some items were deleted from the instrument only decreased slightly, thus supporting the notion that all of the items are part of the same construct (nursing presence) and the alpha of 0.95 did not represent redundancy for the PONS. Based on the said findings, all four content experts agreed that all items on the PONS were reflective of nursing presence and all components of its conceptual definition (Kostovich, 2012:171).

3.7.1.3 Construct validity

According to Grove *et al*. (2013:200) construct validity examines the fit between the conceptual definitions and operative definitions of variables (medication adherence and nursing presence). For nursing presence, Kostovich (2012:174) examined the relationship between the PONS and the construct of patient satisfaction to support construct validity as no other measure exists on which to compare it, as the PONS represents the first time that nursing presence has been operationalized and measured in a questionnaire. Therefore, support for construct validity was addressed by examining the relationship of scores on the PONS to patient satisfaction with nursing care. A single-item indicator of patient satisfaction was correlated with total scores on the PONS, which resulted in a score of 0.801(Kostovich, 2012:172). This correlation was indicative of a very strong positive correlation between nursing presence and patient satisfaction. There were no subscales to consider for the PONS scale, as the phenomenon of 'presence' is seen as one unified whole (Kostovich, 2012:174), thus the correlational coefficient was calculated from the phenomenon representing a single, whole component.

For the MARS, construct validity was analysed through correlation with scores obtained from other self-report measures of compliance (the DAI and MAQ) (Thompson *et al*., 2000:244). The MARS was significantly correlated with the other two instruments and this supported a good construct validity for the MARS (Thompson *et al*., 2000:244). Furthermore, factor analysis which refers to a statistical technique used to identify a relatively small number of factors in order to represent the relationship among sets of interrelated variables (Terre Blanche *et al*., 2014:248) for MARS was determined. Both confirmatory (CFA) and exploratory (EFA) factor analysis were used (Grove *et al*., 2013:398). The results revealed three (3) underlying factors/subscales which were to be initially considered when the correlational coefficient is calculated (Thompson *et al*., 2000:244).

3.7.2 Ensuring reliability

Reliability refers to the consistency and dependability of a research instrument to measure what it is intended to, (Moule *et al*., 2017:412) like specific variables. For this study, the research instruments refer to the PONS which was used to measure nursing presence practiced by registered nurses and the MARS which was used to measure MHCUs self-reported medication adherence. Reliability of both data collection instruments was calculated through Cronbach's alpha coefficient, which is the test used to establish internal consistency (Grove *et al.*, 2013:391). According to Terre Blanche *et al.* (2014:154), Cronbach's alpha coefficient is a number that ranges from 0 (no internal consistency) to 1 (maximum internal consistency). A Cronbach's alpha coefficient score of 0.8 and higher was seen as acceptable in this study (Grove *et al.*, 2013:377, 391).

The MARS instrument was initially tested on 66 participants with different psychiatric diagnoses (Thompson *et al.*, 2000:242). For MARS, reliability was tested using a measure of internal consistency (Cronbach's alpha) and it was 0.75 (Thompson *et al.*, 2000:243). The developers of the MARS instrument tested test-retest reliability to examine the stability of MARS over time and this test was done after a 2-week interval and the goodness of fit was 0.72 for the instrument (Thompson *et al.*, 2000:244). The reliability of the MARS was tested again in sub-Saharan African settings (Nigeria) and measured a score of 0.76, which indicated good internal consistency thus reliability (Owie *et al*., 2018:85).

For the PONS, internal consistency reliability was calculated using Cronbach's alpha and it measured 0.95, which was an indication that the PONS possesses a high level of internal consistency reliability (Kostovich, 2012:171,172). Test-retest reliability was used to examine the stability of the PONS over time and during this process, all patients remaining in a hospital 4 days after completing the PONS were again approached to retake the survey (Kostovich, 2012:172). Scores on the two administrations of the PONS were compared using the Spearman's Rho

correlation coefficient to determine the relationship between scores on the first administration of the PONS and scores on the second administration of the PONS (Kostovich, 2012:172). Results indicated a correlation coefficient of 0.729, supporting a positive relationship between the two separate administrations of the PONS, and thus, stability over time (Kostovich, 2012:172).

3.8 Ethical considerations

For the study to be deemed ethical, an application was submitted to the HREC for approval. The study was approved by the HREC after minor revisions were made, with approval reference number as NWU-00053-18-A1 (see Annexure M). Permission to conduct the study was obtained from the Gauteng Department of Health and the Health District in which the study was conducted, with approval reference number as REF: NRHD GP 201810_061 (see Annexures K). Goodwill permission from each clinic manager was requested in writing through completion of a form in that regard (see Annexure L). The ethical aspects of this research were discussed in Chapter 1 and adhered to in line with the ethical principles, norms and standards as indicated by the Department of Health of the Republic of South Africa (2015:14-17). For this study, the researcher also paid a great deal of consideration to the following principles: principles of beneficence, non-maleficence, equality and respect for persons, which were encompassed within the norms and standards discussed in detail in Chapter 1 (1.12.1 to 1.12.12).

3.9 Summary of the chapter

The chapter dealt with the research methodology chosen for measuring the relationship between MHCUs self-reported medication adherence and the nursing presence of registered nurses in PHC clinics within an urban health district in Gauteng. The research onion that has been discussed helped to identify different levels of the research methodology and provided a guide to the researcher in discussing the methodology used in this study. The appropriate research philosophy, approach to theory development, methodological choice, research strategies and study context regarding the present research were explained. The study's data collection process and data analysis were also discussed in this chapter. The chapter also discusses the rigour to ensure validity and reliability of the instruments used in the study. A discussion of the analysis and results of the study is found in chapter 4.

CHAPTER 4: RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter presents the results of the data analysis and interprets the data collected in this study. An overview of the statistical analysis is provided, and the findings of the study with regard to participants' demographics, description of the variables (medication adherence and nursing presence) and lastly the relationship between these variables, are examined. Data analysis refers to a process through which a researcher manages the collected data to identify key patterns that are important when attempting to answer research questions (Moule *et al*., 2017:345).

4.2 Statistical analysis

Descriptive statistics were used to analyse the demographic data of the participants and their responses to both questionnaires using the frequency distribution, percentages, mean and SD. The relationship between the study variables (nursing presence of registered nurses and self-reported medication adherence of MHCUs) was determined by calculating correlational coefficients (r), t-tests and ANOVA. Both study variables were further measured on a nominal scale, using the correlation coefficient where the magnitude and direction of the association between the two (2) variables would be identified (Brink *et al*., 2012:188). To strengthen the rigour of the study, a statistician was consulted during data analysis. The statistics and how it was applied in the study is discussed in the following paragraphs.

Firstly, frequency distributions included the values of continuous variables. With a continuous variable, the higher numbers represent more of that variable, and the lower numbers represent less of that variable (Grove *et al*., 2013:550). Percentage represents a certain portion of the total group, expressed as the number of parts per 100 (Brink *et al*., 2012:206). In this study, frequency distribution was used, for example, to describe the number of MHCUs that completed the MARS and PONS questionnaire.

The mean is used as an indicator for central tendency and refers to the arithmetic average of all of the values of a variable in a study. It is the most commonly reported measure of central tendency. The calculation is the sum of the scores divided by the number of scores being summed (Grove *et al*., 2013:553). In this study, the mean indicated the average choice of responses by participants on study variables.

SD is the most widely used variability index. Like the mean, the SD is calculated based on every value in a distribution. The SD summarizes the average amount of deviation of values from the

mean (Polit & Beck, 2010:397). For the purpose of this study, the SD means how close the participants' choice of responses are to the average or mean value.

The correlation coefficient summarizes how "perfect" a relationship between study variables is by describing the intensity and direction of a relationship. It is used to determine the magnitude and direction of the relationship between two variables (Polit & Beck, 2010:71). The relationship can be either positive or negative. The correlation coefficient values range from -1.00 through 0.00 to +1.00. Negative values indicate an inverse relationship between the variables, while positive values indicate that the variables increase or decrease together. When two (2) variables are unrelated, the correlation coefficient is zero. The most commonly used correlation index is the product–moment correlation coefficient (also referred to as Pearson's r), which is computed with interval or ratio measures (Polit & Beck, 2010:400-401). The correlation coefficient was thus of specific importance in this study to show the relationship between self-reported medication adherence and nursing presence.

ANOVA is used to test mean group differences of three (3) or more groups. ANOVA decomposes the variability of a dependent variable into two components: variability attributable to the independent variable (e.g., group status) and variability due to all other sources (e.g., individual differences, measurement error). Variation between groups is contrasted with variation within groups to yield an F-ratio statistic (Polit & Beck, 2010:415). In this case, ANOVA was used to measure the relationship between means of three or more independent study groups.

The Cronbach's alpha coefficient is used to measure the reliability of items used in a questionnaire. This measure is indicative of the extent to which all the items measure the same characteristics. The normal values for the Cronbach's alpha coefficient are between 0.00 and 1.00 (Polit & Beck, 2010:354). According to Burns and Grove (2009:377), a Cronbach's alpha coefficient value of 0.80 is considered acceptable. Cronbach's alpha was used to indicate the reliability of the two instruments (MARS & PONS) used in this research.

4.3 Reliability of data collection instruments

Reliability measures the extent to which the instruments provide consistent results. An instrument is considered reliable if the same results are obtained repeatedly. In determining this, the researcher used factor analysis for the MARS and the Cronbach alpha coefficients (α) that are based on the mean inter-item correlations to tests the internal consistency of both the MARS and PONS questionnaires (Botma *et al.,* 2010:177). According to Burns and Grove (2009:377), a reliability value of 0.80 and above is recommended if an instrument is to be considered internally consistent in collecting the required data.

4.3.1 Factor analysis

Confirmatory factor analysis (CFA) was done with the MARS to prove if the pre-existing factors (Weis & Schank, 2017:400) were still applicable to this study. This study confirmed a pre-existing 3-factor structure for the MARS instrument developed by Thompson *et al*. (2000:344), and these factors were medication adherence behaviour (factor 1), attitude of patients, in this case MHCUs to taking medication (factor 2) and negative side-effects, and attitudes to psychotropic medication (factor 3). Using the three (3) factors of the MARS questionnaire, the principal axis factoring method was used to extract factor/s and the Oblimin with Kaiser Normalization rotation method was used to transform the factor/s for interpretation. The Kaiser–Meyer–Olkin (KMO) measure was also used to measure sampling adequacy. According to Weis and Schank (2017:405), Kaiser– Meyer–Olkin values >0.8 are highly indicative of an adequate sample size. The KMO for this study was 0.857, indicating that the sample of 180 MHCUs was adequate.

4.3.2 Reliability of questionnaire using the Cronbach alpha coefficient

The reliability measurement of the data collection questionnaire was further done using the Cronbach alpha coefficient considering the three (3) confirmed MARS factors, MARS in total and PONS. Five (5) reliability tests were computed as given in the following Table 4-1.

Table 4-1: Reliability of the PONS and MARS questionnaire

	Cronbach's alpha	**Mean inter-item correlation**	**N of items**
Medication adherence behaviours (Factor 1 of MARS)	0.750	0.420	4
Attitudes of MHCUs towards the medication (Factor 2 of MARS)	0.746	0.422	4
Side effects (Factor 3 of MARS)	0.337	0.205	2
MARS-total	0.871	0.400	10
PONS	0.983	0.702	25

Based on the above table, it is clear that Cronbach's alpha coefficient for side effects (factor 3 of the MARS) was very low, which according to Grove *et al*. (2013: 391) could be due to the low number of items forming the factor. Grove *et al*. (2013:391) further elaborate by stating that scales with more items usually have stronger internal consistency coefficients than scales with less items, which is the case with the “side effects” factor with only two items. The other four (4) variables in the questionnaire attained a high degree of internal consistency since their reliability

values were above 0.70. Grove *et al*. (2013:377) recommend a reliability value of 0.80 and above if an instrument/factor is to be considered internally consistent in collecting the required data. This reliability coefficient is essentially the mean of the inter-item correlations (Grove *et al.*, 2013:391). This implies that the questionnaire was highly reliable and internally consistent based on the overall Cronbach alpha coefficient of the MARS total being 0.87 and PONS 0.98.

Based on the these findings, the researcher decided to use the MARS instrument in total due to one factor (3) having a very low Cronbach's alpha coefficient. The MARS total Cronbach's alpha coefficient (0.871) indicated that it is more internally consistent as a whole than the three (3) factors separately. Considering this decision, exploratory factor analysis (EFA) was used to analyse data produced by the MARS questionnaire to explore the underlying single dimensionality of a set of items (Polit & Beck, 2010:753), with the intention of determining the reliability of the questionnaire as a single total variable. The Bartlett's test of sphericity was used to check if the ten MARS items are sufficiently correlated, and a significance of $p<0.001$ showed correlations that were sufficiently high. See Table 4-2 for the reliability of the MARS in total.

Table 4-2: Exploratory Factor Analysis of the MARS in total

MARS	**Eigenvalues**			
	Kaiser–Meyer–Olkin (KMO)	**Bartlett's p-value**	**% of Variance**	**Cumulative %**
C1	-	-	46.890	46.890
C2	-	-	10.673	57.563
C3	-	-	9.834	67.397
C4	-	-	7.698	75.095
C5	-	-	6.209	81.304
C6	-	-	5.614	86.918
C7	-	-	4.480	91.398
C8	-	-	4.122	95.520
C9	-	-	2.623	98.143
C10	0.857	p< 0.001	1.857	100.000

As the number of factors increases, the eigenvalue also increases. The cumulative percentage was **46.890%**, and it increased to **100.00%** in the tenth item, indicating a high correlation with one factor.

4.4 Findings

The findings of the study are presented by first discussing the demographic profile of the participants, followed by the findings on the self-reported medication adherence of MHCUs; findings on the nursing presence of registered nurses as perceived by MHCUs; then variations in Question 27 of the PONS (Q27), Question 28 of the PONS (Q28), PONS and MARS in relation to the MHCUs demographic data; and finally the relationship between MARS and PONS.

4.4.1 Demographic profile of the participants

All participants had psychiatric diagnoses for which they were taking medication. The diagnoses were as follows: mood disorders = (58.9%, n=106); psychotic disorders = (31.1%, n=56); substance-related disorders = (5%, n=9) and other psychiatric disorders = (2.8%, n=5). Four (2.2%) participants gave medical diagnoses (Epilepsy, HIV and Head injury) but it was confirmed by the mediators in respective clinics that they had psychiatric disorder diagnoses related to the medical conditions they had completed in their questionnaires.

The demographic data of the main study were analysed using descriptive statistics; hence, the findings were grouped together with the highest frequency distribution and percentage reported for the highly rated data. The demographic data of the MHCUs were extracted from Section A of the PONS questionnaire. Only demographic data that was applicable to this study were analysed. The following demographic data are discussed: gender of MHCUs, their age, their level of education, race and marital status of MHCUs.

Table 4-3: Descriptive statistics of the demographic data

		Frequency	Percent
Gender	Male	91	50.8%
	Female	88	49.2%
Age	Below 30 years	30	16.7%
	30–40 years	45	25.0%
	41–50 years	38	21.1%
	51–60 years	43	23.9%
	Above 60 years	24	13.3%
Highest level of education	Primary school	61	33.9%
	High school	99	55.0%
	College	17	9.4%
	University	3	1.7%
Race	Black	139	77.2%
	White	24	13.3%

		Frequency	Percent
	Coloured	12	6.7%
	Other	5	2.8%
Marital status	Single	119	66.1%
	Married	49	27.2%
	Divorced	12	6.7%

From the demographic profile of the participants depicted in Table 4-3, findings show that from a sample of 180 MHCUs, there was little difference in the number of males and females, with each represented by 91(50.8%) and 88 (49.2%) participants respectively.

Looking to age, the MHCUs were mainly in the age bracket 30–60 years. According to the descriptive statistics, individuals aged 30–40 years are the major users of MHC services, constituting a quarter, 45 (25%) of the entire sample. These are closely followed by individuals aged 51–60 and 41–50 years, represented by 43 (23.9%) and 38 (21.1%) respectively. Participants in the extreme lower and upper categories were the minority and these were each represented by 30 (16.7%) and 24 (13.3%) MHCUs respectively. Overall, the average age of the participants was 44±14.3 years, the minimum being 19 while the maximum was 77 years.

In terms of highest level of academic attainment, the results show that more than a half (n=95; 55%) of MHCUs are men and women whose highest level of education was high school. Slightly above a quarter (n=61; 33.9%) were MHCUs whose level of academic attainment did not go beyond primary level. As will be seen in the subsequent results of the bivariate analysis, level of education was concluded to be one of the factors that influences MHCUs' experience of nursing presence of registered nurses at PHC clinics and also, their adherence to medication. This assertion is in recognition of various empirical studies that have linked a host of demographic profiles to health outcomes (Gonzalez-Zacarias *et al*., 2016:195).

In relation to marital status, the majority of the participations were single (n=119; 66.1%), while the married ones comprised a total of 49 (23.2%) participants. The smallest percentage of 6.7% (n=12) were divorced MHCUs. Although beyond the scope of this study, it is not clear why the majority of the participants in the sample were single, given the fact that more than 100 of them, were aged 41 years and above, the period when a person is expected to be married, more so in most of the African settings. This could be because of the participants' mental illnesses and the challenges these bring to relationships. Blacks constituted the largest number of participants with a total of 139 (77.2%). Minority of the participants were either whites (n=24; 13.3%), coloured (n=12; 6.7%) or other races (n=5; 2.8%)

4.4.2 Description of variables in this study

The study variables, MHCUs self-reported medication adherence and the nursing presence of registered nurses as perceived by MHCUs are statistically described by looking at their frequency distribution, percentages, mean scores and SDs. Furthermore, MHCUs level of adherence and the level of nursing presence among registered nurses they perceived are described.

4.4.2.1 Mental healthcare users' self-reported medication adherence (n=179)

From the total number of the 180 sample, one participant did not complete the MARS questionnaire and thus the findings were reported based on the 179 participants only. Adherence to medication was hypothesized to have a relationship with the nursing presence of registered nurses. The idea was that nursing presence in the provision of care and other services would increase the likelihood of MHCUs' adherence to medication. Thus, an already existing questionnaire (MARS) with a two (2) point scale with either "yes" or "no" responses was used to determine self-reported medication adherence of MHCUs. The results are discussed by reporting on the descriptive statistics of responses from MHCUs on the MARS per item and MHCUs level of self-reported medication adherence using their total scores on the MARS.

4.4.2.1.1 Responses of MHCUs on Medication Adherence Rating Scale per item

The responses of MHCUs to the items of the MARS questionnaire were based on Yes and No type of responses. According to the scale, MHCUs that respond "NO" to questions 1–6 and 9–10 and "YES" to questions 7–8 are adherent to the medication (Johnson *et al*., 2016:699). For items 7 and 8, the responses were thus reverse scored so that "'YES" responses to the original question attracted a score of 1 while "NO" responses attracted a score of zero. This was done so that they could later be combined with other items on MARS to form a summated scale (Jozsa & Morgan, 2017:8). Table 4-4 presents the descriptive statistics pertaining to the Yes and No responses of MHCUs on the MARS questionnaire.

Table 4-4: Responses of MHCUs on Medication Adherence Rating Scale

Item		YES		NO		Mean	SD
1	Do you ever forget to take your medication?	41	22.9%	138	77.1%	.77	.421
2	Are you careless at times about taking your medication?	71	39.7%	108	60.3%	.60	.491
3	When you feel better, do you sometimes stop taking your medication?	66	36.9%	113	63.1%	.63	.484
4	Sometimes if you feel worse when you take the medication, do you stop taking it?	100	55.9%	79	44.1%	.44	.498
5	I take my medication only when I am sick	25	14.0%	154	86.0%	.86	.348
6	It is unnatural for my mind and body to be controlled by medication	118	65.9%	61	34.1%	.34	.475
7	My thoughts are clearer on medication (REVERSED)	49	27.4%	130	72.6%	.73	.447
8	By staying on medication, I can prevent getting sick. (REVERSED)	45	25.1%	134	74.9%	.75	.435
9	I feel weird, like a “zombie” on medication	41	22.9%	138	77.1%	.77	.421
10	Medication makes me feel tired and sluggish	80	44.7%	99	55.3%	.55	.499
	Overall mean					0.85	0.49

The statistics given in Table 4-4 show MHCUs’ responses per item to the MARS questionnaire. Their responses are descriptively presented using frequency counts, percentages, means and SDs. There are four items (item 4, 6, 7, 8) in which the MHCUs responses indicated areas of concern regarding medication adherence. These four items are, in order of strength: close to three quarters of the 179 MHCUs reported that staying on medication did not prevent them from getting sick (74.9%); a total of 130 (72.6%) MHCUs reported that their thoughts are not clear on medication; 118 (65.9%) felt it was unnatural for their mind and body to be controlled by medication, and 100 (55.9%) of the 179 MHCUs reported stopping their medication when they felt worse on it.

In the order of strength, the items in which self-reported medication adherence scored high were taking medication not only when they were sick (86.0%), not forgetting to take medication (77.1%), not stopping to take medication even if one felt better (63.1%) and lastly MHCUs reporting not

being careless at times about taking their medication (60.3%). For items 9 and 10 of the MARS, majority of MHCUs responded with a 'no', which indicated adherence regarding those items.

4.4.2.1.2 MHCUs' level of self-reported medication adherence

Total scores on the MARS ranged between 0 and 10, with a higher score indicating better medication adherence (Owie *et al.*, 2018:87). A sum of all item scores was obtained for each participant to determine the MHCUs' level of self-reported medication adherence. For this study, a score range of 0–3 indicated non-adherence, a score range of 4–6 was partial adherence and a score range of 7–10 indicate that the MHCU has good adherence to the medication (Johnson *et al*., 2016:699). Table 4-5 and Figure 4.1 present the frequency distribution of MHCUs' total MARS scores, thus their level of self-reported medication adherence.

Table 4-5: Frequency distribution of MHCUs' total MARS scores (level of self-reported adherence)

		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid total MARS score	.00	5	2.8	2.8	2.8
	1.00	11	6.1	6.1	8.9
	2.00	10	5.6	5.6	14.5
	3.00	12	6.7	6.7	21.2
	4.00	13	7.2	7.3	28.5
	5.00	13	7.2	7.3	35.8
	6.00	19	10.6	10.6	46.4
	7.00	16	8.9	8.9	55.3
	8.00	21	11.7	11.7	67.0
	9.00	14	7.8	7.8	74.9
	10.00	45	25.0	25.1	100.0
	Total	179	99.4	100.0	
Missing	System	1	0.6		
Total		180	100.0		

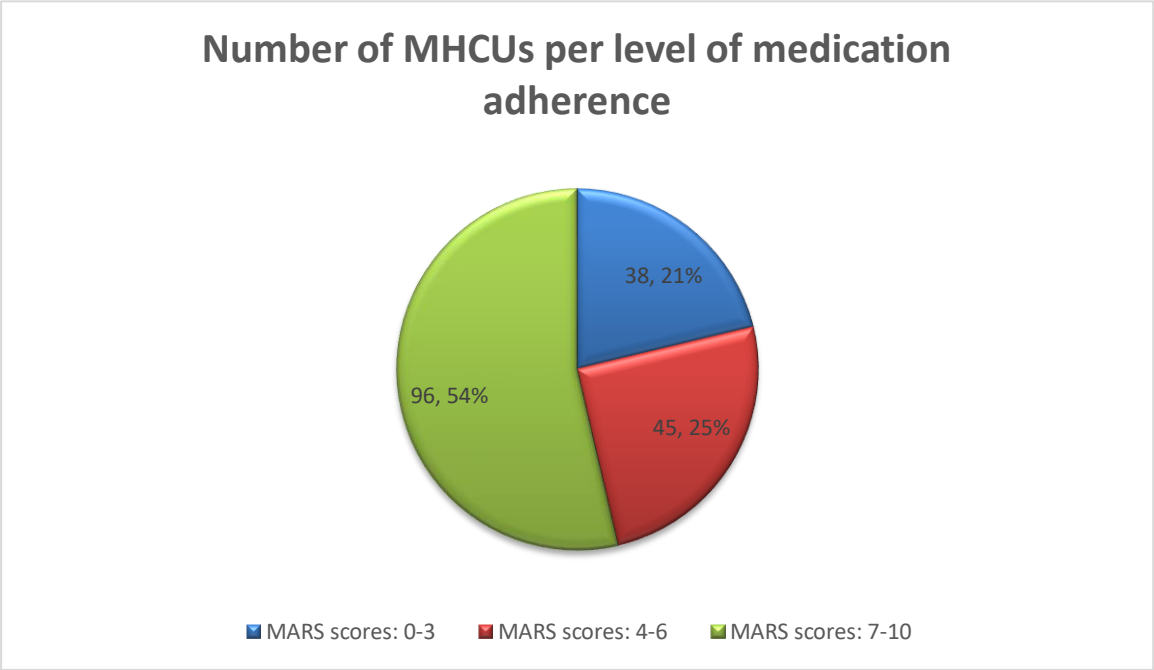

Figure 4-1: Frequency of MHCUs per total MARS score range (level of self-reported adherence)

Of the 179 participants, 38 (21.2%) reported low adherence (score of 0–3), 45 (25.2%) reported partial adherence (score of 4–6), and 96 (53.6%) reported good adherence (score of 7-10) to their medication. From the findings, it is clear that out of the 179 MHCUs, just over 50% of the MHCUs reported adherence to their medication. These findings are concerning as it has been noted in Chapter 2 that medication adherence is very important in the management of mental disorders. The minimum and maximum total score for this sample was 00 and 10 respectively, with the average score 6.45±3.09. The researcher can conclude that the overall adherence level of MHCUs at PHC in an urban health district is partially adherent. This findings are close to the findings by Chaudhari *et al*. (2017:215) which concluded low adherence of MHCUs by reporting that only 48% of their sample was adherent to medication.

4.4.2.2 Nursing presence of registered nurses

Describing the MHCUs perception of the nursing presence of registered nurses at PHC clinics in an urban health district was one of the key objectives for which purpose responses were sought from MHCUs using the PONS questionnaire. The first question on the PONS that participants had to respond to was to initially determine the existence of nursing presence by responding to whether the presence of RNs at PHC clinics made a difference in their lives. The difference could either be positive or negative. However, the researcher thinks it is imperative to indicate that the MHCUs did not understand in full the term “presence” as defined in Chapter 1 and 2. Their interpretation of the question most likely leaned towards the physical presence or the fact that the

registered nurses exist/serve them at the clinic, not necessarily the caring behaviour of the registered nurses. Nevertheless, the remaining questions (questions 2–28) provided insight into their perception of the presence of nurses (see discussions further on). Figure 4-2 below shows feedback from MHCUs with regard to question 1 of the PONS questionnaire.

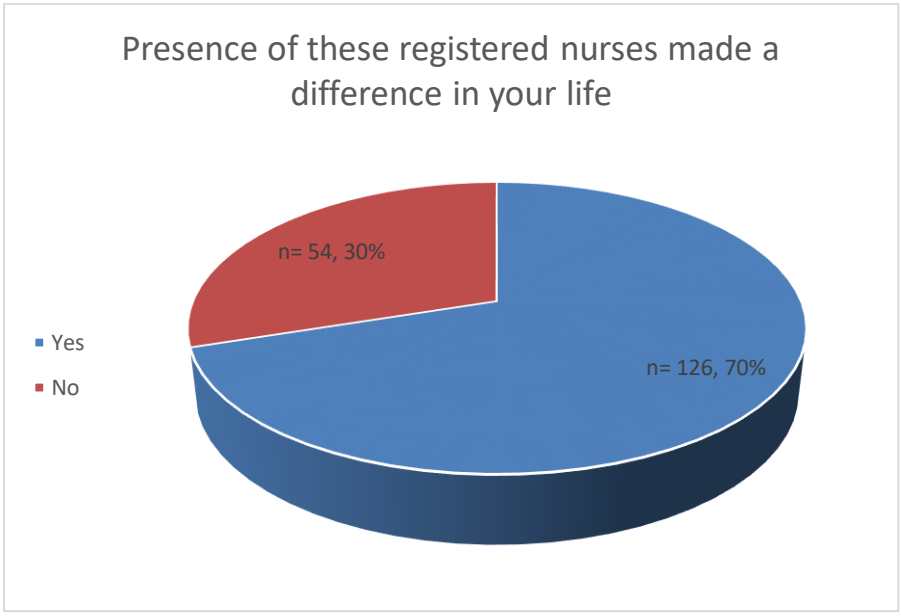

Figure 4-2: Whether presence of registered nurses made a difference in the lives of MHCUs

The evidence in Figure 4-2 shows that nearly a third of the MHCUs (n=54, 30%) felt that the presence of registered nurses at PHC clinics did not make either a positive or a negative difference in their lives. The majority (n=126, 70.0%) felt that the presence of registered made a difference in their lives and thus answered “Yes” on the question of whether the presence of registered nurses in PHC clinics in the urban health districts made a positive or negative difference in their lives. The different attributes of nursing presence, as represented in items 2–26 in the PONS instrument, which according to MHCUs resulted in either positive or negative difference, are summarized to indicate how often the registered nurses demonstrated these attributes as perceived by MHCUs using frequency counts, percentages, means and SDs as illustrated in Table 4-6.

Table 4-6: Responses of MHCUs on the PONS per item (n=126)

ITEM	These registered nurses:	Never		Rarely		Occasionally		Frequently		Always		Mean	SD
2	were open to my concerns.	1	0.8%	21	16.7%	63	50.0%	41	32.5%	0	0.0%	3.1	0.7
3	taught me what I needed to know.	2	1.6%	22	17.5%	68	54.0%	34	27.0%	0	0.0%	3.1	0.7
4	“checked” on me.	4	3.2%	65	51.6%	43	34.1%	14	11.1%	0	0.0%	2.5	0.7
5	met my spiritual needs.	57	45.6%	63	50.4%	2	1.6%	3	2.4%	0	0.0%	1.6	0.6
6	talked to me as a friend.	1	0.8%	22	17.5%	73	57.9%	30	23.8%	0	0.0%	3.0	0.7
7	physically comforted me.	1	0.8%	40	31.7%	64	50.8%	21	16.7%	0	0.0%	2.8	0.7
8	emotionally comforted me.	1	0.8%	11	8.7%	67	53.2%	47	37.3%	0	0.0%	3.3	0.7
9	understood my feelings.	1	0.8%	35	27.8%	69	54.8%	20	15.9%	1	0.8%	2.9	0.7
10	earned my trust.	1	0.8%	21	16.7%	60	47.6%	43	34.1%	1	0.8%	3.2	0.7
11	were skilled in providing my care.	1	0.8%	10	7.9%	60	47.6%	49	38.9%	6	4.8%	3.4	0.7
12	were there if I needed them.	3	2.4%	49	38.9%	59	46.8%	14	11.1%	1	0.8%	2.7	0.7
13	helped my day run smoothly.	1	0.8%	24	19.0%	75	59.5%	26	20.6%	0	0.0%	3.0	0.7
14	created a sense of healing around me.	1	0.8%	16	12.7%	75	59.5%	31	24.6%	3	2.4%	3.2	0.7
15	listened and responded to my needs.	3	2.4%	33	26.2%	73	57.9%	17	13.5%	0	0.0%	2.8	0.7
16	calmed my fears.	2	1.6%	32	25.4%	67	53.2%	24	19.0%	1	0.8%	2.9	0.7

ITEM	These registered nurses:	Never		Rarely		Occasionally		Frequently		Always		Mean	SD
17	were concerned about me.	3	2.4%	43	34.1%	60	47.6%	20	15.9%	0	0.0%	2.8	0.7
18	were committed to care for me.	1	0.8%	14	11.1%	74	58.7%	36	28.6%	1	0.8%	3.2	0.7
19	made me feel safe.	2	1.6%	18	14.3%	72	57.1%	32	25.4%	2	1.6%	3.1	0.7
20	made me feel at peace.	2	1.6%	26	20.6%	65	51.6%	31	24.6%	2	1.6%	3.0	0.8
21	took care of me as a person, not as a disease.	4	3.2%	25	19.8%	48	38.1%	35	27.8%	14	11.1%	3.2	1.0
22	gave me as much control over my healthcare as possible.	36	28.6%	83	65.9%	5	4.0%	2	1.6%	0	0.0%	1.8	0.6
23	made the quality of my life better.	2	1.6%	19	15.1%	72	57.1%	31	24.6%	2	1.6%	3.1	0.7
24	I had confidence in these.	1	0.8%	18	14.3%	67	53.2%	33	26.2%	7	5.6%	3.2	0.8
25	Felt a connection between myself and them.	10	7.9%	42	33.3%	56	44.4%	18	14.3%	0	0.0%	2.7	0.8
26	Their presence made a difference to me:	4	3.2%	19	15.1%	63	50.0%	38	30.2%	2	1.6%	3.1	0.8
	Overall mean											2.91	0.72

From the list of attributes on the PONS indicating perceived nursing presence as experienced by MHCUs from the registered nurses, most of the responses or choices on how often the attributes were experienced by MHCUs were mainly bundled around three (3) options: occasionally, rarely and frequently, the major option being occasionally. From the MHCUs responses, very few picked the extreme options of never or always. Nonetheless, a point to note though is that with regard to caring for the spiritual needs, and giving MHCUs control over their healthcare as much as possible, registered nurses' presence was never or rarely felt. This was emphasized by n=57 (45.6%) and n=36 (28.6%) of the 126 MHCUs who chose the option of "never" in the two (2) questions respectively; 63 (50.4%) and 83 (65.9%) MHCUs respectively perceiving experience of the same attributes only rarely. The two (2) attributes had the lowest mean values (1.6±0.6 and 1.8±0.6) of all items on the PONS, which explains that the majority of MHCUs responses on the two items were spread below the average score of 2.9±0.72.

In those areas where the majority of the responses were concentrated, namely being open to the concerns of MHCUs, teaching them what they needed to know, talking to them as friends, being emotionally comforting, understanding the feelings of MHCUs, were attributes of nursing presence that were occasionally demonstrated by registered nurses and experienced by MHCUs, thus making a difference in their lives. The findings further show that registered nurses were generally helpful in enabling MHCUs' days run smoothly, although this was also demonstrated on an occasional basis. Creation of a sense of healing among MHCUs was also observed as a factor that was exercised occasionally by the nurses and thus contributed to making a difference in the lives of nearly three quarters of MHCUs.

Having good listening skills plays a fairly important role in the way MHCUs perceive the presence of registered nurses. This is in view of the findings were 57.9% MHCUs reported that the registered nurses listened and responded to their needs. Additionally, ability and readiness to calm the fears of MHCUs also earned registered nurses a mark in the quest to practice nursing presence. In the analysis, more than 50% of MHCUs felt that the registered nurses occasionally demonstrated this attribute. Besides this, the majority of the registered nurses also occasionally showed commitment, made MHCUs feel safe and at peace. These skills were occasionally demonstrated by the nurses and were indeed significantly important in making the quality of MHCUs' lives better. This perhaps explains why a fairly large percentage (53.2%) of the MHCUs had confidence in the registered nurses to the extent that their presence occasionally made a difference to half of their clients. For all the above-mentioned attributes indicating nursing presence, the percentage of MHCUs who chose the occasionally response was 50% and above.

Some, however, felt that the above attributes were displayed frequently by the registered nurses. Notable among these were being open to the concerns of MHCUs (32.5%), teaching them what

they needed to know (27%), being emotionally comforting (37.3%) and earning their trust (34.1%). In addition, registered nurses frequently exhibited skills in providing care to the MHCUs and showing commitment (28.6%), including taking care of MHCUs as individuals not as a disease (27.8%) or their presence making a frequent difference to 30.2% (n=38) of the 126 MHCUs.

The overall response for all the items showed a mean of 2.91, which translates to 3.0 on a 5-point Likert scale. This means that most of the MHCUs were of the opinion that registered nurses occasionally demonstrated attributes of nursing presence to MHCUs at PHC clinics in an urban health district.

4.4.2.2.1 Level of nursing presence

To obtain an overall indicator of the perceived level of nursing presence experienced by MHCUs, the PONS Likert responses for the 25 items were summed up and a single composite index that ranged from 25–125 (Kostovich, 2012:171). The higher scores implied a higher level of perceived nursing presence experienced by patients, in this case MHCUs from registered nurses (Kostovich, 2012:171). The final score was thus treated as continuous and was called PONS. Kostovich (2012:172) furthermore indicates that there is no cut-off number to interpret the scores on different levels of nursing presence.

The researcher thus interpreted the scores using score ranges as indicated below and highlights that, the score ranges are presented to indicate the level of perceived nursing presence experienced by MHCUs from registered nurses. The score ranges are depicted as such that they indicate the level of perceived nursing presence from the lowest level to the highest level. The number of MHCUs per score ranges are as illustrated in Table 4-7 and Figure 4-3 below:

Table 4-7: Frequency of MHCUs in total score ranges of the PONS (n=126)

		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid total PONS score range	25-50	13	10.3	10.3	10.3
	51-75	62	49.2	49.2	59.5
	76-100	47	37.3	37.3	96.8
	101-125	04	3.2	3.2	100.0
	Total	126	100.0	100.0	
Total		126	100.0		

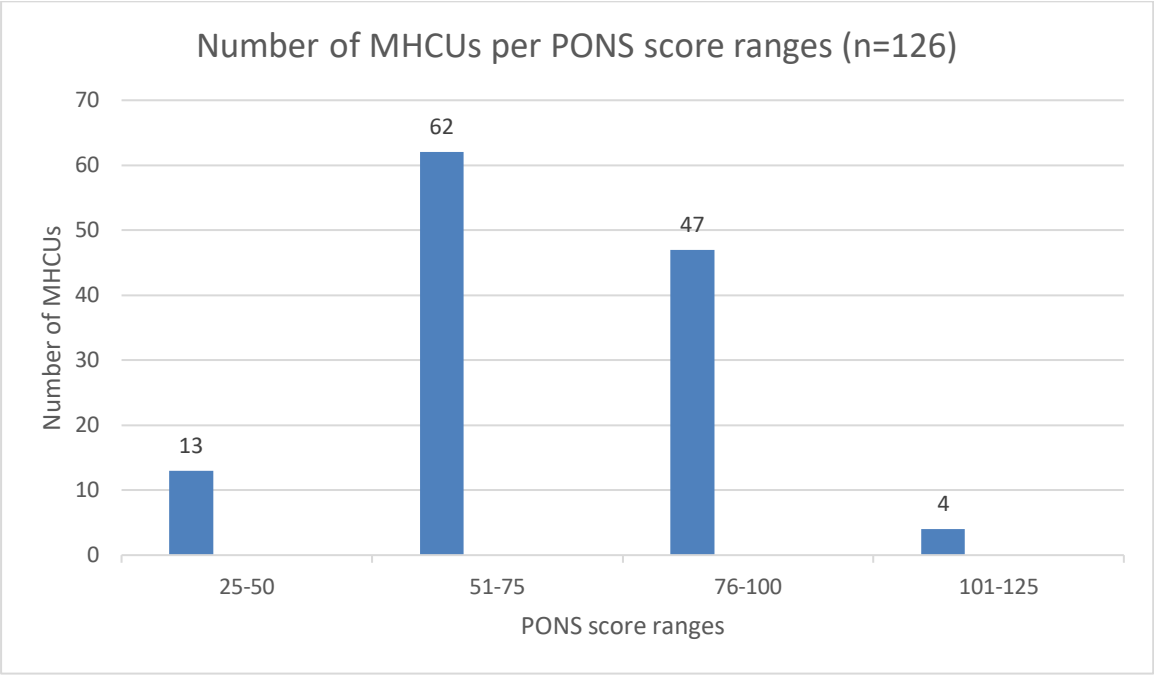

Figure 4-3: Frequency distribution of MHCUs in total PONS score in ranges

From the list of score ranges in Table 4-7 and Figure 4-3 indicating total scores per participant on the PONS, we can conclude that a total number of 75 MHCUs (59.5%) from the first two score ranges (25–50 & 51–75) had lower levels of perceived nursing presence experienced from registered nurses at PHC, with the 25–50 range being the lowest level of the two (2) ranges. The other 51 MHCUs (39.5%) distributed among the last two score ranges (76–100 & 101–125) had experienced high levels of perceived nursing presence from the registered nurses at PHC, with the 101–125 range representing the highest level of perceived nursing presence. As much as the total number of MHCUs in the score ranges indicated high levels of perceived nursing presence n=51, it is worrying that only n=4 of the n=51 MHCUs were in the 101–125 score range. Ideally one would prefer MHCUs to fall in this score range as it is the highest level of perceived nursing presence demonstrated by registered nurses. The minimum and maximum total score for this sample was 25 and 105 respectively, with the average score 72.2±15.3. The average score means that, for this sample, their perceived level of nursing presence demonstrated by registered nurses is low, as it falls within the score range of 50–75. The findings in the study by Kostovich (2012:171) revealed that the participants in his study reported their perceived level of nursing presence demonstrated by as high. This finding was evidenced by an average score of 105,8, which according to this study's score ranges falls within the 101–125 range, thus interpreted as a high level of perceived nursing presence.

4.4.2.2.2 Satisfaction of MHCUs with care provided by registered nurses

To determine the MHCUs satisfaction with the care provided by the registered nurses, questions 1, 27 and 28 were considered. To determine to what extent the MHCUs were satisfied with the care provided, follow-up questions on satisfaction were asked. The MHCUs who replied in the affirmative to question 1, totalling to n=126 (70.0%), continued to answer a series of 25 items (Question 2 to Question 26), which then led them to question 27, where they had to answer a follow-up question on how satisfied they were with the care provided by the registered nurses and whether they felt it made a difference in their lives. The MHCUs who replied 'No', namely that the registered nurses' presence did not make a difference in their lives, continued to only complete question 28, also to report on how satisfied they were with the care provided by all of the registered nurses at PHC. Table 4-8 presents the results for items 27 and 28.

Table 4-8: Satisfaction of MHCUs with the care provided by the registered nurses

Item		Very Dissatisfied		Dissatisfied		Neither Satisfied nor Dissatisfied		Satisfied		Very Satisfied		Mean	SD
27	Overall satisfaction with the care provided by these registered nurses?	4	3.2%	19	15.1%	34	27.0%	68	54.0%	1	0.8%	3.34	.859
28	Overall satisfaction with the care provided by all of these registered nurses?	13	7.3%	38	21.5%	79	44.6%	47	26.6%	0	0.0%	2.90	.877
	Overall mean											3.12	0.87

The findings in Table 4-8 show that in the first row (Question 27) whose responses were for only those MHCUs who agreed that the presence of registered nurses made a difference in their lives, most of them (n=68, 54.0%) expressed satisfaction with the care provided by those registered nurses. This findings were the same as concluded in the study by Kostovich (2012:171) where 91% of the participants who stated that the registered nurses made a difference in their life, were either satisfied or very satisfied with their care. However, when participants who reported that the registered nurses' presence did not make a difference in their lives were combined with the participants who responded to question 27, the highest percentage of MHCUs (n=79, 44.6%) chose the "neither satisfied nor dissatisfied" option to describe their satisfaction with the care provided by all registered nurses. From this findings, the researcher hypothesizes that MHCUs who reported that the registered nurses' presence did not make a difference in their lives could be related to their dissatisfaction with the care provided by all registered nurses, hence the drop in the numbers of MHCUs who reported to be "satisfied" in question 28. Again, Kostovich (2012:171) reported similar results.

4.4.3 Relationship between mental healthcare users' medication adherence and the nursing presence of registered nurses at PHC clinics

Since one of the objectives of the study was to determine whether a relationship exists between MHCUs self-reported medication adherence and perceived nursing presence of registered nurses in PHC clinics, a correlation was run on the two indices (MARS & PONS) with the goal of establishing whether a significantly linear relationship exists between the two variables. A Pearson correlation coefficient was run to establish this relationship. The p-value represents the statistical significance of the variables, whereas the correlation coefficient represents the magnitude, direction, and strength of the relationship between the variables. But before delving into that, the researcher carried out t-tests and ANOVA to determine whether the differences on Question 27 (Q27), Question 28 (Q28) of the PONS, the PONS and the MARS as a whole were significantly influenced by the demographic profile of the MHCUs. The following Tables present summarized results of this empirical analysis.

The researcher is aware that with non-random samples, as with this study, according to Khalilzadeh and Tasci (2017:89), practical significance (effect sizes) are more appropriate than statistical significance as they measure significance in practice and independently from sample size. In this study, statistical significance is reported only for completeness of the statistic report, but great attention will be given to reporting on practical significance.

4.4.3.1 Mean variations in Q27, Q28, PONS and MARS by gender

The findings for questions 27 and 28, PONS and MARS were compared based on the gender of the participants.

Table 4-9: Mean variations in Q27, Q28, PONS and MARS by gender

GENDER		N	Mean	Std. Deviation	t-statistic	p-value	Effect size (d)
Q27	1 Male	63	3.41	0.80	1.003	0.318	0.2
	2 Female	62	3.26	0.92			
Q28	1 Male	89	2.98	0.80	1.129	0.260	0.2
	2 Female	87	2.83	0.95			
PONS	1 Male	63	72.81	13.88	0.024	0.981	0.00
	2 Female	62	72.74	16.92			
MARS_ Total	1 Male	91	6.44	3.04	-0.043	0.965	0.01
	2 Female	87	6.46	3.17			

For MHCUs' overall satisfaction with the care provided by registered nurses they perceived as making a difference in their lives, males and females had means of 3.41± 0.80 and 3.26± 0.92 respectively, with a p-value of 0.318, which was above the alpha level of significance (0.05). For MHCUs' overall satisfaction with the care provided by all the registered nurses at PHC, males and females had means of 2.98±0.80 and 2.83±0.95 respectively, with a p-value of 0.260 which also was above the alpha level of significance (0.05). This therefore means that the gender of MHCUs was not statistically significant in explaining variations in both their overall satisfaction with care provided by these and all registered nurses. With effect size, there is a small practically significant difference (d = 0.2) between males and females on their overall satisfaction with the care provided by these registered nurses and by all registered nurses at PHC**,** thus demonstrating that male MHCUs at PHC clinics in an urban health district are more likely to report overall satisfaction in practice with care provided by those registered nurses they felt made a difference in their lives (Q27) and all registered nurses (Q28).

The means depicted in Table 4.9 show that on average, both males and females have similar mean values for both PONS and MARS. For PONS, males had a mean of 72.81±13.88 while females' average was 72.74±16.92. For MARS, the means were 6.44±3.04 and 6.44±3.04 for males and females respectively. For PONS, the p-value for the t-statistic was 0.981, while that of MARS was 0.965, all of which were above the alpha level of significance 0.05. This therefore means that the gender of MHCUs was not statistically important in explaining the variations in

PONS and MARS for this study. In other words, the perceptions of males and females on PONS were the same, as also found in the study by Kostovich (2012:172). In the same line of interpretation, the level of MHCUs self-reported adherence to medication was not statistically different for the two genders. Similar findings were also concluded by a study by Owie *et al*. (2018:88), where they found no differences in mean MARS scores across gender (t=0.25, p=0.80). For both the PONS and MARS, there was no difference in effect sizes (d=0.00), which interprets as the means of both males and females in PONS and MARS being the same, thus no practical significance.

4.4.3.2 Influence of race on Q27, Q28, PONS and MARS

Correlations were done to determine whether race had an influence on the participants' satisfaction with the care provided by the registered nurses, and on the results of PONS and MARS.

Table 4-10: Influence of race on Q27, Q28, PONS and MARS

Race		N	Mean	Std. Deviation	F-test	p-value	Effect size (d)	
							1 with	2 with
Q27	1 Black	100	3.36	0.88	1.294	0.278		
	2 White	16	3.44	0.81			0.09	
	3 Coloured	8	2.88	0.64			0.55	0.69
	Total	124	3.34	0.86				
Q28	1 Black	137	2.99	0.82	4.026	0.020		
	2 White	24	2.71	1.00			0.28	
	3 Coloured	12	2.33	0.98			0.67	0.38
	Total	173	2.91	0.87				
PONS	1 Black	100	73.37	15.36	2.047	0.134		
	2 White	16	72.56	16.13			0.05	
	3 Coloured	8	62.13	7.77			0.73	0.65
	Total	124	72.54	15.25				
MARS_Total	1 Black	139	6.71	3.11	4.181	0.017		
	2 White	23	6.43	2.89			0.09	
	3 Coloured	12	4.08	2.11			0.85	0.81
	Total	174	6.49	3.08				

The results show no statistical significance related to race for the overall satisfaction of MHCUs with the care provided by the registered nurses they felt made a difference in their lives (p-value=0.278). However, the care provided by all registered nurses was statistically significant at 5% with the p-value of 0.020. There is no practically significant relationship for overall satisfaction with care provided by the registered nurses they felt made a difference in their lives between black and white (d=0.09) MHCUs, but for overall satisfaction with care provided by all registered nurses, there is a small practically significant relationship (d=0.28) between black and white MHCUs. For black and coloured MHCUs, there is a moderate practical significance (d=0.55) in the overall satisfaction with care provided by the registered nurses they felt made a difference in their lives and by all registered nurses (d=0.67). For practical significance between whites and coloured MHCUs, overall satisfaction with care provided by the registered nurses they felt made a different in their lives was moderate (d=0.69) and by all registered was small (0.38).

According to the results in Table 4.10, the findings show no statistical significance for race with regard to the results of the PONS scale. From the computed value of the F-statistic of 2.047, the corresponding p-value of 0.134 was above the alpha level of significance 0.05, which by implication suggests that all participants on average had similar perceptions with regard to PONS, regardless of their race. This finding is similar to Kostovich (2012:172) with the corresponding p-value of 0.095. For medication adherence, however, blacks were more likely to adhere to medication than the rest of the races, since they had the highest average (6.71±3.11). Coloured MHCUs were the least adherent to taking their medication with a mean of 4.08±2.11. From the computed value of the F-statistic of 4.181, the corresponding p-value was 0.017. There was no practical significance between black and white MHCUs on the PONS (d=0.05) and the MARS (d=0.09). As for the difference between blacks and coloureds, the practical significance was moderate (d=0.73) on the PONS and large (d=0.85) on the MARS. The same practically significant relationship between blacks and coloureds was also evident between white and coloured MHCUs on both the PONS and the MARS, with the (d) values of 0.65 and 0.81 respectively.

4.4.3.3 Influence of marital status on Q27, Q28, PONS and MARS

The marital status of the participants was correlated with their satisfaction with the care provided by the registered nurses (Q27 and Q28), and with the PONS and their self-reported medication adherence (MARS).

Table 4-11: Influence of marital status on Q27, Q28, PONS and MARS

		N	Mean	Std. Deviation	F-test	p-value	Effect size (d)	
							1 with	2 with
Q27	1 Single	81	3.33	0.87	0.012	0.988		
	2 Married	37	3.35	0.89			0.02	
	3 Divorced	8	3.38	0.74			0.05	0.03
	Total	126	3.34	0.86				
Q28	1 Single	117	2.90	0.87	0.076	0.926		
	2 Married	48	2.90	0.93			0.00	
	3 Divorced	12	3.00	0.74			0.12	0.11
	Total	177	2.90	0.88				
PONS	1 Single	81	72.60	14.32	0.072	0.930		
	2 Married	37	72.59	17.23			0.00	
	3 Divorced	8	74.75	18.17			0.12	0.12
	Total	126	72.74	15.35				
MARS_Total	1 Single	118	6.25	3.22	0.755	0.472		
	2 Married	49	6.88	2.67			0.20	
	3 Divorced	12	6.67	3.37			0.13	0.06
	Total	179	6.45	3.09				

The results in the above table show no statistical significance of marital status on the overall satisfaction of MHCUs with the care provided by the registered nurses they felt made a difference in their lives (p-value=0.988) and the care provided by all registered nurses (p-value=0.926). There is no practically significant relationship for overall satisfaction with care provided by these registered nurses between single and married (d=0.02) MHCUs and for overall satisfaction with care provided by all registered nurses (d=0.00) between single and divorced MHCUs. There was also no practically significant relationship for both satisfaction with these registered nurses (d=0.05) and all registered nurses (d=0.12). Between married and divorced MHCUs, there was no practical significance (d=0.03) in the overall satisfaction with care provided by these registered nurses and by all registered nurses (d=0.11).

From Table 4-11, findings show no statistical influence of marital status on both PONS and MARS. For the PONS, divorced MHCUs had a slightly higher mean 74.75±18.17 than the single and married ones at 72.90±14.32 and 72.59±17.23 respectively, though not to a statistically significant extent (0.936 > 0.05), which means MHCUs who are divorced had a higher probability to report a high level of perceived nursing presence experienced than the single and married ones. Turning to MARS, although no statistically significant findings were evident (0.472 > 0.05), the married and divorced MHCUs had a higher probability of adhering to their medication (mean = 6.88±2.67 & 6.67±3.37) compared to the single MHCUs (mean 6.25±3.22). Overall, marital status is not a factor that distinguishes who is most likely to adhere to their medication. The same findings indicating no association between marital status of MHCUs and medication adherence were found by a study by Tham *et al*. (2016:805). For the PONS, there was no evidence of a practically significant relationship between single and married MHCUs (d=0.00), single and divorced MHCUs (d=0.12), and between married and divorced MHCUs (d=0.12). For the MARS, there was a small practical significance (d=0.2) between single and married MHCUs, as for between single and divorced MHCUs and between married and divorced MHCUs, there was no practical significance with (d) values of 0.13 and 0.06 respectively.

4.4.3.4 Correlations between MHCUs' age, educational level, PONS, MARS, and satisfaction with care provided by the registered nurses (Q27 and Q28)

Correlations were drawn between the participants' age, educational level, the nursing presence (PONS), their self-reported medication adherence and their satisfaction with the care provided by the registered nurses.

Table 4-12: Correlations between MHCUs age, educational level, PONS, MARS, Q27 and Q28

			AGE	Education	PONS	MARS_Total	Q27	Q28
	PONS	Correlation Coefficient	.384**	-.260**	1.000	.694**	.864**	.843**
		Sig. (2-tailed)	0.000	0.003		0.000	0.000	0.000
		N	179	179	126	179	126	179
	MARS_Total	Correlation Coefficient	.412**	-.199**	.694**	1.000	.630**	.724**
		Sig. (2-tailed)	0.000	0.008	0.000		0.000	0.000
		N	179	179	126	179	126	179
	Q27	Correlation Coefficient	.271**	-0.112	.864**	.630**	1.000	.814**
		Sig. (2-tailed)	0.002	0.211	0.000	0.000		0.000
		N	179	179	126	179	126	179
	Q28	Correlation Coefficient	.301**	-0.129	.843**	.724**	.814**	1.000
		Sig. (2-tailed)	0.000	0.086	0.000	0.000	0.000	
		N	179	179	126	179	126	179
**. Correlation is significant at the 0.01 level (2-tailed).								

In Table 4-12 it is clear that age has a positive correlation with the four scales, PONS, MARS, overall satisfaction of MHCUs with the care provided by the registered nurses they perceived made a difference in their lives (Q27), and overall satisfaction with the care provided by all registered nurses at PHC (Q28). The correlation coefficients are 0.384, 0.412, 0.271 and 0.301 respectively, and they are all statistically significant (p-values< 0.01). This means that an increase in MHCUs age was associated with increase in the level of perceived nursing presence of registered nurses by MHCUs, an increase in the level of self-reported medication adherence, an increase in the overall satisfaction of MHCUs with the care provided by the registered nurses they felt made a difference in their lives, and an increase in the overall satisfaction with the care provided by all registered nurses at PHC. This was also concluded in a study by Amado *et al*. (2015:235), who showed that increasing age is associated with higher adherence to medication. As for the PONS, this study's results were contrary to Kostovich's (2012:172) findings where age was not statistically important with a p-value of 0.263 (>0.01).

However, there is evidence of a negative correlation between MHCUs level of education and PONS, MARS, overall satisfaction with the care provided by the registered nurses they perceived as making a difference in their lives, and overall satisfaction with the care provided by all registered nurses at PHC. The correlation coefficients are -0.260, -0.199, -0.112 and -0.119 respectively and they are all statistically significant (p-value< 0.01). This means that an increase in MHCUs' level of education was associated with a decrease in the level of perceived nursing presence of registered nurses by MHCUs, a decrease in the level of self-reported medication adherence, a decrease in the overall satisfaction of MHCUs with the care provided by the registered nurses they felt made a difference in their lives and decrease in the overall satisfaction with the care provided by all registered nurses at PHC. This study's findings differed from Kostovich's findings where no significant differences within levels of education were found (p = 0.192>0.01).

It is furthermore clear that there is evidence of a positive correlation between MHCUs' perceptions of the nursing presence of registered nurses, their satisfaction with the care provided by registered nurses they felt made a difference in their lives and their overall satisfaction with the care provided by all registered nurses at PHC. The correlation coefficients were 0.864 and 0.843 respectively. This means that an increase in MHCUs' perception that registered nurses display nursing presence is associated with an increase in the overall satisfaction of MHCUs with the care provided by the registered nurses they felt made a difference in their lives, and an increase in their overall satisfaction with the care provided by all registered nurses at PHC.

In addition, there is evidence of a positive correlation between MHCUs level of self-reported medication adherence and their overall satisfaction with the care provided by the registered

nurses they felt made a difference in their lives, and overall satisfaction with the care provided by all registered nurses at PHC. The correlation coefficients were 0.630 and 0.724 respectively and are statistically significant (p-values< 0.01). This means that an increase in MHCUs level of self-reported medication adherence is associated with higher satisfaction of MHCUs with the care provided by the registered nurses they felt made a difference in their lives and an increase in the overall satisfaction with the care provided by all registered nurses at PHC.

It follows that there was also evidence of a positive correlation between MHCUs' overall satisfactions with the care provided by the registered nurses they felt made a difference in their lives and overall satisfaction with the care provided by all registered nurses at PHC. The correlation coefficient is 0.814 and statistically significant (p-values< 0.01).

Turning to the correlation between PONS and MARS overall, the correlation coefficients for the two parameters is 0.694, which is statistically significant (0.000<0.01) since the p-value (0.000) is less than 0.01. The positive correlation means that the two variables are positively related with each other. This correlation implies that MHCUs who perceived registered nurses as displaying higher levels of nursing presence also reported high levels of medication adherence. Accordingly, evidence derived from the table shows that improvement in registered nurses' nursing presence plays a significant role in increasing the MHCUs level of self-reported adherence to their medication.

The above findings thus show that the hypothesis that there is a relationship between MHCUs self-reported medication adherence and the nursing presence of registered nurses as perceived by MHCUs at PHC in an urban health district in Gauteng is supported. Similar findings, such as that of Yagasaki and Komatsu (2013:515), are thus confirmed.

4.5 Summary of comments by participants on the main study

Out of 180 completed questionnaires, only 42 participants made use of the comments section (section D) by writing down anything they wanted to share. The researcher decided to present the comments in a table, separating comments about the registered nurses/the clinic/health system from those comments that participants made about themselves. Here are some of the highlights by means of summary of the participants' comments in Table 4.13.

Table 4-13: Comments by MHCUs

COMMENTS ABOUT RNs/THE HEALTH SYSTEM/CLINIC	COMMENTS ABOUT MHCUs THEMSELVES
My complains about medication side effects are not being addressed	Medication makes me have headaches, feel worse
I feel that the nurses do not understand me	I think very slow because of the medication
I collect my medication at the pharmacy	I'm pleased with my medication
I'm just given medication and not asked how I feel on it	I take double the dose of my medication when I feel too sad
Nurses are too busy to listen to my problems	I hate the injection I get every month
I struggle to sleep but won't be given sleeping tablets	The medication makes me feel stiff
I see a different nurse every month so it's not easy to share my problems	I no longer fight since on medication
The queues are always too long at the clinic	The medication is not working as I still feel sad and can't sleep
Questions about my illness and medication are never answered	I only take my medication when I struggle to sleep
Nurses are sometimes nice to me but I still feel they don't understand my illness	I don't believe that I'm sick and should be taking this medication
Being told to come back on my clinic date when I go on any other day when I feel overwhelmed and need someone to talk to	I take less of what I'm told to take because the medication makes me too tired
I feel the care was much better at the other clinic before I was referred to this one	I still got admitted even though I was taking my medication as told
Afraid to share problems with nurses for fear of being labelled "attention seeking"	
The treatment was better in hospital as they did not treat me like a 'mad person'	
I was once given incorrect medication because the nurses could not find my pre-packed medication	
The nurses say they can't change my medication when I complain, it can only be done by a Dr but I last saw a Dr a year ago	

Considering the participants' comments, the findings of this study indicating partial adherence of MHCUs to their medication and low levels of perceived nursing presence demonstrated by registered nurses, it is clear that the responsibility of improving medication adherence is not that of either the MHCUs or the registered nurses, but requires both parties' commitment and cooperation to improve and sustain MHCUs medication adherence.

4.6 Conclusion

Chapter 4 presented the results of the research. The data collected were analysed, interpreted and presented by the researcher with the help of the statistician. A positive correlation between MHCUs' medication adherence and nursing presence of registered nurses was demonstrated by the statistically significant relationship between variables. Comments made by the participants were all summarized and added, and recommendations will be made based on these results. Conclusions derived from the findings of this study, limitations and recommendations are presented in Chapter 5.

CHAPTER 5: EVALUATION, CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS OF THE STUDY

5.1 Introduction

The purpose of this chapter is to evaluate whether the objectives set in Chapter 1 had been reached and to provide conclusions on the findings of the study. The chapter also discusses the study limitations and make appropriate recommendations. The researcher provides recommendations for nursing practice, nursing education, nursing research and policy development based on the findings and conclusions.

5.2 Evaluation of the study

In view of the global challenge of medication adherence among MHCUs, the researcher gave comprehensive background information on medication adherence, mental healthcare at PHCs and nursing presence in Chapter 1. The research questions were formulated based on the problem statement. The theoretical perspective, definitions, research design, methods, researcher's role, ethical considerations and how the researcher strived to enhance the rigour of the study were also discussed in this chapter.

A comprehensive literature review was presented in Chapter 2 to examine existing similar or related studies that can serve as a basis for this study. This helped the researcher develop a conceptual map for the literature review, and to gain an in-depth understanding of the relevant study methods and instruments or tools with which to measure the study variables.

The research methodology was discussed in Chapter 3. The research questions were answered by means of a quantitative, non-experimental, descriptive and correlational design. A structured questionnaire was used to collect data. Inclusion and exclusion criteria were considered during sampling, and potential participants were screened for competency to consent. A preliminary study was conducted to test the data collection instrument. The MARS-questionnaire was used to meet the first research objective of determining the self-reported medication adherence of MHCUs at PHC clinics in an urban health district in Gauteng. The PONS-questionnaire was used to determine the nursing presence of registered nurses at PHC clinics in an urban health district in Gauteng. The third objective of determining the relationship between MHCUs' medication adherence and the nursing presence of registered nurses at PHC clinics in an urban health district in Gauteng was met by using a correlation matrix to test the magnitude, direction and strength of the relationship between the variables. The t-test of independent groups was used to test for the statistical significance of the means for PONS and MARS.

The collected data were co-analysed by a statistician of the NWU, Potchefstroom Campus and the findings were presented in Chapter 4. The demographic data of the study, self-reported medication adherence of MHCUs and the nursing presence of registered nurses at PHC were statistically described. The Cronbach's alpha coefficient (α) was used for testing internal consistency and to determine the reliability of the questionnaires. Lastly, the correlation between the two study variables was determined and the results were reported.

The study findings were compiled to answer the research questions, and in this chapter the limitations of the study are identified, conclusions are formulated, and recommendations based on the findings are provided for nursing practice, nursing education, nursing research, and policy development. The aim and objectives of this study have been met, as also evident from the following sections.

5.3 Conclusions of the study

The aim of the study was to determine the relationship between MHCUs' self-reported medication adherence and the nursing presence of registered nurses at PHC in an urban health district in Gauteng province as perceived by the MHCUs. The information gathered during the literature review relating to the two study variables (medication adherence and the nursing presence) and during the empirical study, assisted in achieving the aim and objectives of the study and to confirm the hypothesis. The conclusions are as follows:

5.3.1 Conclusions from the literature review

From the literature, it was clear that:

- Medication adherence is the most important facet of the management of MHCUs as it is linked to their improved healthcare outcomes and ultimately improves MHCUs' quality of life.
- There are many factors that can enhance medication adherence for MHCUs, of which the role of practitioners such as registered nurses has been identified as one of the factors that have not been adequately researched.
- It is important to measure medication adherence in order to put measures in place to address or enhance based on the results of the measurement.
- Management of MHCUs at PHCs will require registered nurses, as the drivers of the PHC model of care, to be skilled, knowledgeable and supported support.
- Improving MHCUs' insight can improve their medication adherence.

- The side effects of the medication a patient is taking can cause him/her to be non-adherent.
- Shared decision making in the management of MHCUs can improve medication adherence.
- The use of the theory of self-care of chronic illness can be used as a guide for registered nurses to enhance MHCUs' medication adherence.
- Registered nurses at PHC clinics are well positioned in terms of their scope of work to improve MHCUs' medication adherence.
- Health practitioners such as nurses also have an important role to play in ensuring MHCUs' adherence to medication.
- Nursing presence is an intervention that has good outcomes for both the receiver (MHCU) of the intervention and the giver (nurse).
- Nursing presence is a practice that can ensure that nursing as a profession promotes the humanistic approach to care. They should follow the humanistic nursing theory as a guide to their practice.
- Nursing presence is linked to positive health outcomes for patients.
- There was no evidence available on the relationship between the MHCUs' self-reported medication adherence and nursing presence.

5.3.2 Conclusions from the empirical study

- A sample of 180 MHCUs for this study was found to be adequate based on the KMO value of 0.857. The descriptive statistics of the demographic data revealed that there were no variations in the male-to-female ratio of the MHCUs. Blacks made up the majority of the sample in terms of race. Most of the MHCUs were between the ages of 30 and 40 years, followed by those in the 51 to 60 age group. The majority of the MHCUs had high school qualifications as their highest level of education more were single than married.
- The reliability of the MARS and the PONS questionnaires were confirmed using the Cronbach alpha coefficient. The MARS scored 0.871 and the PONS 0.983.
- The findings of this study revealed that MHCUs' self-reported medication adherence and their perception of whether registered nurses display presence or not can be influenced by some aspects of their demographic profile. The demographic data of the MHCUs were statistically correlated to their medication adherence and perceived nursing presence of registered

nurses. The gender of the MHCUs did not have any influence on their self-reported medication adherence or perceived level of nursing presence from registered nurses. The marital status of MHCUs had no effect on the level of perceived nursing presence reported, but with medication adherence there was a small practical significance (d) of 0.20 noted for married MHCUs compared to single ones. With regard to the MHCUs' race, there was evidence to suggest that adherence to medication is significantly dependent (p-value=0.017) on the race of the MHCUs. This was confirmed by a large practical significance between black and coloured MHCUs (d=0.85) and between white and coloured MHCUs (d=0.81). When it came to the race of MHCUs and the perceived nursing presence of registered nurses in this study, there was no evidence to prove any statistical significance but there was medium significance in practice between black and coloured MHCUs (d=0.73) and between whites and coloureds (d=0.65).

- The results of the MARS revealed that the participants reported partial adherence as evidenced by their average total score of 6.45±3.09, which is lower than the expected total score of 7 to 10 that is regarded as adherent to medication. This finding was also supported by the finding of only 96 of the 179 MHCUs managing to score from 7 to 10, with the remaining 83 scoring less than 7 and thus making them either non-adherent or partially adherent to medication.

- A high number of MHCUs (above 60%) of the 179 felt it was unnatural for their minds and bodies to be controlled by medication, and almost 75% believed staying on medication did not prevent them from getting sick.

- Just over 50% of the MHCUs reported sometimes stopping their medication if they felt worse when they take it.

- Almost three quarters of the MHCUs in this study did not agree that their thoughts were clearer on medication.

- The results of the PONS showed that the level of perceived nursing presence overall (total PONS score) by MHCUs as demonstrated by registered nurses was low as evidenced by the average total score of 72.2±15. The average score is lower than the total score of 75, which is regarded as a high level of perceived nursing presence. Furthermore, on a PONS 5-point Likert scale per item description, the mean was 2.91, which translates to 3, thus concluding that MHCUs had the perception that registered nurses occasionally demonstrated attributes of nursing presence towards them at PHC clinics in an urban health district.

- More than 90% of MHCUs reported to have registered nurses never or rarely given them as much control over their healthcare as possible, and that their spiritual needs have never or rarely been met by the same registered nurses.

- The correlation between the PONS and the MARS scale in totality was confirmed by findings from a correlation analysis. A Pearson correlation coefficient was run to establish whether the index for the MARS had a relationship with the index on PONS. The findings on the correlation between PONS and MARS revealed the correlation coefficient for the two parameters as 0.694, which indicates a positive relationship between the two study variables (medication adherence and nursing presence) as evidenced by the a positive value of the correlation coefficient that is between 0 and 1.

The following conclusions can be deduced from the above findings:

- The correct and reliable instruments were used for data collection.

- The study validated the PONS and MARS questionnaires in the South African context.

- The level of MHCUs' self-reported medication adherence at PHC clinics in an urban health district is partial adherence.

- The level of perceived nursing presence of registered nurses by MHCUs at PHC clinics in an urban health district is low.

- There is a relationship between MHCUs' self-reported medication adherence and the nursing presence of registered nurses at PHC clinics in an urban health district in Gauteng as perceived by MHCUs.

- The hypothesis is supported as the relationship between the study variables was confirmed.

5.3.3 Significance of the study

The merit of this study lies in the fact that it explored the under-investigated issue of MHCUs' medication adherence and the nursing presence of registered nurses at PHCs in an urban health district. The research fills a knowledge gap by determining the relationship between MHCUs' medication adherence and the nursing presence of registered nurses. Now that the relationship between MHCUs' medication adherence and the nursing presence of registered nurses had been confirmed, we can also confirm the findings of the study by Holtzman *et al*. (2015:817) that interventions focusing on health practitioners' characteristics such as the registered nurses' nursing presence to enhance medication adherence for MHCUs are crucial. In addition, this

research contributes to the body of knowledge on psychiatric nursing, namely new conclusions can be drawn on existing theories on medication adherence (MARS scale) and nursing presence (PONS scale). These conclusions provide direction for nursing practice, nursing education, further research and for policy development pertaining to the value of nursing presence to improve medication adherence of MHCUs at the PHC level in urban areas.

5.4 Limitations of the study

The study focused only on an urban health district, whereas the same challenges have been identified in the rural areas and districts. Moreover, in this context, the emphasis was on nurses' presence and its effect on MHCUs' medication adherence. The respective doctors, pharmacists and other members of the multi-disciplinary team should also learn special skills to deal with specific conditions among the MHCUs. Counselling can also help to manage mental health disorders, rather than only depending on adherence to medication. These points are limitations of this study, and future researchers may consider attending to these limitations.

5.5 Recommendations

Based on the findings and conclusions of this study, the following recommendations are formulated:

5.5.1 Recommendations for nursing practice

- The PHC clinics should have a system in place to monitor MHCUs' medication adherence.
- Registered nurses should work with MHCUs to enhance their medication adherence by giving them as much control over their healthcare as possible through discussing treatment options with them.
- Registered nurses at PHCs should pay attention to side effects MHCUs may experience from the medication and intervene by advocating for the prescription of other medication to improve adherence.
- Registered nurses should practice nursing presence as an approach when fulfilling their nursing duties by providing care that is holistic and personalised to MHCUs.
- Registered nurses at PHCs should listen to MHCUs' complaints regarding their medication and try to resolve them to avoid intentional non-adherence from MHCUs, including complaints regarding the side effects of the medication.

- There should be continuous in-service training for registered nurses at PHC clinics on the management of MHCUs, nursing presence and medication adherence.
- Health districts should at least have an advanced psychiatric nurse/s to mentor and provide support to registered nurses at PHC clinics.
- Registered nurses should also meet the MHCUs' spiritual needs when caring for them by being sensitive to their spiritual needs and respecting them.
- The use of other multi-disciplinary team members (e.g. pharmacists) to enhance MHCUs' medication adherence should also be explored and encouraged.
- Mental health support groups should be in place to equip MHCUs with the necessary knowledge and skills in self-managing their mental disorders and to improve insight into their mental conditions.

5.5.2 Recommendations for nursing education

It is recommended that:

- Nursing education institutions should include nursing presence training through experiential learning in the nursing education curricula from as early as the first year of study to empower nursing students and to promote the practice as part of their profession.
- Nurse educators should role model nursing presence to student nurses so that they can learn how to care for healthcare service users.
- Nursing education institutions should at all times emphasize the important role student nurses play in enhancing service users' medication adherence.

5.5.3 Recommendations for nursing research

It is recommended that:

- The concept of nursing presence and its effect on healthcare service users should be explored further within the South African context in different disciplines.
- Further qualitative research should be done to explore the nursing presence of registered nurses from the perspectives of MHCUs.
- Conduction of action research to implement ways for nurses to practise nursing presence.

- Registered nurses conception of nursing presence should be explored.
- The use of the presence approach by other MDT members to enhance MHCUs' medication adherence should also be explored.
- Research on the challenges MHCUs experience at PHC clinics in urban health districts could help improve services to this vulnerable group.
- More research is needed on the factors and characteristics inherent to healthcare practitioners that can help them enhance MHCUs' medication adherence.

5.5.4 Recommendations for policy development

It is suggested that:

- When policies are developed for the orientation process of registered nurses at PHC clinics, nursing presence should be emphasized.
- Nurses should be trained on nursing presence on a regular basis to promote its practice.
- There should be a guiding document to help registered nurses measure patients' medication adherence at PHC clinics or implementation of the current addressing the problem.
- Implementation of current guidelines such as the national mental health policy should be prioritized so as measure their effectiveness.
- There should be a clear policy on the management of MHCUs at PHC clinics. It should be clear on the role of registered nurses at PHCs with regard to caring for MHCUs.
- Healthcare policies that inform nursing care from registered nurses should not only inform the scientific aspect of their practice but also the art component.

5.6 Summary

This chapter reflected on the objectives of the study and discussed the recommendations and limitations. The research objectives have been achieved, namely to determine the self-reported medication adherence of MHCUs at PHC clinics in an urban health district in Gauteng; to determine the nursing presence of registered nurses at primary healthcare clinics in an urban health district in Gauteng; and to determine the relationship between MHCUs' self-reported medication adherence and the nursing presence of registered nurses at PHC clinics in an urban health district in Gauteng.

In conclusion, this study recognized the role that the nursing presence of registered nurses plays in MHCUs self-reported medication adherence. The first step for registered nurses as part of this important role is to ensure that the diagnosis of the psychiatric disorders is well established and the indication for the prescribed medication is adequate (De las Cuevas *et al.,* 2014:1547). If nursing presence among registered nurses at PHC is encouraged and promoted, MHCUs will have improved medication adherence, resulting in positive health outcomes.

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ANNEXURE A: INFORMED CONSENT DOCUMENTATION

NWU®
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INFORMED CONSENT DOCUMENTATION FOR MENTAL HEALTHCARE USERS IN PHC CLINICS, URBAN HEALTH DISTRICT IN THE GAUTENG PROVINCE

TITLE OF THE RESEARCH STUDY: The relationship between mental healthcare users' medication adherence and the nursing presence of registered nurses in primary healthcare

ETHICS REFERENCE NUMBER: NWU-00053-18-S1

PRINCIPAL INVESTIGATOR: Prof E. du Plessis

POST GRADUATE STUDENT: LILLIAN KALIMASHE

ADDRESS: 41 HANSIE KOTZE STREET, EIKEPARK, RANDFONTEIN, 1759

CONTACT NUMBER: 078 379 6657

You are being invited to take part in a **research study** that forms part of a Masters Degree study in Nursing. Please take some time to read the information presented here, which will explain the details of this study. Please ask the researcher or person explaining the research to you any questions about any part of this study that you do not fully understand. It is very important that you are fully satisfied that you clearly understand what this research is about and how you might be involved. Also, your participation is **entirely voluntary** and you are free to say no to participate. If you say no, this will not affect you negatively in any way whatsoever.

You are also free to withdraw from the study at any point, even if you do agree to take part now.

This study has been approved by the Health Research Ethics Committee of the Faculty of Health Sciences of the North-West University (NWU-00053-18-S1) and will be conducted according to the ethical guidelines and principles of Ethics in Health Research: Principles, Processes and Structures (DoH, 2015) and other international ethical guidelines applicable to this study. It might be necessary for the research ethics committee members or other relevant people to inspect the research records.

What is this research study all about?

- *This study will be conducted in Gauteng Province, PHC clinics in an urban health district and will involve completion of self-report questionnaires with the assistance of a professional person explaining the questionnaires and clarifying questions if the need arises.*
- *The researcher aims to determine the relationship between your medication taking as a mental health care user and nursing presence of registered nurses.*
- *The researcher will use the information you will complete in the questionnaires to determine this relationship for the research study.*
- *We plan to have about 500 participants for the research project.*

Why have you been invited to participate?

- *You have been invited to be part of this research because you are a mental healthcare user using PHC services within an urban health district.*
- *You use one of the 15 identified PHC clinics within the health district.*
- *You also fit the research because you have been using the mental health services at PHC for more than three months.*
- *You are deemed to be capable of giving consent to participate and are willing to participate.*

What will be expected of you?

- *You will be expected to complete self-report questionnaires which will take approximately an hour. Before being given the questionnaires to complete, you will be screened with the MacCat-CR scale to determine your capacity to consent for participation in the study.You will either take part in the preliminary study or the actual study.*
- *The process will be a once-off event. During this process of questionnaire completion, you are requested to respond to the questions as honest as you can be so as to assist the researcher obtain information that will reflect a true picture of the relationship between the two studied variables.*

Will you gain anything from taking part in this research?

- There will be no direct gains or benefits for you if you take part in this study, however your participation will assist the researchers to generate new knowledge and come up with recommendations that may improve the mental health services for all rendered at PHC clinics within the urban health district.

Are there risks involved in you taking part in this research and what will be done to prevent them?

- The risk to you in this study is that you may experience slight emotional discomfort and mental tiredness but this will be limited by you being allowed to bring one friend or family member for emotional support.
- The researcher will ensure that an experienced psychiatric nurse is on standby to assist and provide emotional support to you; furthermore you will be given a break in between completion of the questionnaire's sections.
- There are more gains for you in joining this study than there are risks.

How will we protect your confidentiality and who will see your findings?

Anonymity of your findings will be protected by not putting your name or the name of the clinic where you are from on the questionnaires. Confidentiality will be respected by limiting access to collected data to the principal researcher and co-researchers only. All contacts between the participants and mediators/researcher will take place in a private space which will be an office

or consultation room within the clinic facility, thus ensuring privacy. *Your results will be kept confidential by not sharing information regarding the study with persons not officially or directly involved in the study. Only the principal researcher and the co-researchers will be able to look at your findings. Findings will be kept safe by locking hard copies in locked cupboards in the researcher's office and electronic data will be password protected. Data will be stored for 5 years after which it will be destroyed by* erasing all electronic data and shredding hardcopy data.

What will happen with the findings or samples?

- *The data collected for this study will only be used for this Health Research Ethics Committee approved study and will not be used again for any other studies. The data will be used within South Africa. The anonymised findings of the study will be shared with the participating health district and the Gauteng Department of Health, which will also include the recommendations from the researcher.*

How will you know about the results of this research?

- We will give you the results of this research once the study has been completed. The researcher will provide feedback to the mediators at different clinics, who will then share it with you. The feedback will entail care workers sharing with you the findings of the research study, recommendations from the study and what this means for mental healthcare users in PHC within the urban health district.

Will you be paid to take part in this study and are there any costs for you?

This study is partially funded by the NRF (Grant number 105914).

No, you will not be paid to take part in the study but you will be reimbursed the money for traveling to the clinics for activities related to the research study.

Refreshments will be provided for the participants who will be taking part in the study.

There will thus be no costs involved for you, if you do take part in this study.

Is there anything else that you should know or do?

- You can contact Lillian Kalimashe at 078 379 6657 if you have any further questions or have any problems.

- You can also contact the Health Research Ethics Committee via Mrs Carolien van Zyl at 018 299 1206 or carolien.vanzyl@nwu.ac.za if you have any concerns that were not answered about the research or if you have complaints about the research.
- You will receive a copy of this information and consent form for your own purposes.

Declaration by participant

By signing below, I …… agree to take part in the research study titled: The relationship between mental healthcare users' medication adherence and nursing presence of registered nurses in Primary Healthcare.

I declare that:

- I have read this information/it was explained to me by a trusted person in a language with which I am fluent and comfortable.
- The research was clearly explained to me.
- I have had a chance to ask questions to both the person getting the consent from me, as well as the researcher and all my questions have been answered.
- I understand that taking part in this study is **voluntary** and I have not been pressurised to take part.
- I may choose to leave the study at any time and will not be handled in a negative way if I do so.
- I may be asked to leave the study before it has finished, if the researcher feels it is in the best interest, or if I do not follow the study plan, as agreed to.
- I understand that the results of the study may be sent to the health district and the Department of Health, and they will be anonymised.

Signed at (*place*) ……. on (*date*) …….. 20....

.....	.....
Signature of participant	Signature of witness

Declaration by person obtaining consent

I *(name)* ..... declare that:

- I clearly and in detail explained the information in this document to

  .....

- I did/did not use an interpreter.
- I encouraged him/her to ask questions and took adequate time to answer them.
- I am satisfied that he/she adequately understands all aspects of the research, as discussed above
- I gave him/her time to discuss it with others if he/she wished to do so.

Signed at (*place*) ..... On (*date*) ..... 20....

....

Signature of person obtaining consent Signature of witness

Declaration by researcher

I Lillian Kalimashe declare that:

- I had it explained by ..... who I trained for this purpose.

- I did not use an interpreter
- I was available should he/she want to ask any further questions.
- The informed consent was obtained by an independent person.
- I am satisfied that he/she adequately understands all aspects of the research, as described above.
- I am satisfied that he/she had time to discuss it with others if he/she wished to do so.

Signed at (*place*) ..... On (*date*) ..... 20....

....

Signature of researcher **Signature of witness**

ANNEXURE B: RECRUITMENT MATERIAL

ANNEXURE C: LETTER TO REQUEST PERMISSION TO USE THE MARS QUESTIONNAIRE

Letter Seeking Permission to Use Survey/Questionnaire Tool

NORTH-WEST UNIVERSITY
YUNIBESITI YA BOKONE BOPHIRIMA
NOORDWES-UNIVERSITEIT

Ms Lillian Kalimashe
41 Hansie Kotze Street
Eikepark
Randfontein 1759
Gauteng
South Africa
14 July 2018

ProfessorJayashri Kulkarni
Monash Alfred Psychiatry research centre
Level 4
607 St Kilda Road, St Kilda
Vic 3004
Australia

Greetings Professor

I am a student at North West University, under the Health Sciences Faculty, currently enrolled for a Masters Degree in Psychiatric Nursing. I am conducting a study on **"The relationship between mental health care users' medication adherence and the nursing presence of registered nurses in primary health care"**, as a requirement for the completion of the said degree. The research study will be done under the supervision of Prof. Emmerentia du Plessis

I would like your permission to use the Medication Adherence Scale; **MARS** (Thompson *et al*, 2000) survey instrument in my research study. I would like to use and print your survey under the following conditions:

- I will use this survey only for my research study and will not sell or use it with any compensated development activities.
- I will include the copyright statement on all copies of the instrument.
- I will send my research study, copy of reports and articles that make use of this survey instrument promptly to your attention.

If these are acceptable terms and conditions, please indicate so by replying to me in writing through email: molemanel@yahoo.com

Sincerely,

Masters Degree Student

Lillian Kalimashe

ANNEXURE D: PERMISSION TO USE PRESENCE OF NURSING SCALE QUESTIONNAIRE

LOYOLA UNIVERSITY CHICAGO 1870 AD MAJOREM DEI GLORIAM

Marcella Niehoff School of Nursing
Health Science Campus • 2160 S. First Avenue
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August 3, 2015

Professor Emmerentia du Plessis
School of Nursing Science
North West University
Potchefstroom, South Africa

Dear Professor du Plessis,

Thank you for your interest in the Presence of Nursing Scale.

You are granted permission to use the PONS for non-commercial purposes. You may edit the instructions for the instrument as appropriate for your sample(s). You may also change the formatting of the instrument to maintain a consistent presentation with any other instruments you may be using. The wording of the items and the scaling options may not be changed without express permission. Any edited versions of the instrument will remain my property and I request you forward a copy of the edited version for my records.

The instrument may not be duplicated or reproduced in any publications. I would request a copy of any published manuscripts or abstracts of presentations that reference the PONS.

Finally, I would appreciate any unpublished feedback relating to the psychometrics of the PONS and your experiences using the instrument.

Thank you again for your interest in the PONS and I wish you the best in your efforts.

Sincerely,

Carol Kostovich, PhD, RN

Carol T. Kostovich, PhD, RN
Associate Professor and Director of Simulation
Marcella Niehoff School of Nursing
Loyola University Chicago
Ckostovich1@luc.edu
and
Research Health Scientist
Edward Hines Jr., VA Hospital
Hines, IL
Carol.Kostovich@va.gov

ANNEXURE E: APPLICATION LETTER TO GAUTENG DEPARTMENT OF HEALTH

NORTH-WEST UNIVERSITY
YUNIBESITI YA BOKONE-BOPHIRIMA
NOORDWES-UNIVERSITEIT

ENQUIRIES: L. Kalimashe

Tel: 078 379 6657/ 011416-3561

Email: molemanel@yahoo.com

Lillian.Kalimashe@gauteng.gov.za

Head of Department of Health

37 Sauer Street

Bank of Lisbon

Marshall Town

2147

Dear Sir/Madam

RE: Permission to undertake research in a Health District within the Gauteng Province.

I hereby request to undertake a research study at the West Rand Health District. I am a Master's student under the auspices of the School of Nursing, North West University, and Potchefstroom Campus. The study has been approved by the North West University Ethics Committee (Ethics number: NWU-00053-18-S1). My research topic is: **The relationship between mental healthcare users' medication adherence and nursing presence of registered nurses in primary healthcare.**

A letter to request permission will also been submitted to the West Rand Health District Manager.

Thank you.

Yours sincerely,

L. Kalimashe (Researcher)

Signature: 

ANNEXURE F: APPLICATION LETTER TO WEST RAND HEALTH DISTRICT

NORTH-WEST UNIVERSITY
YUNIBESITI YA BOKONE-BOPHIRIMA
NOORDWES-UNIVERSITEIT

ENQUIRIES: L. Kalimashe

Tel: 078 379 6657/ 011 416-3561

Email: molemanel@yahoo.com

Lillian.Kalimashe@gauteng.gov.za

District Manager

West Rand Health District

Cnr Luipaard and Vlei Street

Krugersdorp

1740

Dear Sir/Madam

RE: Permission to undertake research in the West Rand Health District

I hereby request to do a research study within your Health District. My topic is: **The relationship between mental healthcare users' medication adherence and nursing presence of registered nurses in primary healthcare** in an urban health district within the Gauteng Province**.**

Attached is the North West University Ethics Certificate (Ethics number: NWU-00053-18-S1) as evidence of approval to conduct the study. Requisition letters will be addressed to the relevant sub-districts after permission has been granted by WRHD

Thank you.

Yours sincerely,

L. Kalimashe (Researcher)

Signature: 

ANNEXURE G: PERMISSION TO USE MEDICATION ADHERENCE RATING SCALE (MARS) QUESTIONNAIRE

MAPrc
We mend minds
Monash Alfred Psychiatry research centre

Tuesday, 17 July 2018

To: Lillian Kalimashe
41 Hansie Kotze Street Eikepark
Randfontein 1759 Gauteng
South Africa

Re: Use of MARS Tool

Dear Ms Kalimashe,

In response to your letter of request dated July 14th 2018, I hereby grant you permission to use the MARS rating scale for your research as outlined in your letter

We wish you every success with your research and look forward to reading about your results using the MARS

We have provided you with the scoring instructions for the scale and welcome any queries you may have

Sincerely,

Professor Jayashri KULKARNI
Professor of Psychiatry and Director MAPrc
MBBS MPM FRANZCP PhD FAHMS

Monash Alfred Psychiatry Research Centre (MAPrc)
We are a research centre of Monash University and the Alfred Hospital
www.maprc.org.au

MAPrc, Level 4, 607 St Kilda Road
Melbourne 3004, Australia
Telephone: 61 3 9076 6564 Fax: 61 3 9076 8545 Email: maprcpa@monash.edu

Patron: His Excellency General the Honourable Sir Peter Cosgrove AK MC (Retd)

TheAlfred

MONASH University
Medicine, Nursing and Health Sciences

ANNEXURE H: THE SURVEY QUESTIONNAIRE FOR THE STUDY

THE PRESENCE OF NURSING SCALE QUESTIONNAIRE (KOSTOVICH, 2002) FOR THE STUDY:

The relationship between mental healthcare users' medication adherence and the nursing presence of registered nurses in primary healthcare (L Kalimashe)

SECTION A

Demographic Information: Please tell us about yourself:

Please write in or mark with 'X'

How old are you? _____ Years

What is your highest level of education? (Mark one)

Primary school	
High school	
college	
Technical school	
University	

What is your Race? **(Mark one)**

Black	
White	
Coloured	
Asian	
Other	

What is your marital status? (Mark one)

Single	
Married	
Customary marriage	
Living together	
Divorced	
Widowed	
Separated	

What is your gender? (Mark one)

Male	
Female	

Psychiatric diagnosis: _____

Number of years receiving medication for the diagnosis: _____

Why did you come to the clinic? _____

SECTION B: Questionnaire on nursing presence

Presence of Nursing Scale (PONS)

If you are a patient being cared for in the **primary healthcare**, please answer the following questions by circling your response. There is no right or wrong answers. Your answers will NOT be shared with any of the nursing staff. Your responses will be kept confidential.

Answer these questions as you think about the REGISTERED NURSES that have cared for you during clinic visits.

1. Has the presence of these REGISTERED NURSES made a difference in your life because they have cared for you? (The difference can be positive or negative).

Yes	No

If you answered YES to the above question, please answer questions 2-28.

If you answered NO to the above question, please skip to question 28. Answer question 28.

2. These REGISTERED NURSES were open to my concerns.

Never	Rarely	Occasionally	Frequently	Always

3. These REGISTERED NURSES taught me what I needed to know.

Never	Rarely	Occasionally	Frequently	Always

4. These REGISTERED NURSES “checked” on me.

Never	Rarely	Occasionally	Frequently	Always

5. These REGISTERED NURSES met my spiritual needs.

Never	Rarely	Occasionally	Frequently	Always

6. These REGISTERED NURSES talked to me as a friend.

Never	Rarely	Occasionally	Frequently	Always

7. These REGISTERED NURSES physically comforted me.

Never	Rarely	Occasionally	Frequently	Always

8. These REGISTERED NURSES emotionally comforted me.

Never	Rarely	Occasionally	Frequently	Always

9. These REGISTERED NURSES understood my feelings.

Never	Rarely	Occasionally	Frequently	Always

10. These REGISTERED NURSES earned my trust.

Never	Rarely	Occasionally	Frequently	Always

11. These REGISTERED NURSES were skilled in providing my care.

Never	Rarely	Occasionally	Frequently	Always

12. These REGISTERED NURSES were there if I needed them.

Never	Rarely	Occasionally	Frequently	Always

13. These REGISTERED NURSES helped my day run smoothly.

Never	Rarely	Occasionally	Frequently	Always

14. These REGISTERED NURSES created a sense of healing around me.

Never	Rarely	Occasionally	Frequently	Always

15. These REGISTERED NURSES listened and responded to my needs.

Never	Rarely	Occasionally	Frequently	Always

16. These REGISTERED NURSES calmed my fears.

Never	Rarely	Occasionally	Frequently	Always

17. These REGISTERED NURSES were concerned about me.

Never	Rarely	Occasionally	Frequently	Always

18. These REGISTERED NURSES were committed to care for me.

Never	Rarely	Occasionally	Frequently	Always

19. These REGISTERED NURSES made me feel safe.

Never	Rarely	Occasionally	Frequently	Always

20. These REGISTERED NURSES made me feel at peace.

Never	Rarely	Occasionally	Frequently	Always

21. These REGISTERED NURSES took care of me as a person, not as a disease.

Never	Rarely	Occasionally	Frequently	Always

22. These REGISTERED NURSES gave me as much control over my healthcare as possible.

Never	Rarely	Occasionally	Frequently	Always

23. These REGISTERED NURSES made the quality of my life better.

Never	Rarely	Occasionally	Frequently	Always

24. I had confidence in these REGISTERED NURSES.

Never	Rarely	Occasionally	Frequently	Always

25. I felt a connection between myself and these REGISTERED NURSES.

Never	Rarely	Occasionally	Frequently	Always

26. The presence of these REGISTERED NURSES made a difference to me:

Never	Rarely	Occasionally	Frequently	Always

27. Overall, how satisfied were you with the care provided by <u>these</u> REGISTERED NURSES?

Very Dissatisfied	Dissatisfied	Neither Satisfied or Dissatisfied	Satisfied	Very Satisfied

28. Overall, how satisfied were you with the care provided by <u>all</u> of these REGISTERED NURSES?

Very Dissatisfied	Dissatisfied	Neither Satisfied or Dissatisfied	Satisfied	Very Satisfied

SECTION C: Questionnaire on mental healthcare users' medication adherence

Medication Adherence Rating Scale (MARS)

Circle the answer which best describes your behaviour or attitude towards your medication **during the past week.**

MARS questionnaire

	QUESTION	ANSWER
1	Do you ever forget to take your medication?	**YES / NO**
2	Are you careless at times about taking your medication?	**YES / NO**
3	When you feel better, do you sometimes stop taking your medication?	**YES / NO**
4	Sometimes if you feel worse when you take the medication, do you stop taking it?	**YES / NO**
5	I take my medication only when I am sick	**YES / NO**
6	It is unnatural for my mind and body to be controlled by medication	**YES / NO**
7	My thoughts are clearer on medication	**YES / NO**
8	By staying on medication, I can prevent getting sick.	**YES / NO**
9	I feel weird, like a 'zombie' on medication	**YES / NO**
10	Medication makes me feel tired and sluggish	**YES / NO**

SECTION D: Comments

Please feel free to make comments:

Thank you for your participation!

ANNEXURE I: MACCAT-CR SCREENING TOOL

MACCAT-CR STANDARD OF COMPETENCY MEASURE

Questions are based on the research as it has been explained to the outpatient mental healthcare users (MHCU), and this screening process will be performed before consent is obtained. The outcomes from the screening will inform the researcher of the potential participant's capacity to consent to taking part in the research study. A score of five or more out of these seven questions will deem a patient competent to give informed consent to take part in the research study.

Area	***Justification***	***Question***	***Shows applicable competency***	
			Yes (1)	***No (0)***
Understanding:	***The ability to understand and comprehend relevant information***	***'Could you explain to me what the research I have explained to you is about?'***		
		'What is expected of you in the research?'		
Appreciation:	***The ability to appreciate and recognize a situation and consequences of actions and applying it to one's own situation***	***'How will participating in this research affect you?'***		
		'Will taking part in this research affect your clinic visits?'		
Reasoning	***Ability to reason information in a rational manner.***	***'Please explain to me what will happen if you decide to withdraw from this research?'***		
Expressing a choice	***Communicating a choice clearly and consistently.***	***'What effect will taking part in this research have on you?'***		
		'Why would you like to take part in this research?'		
Total score (a score of 5 or more indicates competency to consent to this research study)				
Do you find this MHCU competent to grant permission in full knowledge of the possible consequences, possible risks and benefits thus expressing own choice?				

Date of assessment: _____Signature: _____

ANNEXURE J: CONFIDENTIALITY UNDERTAKING

NORTH-WEST UNIVERSITY
YUNIBESITI YA BOKONE-BOPHIRIMA
NOORDWES-UNIVERSITEIT

CONFIDENTIALITY UNDERTAKING

entered into between:

I, the undersigned

Prof / Dr / Mr / Ms: _____

Identity Number: _____

Address: _____

Hereby undertake in favor of the **NORTH-WEST UNIVERSITY**, a public higher education institution established in terms of the Higher Education Act No. 101 of 1997

Address: Office of the Institutional Registrar, Building C1, 53 Borcherd Street, Potchefstroom, 2520

(Hereinafter the "NWU")

1 Interpretation and definitions

1.1 In this undertaking, unless inconsistent with, or otherwise indicated by the context:

1.1.1 "Confidential Information" shall include all information that is confidential in its nature or marked as confidential and shall include any existing and new information obtained by me after the Commencement Date, including but not be limited in its interpretation to, research data, information concerning research participants, all secret knowledge, technical information and specifications, manufacturing techniques, designs, diagrams, instruction manuals, blueprints, electronic artwork, samples, devices, demonstrations, formulae, know-how, intellectual property, information concerning materials, marketing and business information generally, financial information that may include remuneration detail, pay slips, information relating to human capital and employment contract, employment conditions, ledgers, income and expenditures and other materials of whatever description in which the NWU has an interest in being kept confidential; and

1.1.2 "Commencement Date" means the date of signature of this undertaking by myself.

1.2 The headings of clauses are intended for convenience only and shall not affect the interpretation of this undertaking.

2 Preamble

2.1 In performing certain duties requested by the NWU, I will have access to certain Confidential Information provided by the NWU in order to perform the said duties and I agree that it must be kept confidential.

2.2 The NWU has agreed to disclose certain of this Confidential Information and other information to me subject to me agreeing to the terms of confidentiality set out herein.

3 Title to the Confidential Information

I hereby acknowledge that all right, title and interest in and to the Confidential Information vests in the NWU and that I will have no claim of any nature in and to the Confidential Information.

4 Period of confidentiality

The provisions of this undertaking shall begin on the Commencement Date and remain in force indefinitely.

5 Non-disclosure and undertakings

I undertake:

5.1 to maintain the confidentiality of any Confidential Information to which I shall be allowed access by the NWU, whether before or after the Commencement Date of this undertaking. I will not divulge or permit to be divulged to any person any aspect of such Confidential Information otherwise than may be allowed in terms of this undertaking;

5.2 to take all such steps as may be necessary to prevent the Confidential Information falling into the hands of an unauthorised third party;

5.3 Not to make use of any of the Confidential Information in the development, manufacture, marketing and/or sale of any goods;

5.4 not to use any research data for publication purposes;

5.5 not to use or disclose or attempt to use or disclose the Confidential Information for any purpose other than performing research purposes only and includes questionnaires, interviews with participants, data gathering, data analysis and personal information of participants/research subjects;

5.6 Not to use or attempt to use the Confidential Information in any manner which will cause or be likely to cause injury or loss to a research participant or the NWU; and

5.7 That all documentation furnished to me by the NWU pursuant to this undertaking will remain the property of the NWU and upon the request of the NWU will be returned to the NWU. I shall not make copies of any such documentation without the prior written consent of the NWU.

6 Exceptions

The above undertakings by me shall not apply to Confidential Information which I am compelled to disclose in terms of a court order.

7 Jurisdictions

This undertaking shall be governed by South African law be subject to the jurisdiction of South African courts in respect of any dispute flowing from this undertaking.

8 Whole agreement

8.1 This document constitutes the whole of this undertaking to the exclusion of all else.

8.2 No amendment, alteration, addition, variation or consensual cancellation of this undertaking will be valid unless in writing and signed by me and the NWU.

Dated at Potchefstroom this _____ 20____

Witnesses:

1 .....

2 ....

(*Signatures of witnesses*) (*Signature*)

ANNEXURE K: PERMISSION FROM GAUTENG DEPARTMENT OF HEALTH AND THE HEALTH DISTRICT

GAUTENG PROVINCE
HEALTH
REPUBLIC OF SOUTH AFRICA

WEST RAND DISTRICT
FAMILY MEDICINE
Dr NM MPANGULA
Telephone: (011) 9516219
Cell: 0791084323
mpangulamichel@gmail.com

Fax: 086603445

To: Ms. L. Kalimashe

Email: Lillian.Kalimashe@gauteng.gov.za

FROM: Dr NM Mpangula

DATE: 27 November 2018

REF: NRHD GP 201810_061

PROJECT TITLE: **THE RELATIONSHIP BETWEEN MENTAL CARE USERS MEDICATION ADHERNCE AND THE NURSING PRESENCE OF REGISTERED NURSES IN PRIMARY HEALTH CARE.**

Dear Ms. L. Kalimashe

We would like to inform you that we have received your application to conduct a research in West Rand District Council as stated in your letter of the 24 August 2018. We are pleased to inform you that your request was assessed and **approved.**
However, note that this approval is only related to your request to conduct a project in the West Rand District PHC Clinics Gauteng.

We advise you to share your final finding of your research with the district management before it is made public or published.

We would like to wish you good luck during this project. For any additional information, feel free to contact our department.

Regards.

Dr NM Mpangula

Specialist Family Physician
Head of Clinical Unit
West Rand District Council Area
Department of Family Medicine
University of the Witwatersrand

ANNEXURE L: LETTER OF GOODWILL FOR PHC CLINICS

WEST RAND HEALTH DISTRICT

Telephone: (011) 9514515

PHC Clinic: _____

Contact: _____

Date: _____

Time: _____

Name of Clinic manager: _____ SANC Number: _____

TITLE: LETTER OF GOODWILL TO CONDUCT A RESEARCH STUDY

This letter serves to confirm that I_____ allow **Lillian Kalimashe** to conduct the research study titled **THE RELATIONSHIP BETWEEN MENTAL HEALTHCARE USERS' MEDICATION ADHERENCE AND THE NURSING PRESENCE OF REGISTERED NURSES IN PRIMARY HEALTH CARE** at this (_____) PHC Clinic as approved by the HREC (Ethics no: **NWU-00053-18-A1**), the Gauteng Department of Health and the West Rand Health District (REF: **NRHD GP 201810_061**).

Signature of manager: _____ Date: _____

Signature of researcher: _____ Date: _____

ANNEXURE M: ETHICS APPROVAL LETTER

NORTH-WEST UNIVERSITY
NOORDWES-UNIVERSITEIT
YUNIBESITI YA BOKONE-BOPHIRIMA

Private Bag X1290, Potchefstroom
South Africa 2520

Tel: 018 299-1111/2222
Fax: 018 299-4910
Web: http://www.nwu.ac.za

Research Ethics Regulatory Committee
Tel: 018 299-4849
Email: nkosinathi.machine@nwu.ac.za

10 March 2019

ETHICS APPROVAL LETTER OF STUDY

Based on approval by the North West University Health Research Ethics Committee (NWU-HREC) on 10/03/2019, the NWU Health Research Ethics Committee hereby approves your study as indicated below. This implies that the North-West University Research Ethics Regulatory Committee (NWU-RERC) grants its permission that, provided the special conditions specified below are met and pending any other authorisation that may be necessary, the study may be initiated, using the ethics number below.

Study title: The relationship between mental healthcare users' medication adherence and the nursing presence of registered nurses in primary healthcare.
Study Leader/Supervisor (Principal Investigator)/Researcher: Prof E du Plessis
Student: L Kalimashe

Ethics number:

N	W	U	-	0	0	0	5	3	-	1	8	-	A	1
Institution				Study Number						Year			Status	

Status: S = Submission; R = Re-Submission; P = Provisional Authorisation; A = Authorisation

Application Type: Single Study
Commencement date: 10/03/2019 **Risk:** Medium
Expiry date: 31/03/2020
Approval of the study is initially provided for a year, after which continuation of the study is dependent on receipt and review of a six monthly (or as otherwise stipulated) monitoring report and the concomitant issuing of a letter of continuation.

Special in process conditions of the research for approval (if applicable):

- Please provide the HREC with a copy of the goodwill permission letters from the primary healthcare clinics (PHCs) to be included in the study, before entering each clinic.

General conditions:

While this ethics approval is subject to all declarations, undertakings and agreements incorporated and signed in the application form, the following general terms and conditions will apply:

- *The study leader/supervisor (principle investigator)/researcher must report in the prescribed format to the NWU-HREC:*
  - *annually (or as otherwise requested) on the monitoring of the study, whereby a letter of continuation will be provided, and upon completion of the study; and*
  - *without any delay in case of any adverse event or incident (or any matter that interrupts sound ethical principles) during the course of the study.*
- *The approval applies strictly to the proposal as stipulated in the application form. Should any amendments to the proposal be deemed necessary during the course of the study, the study leader/researcher must apply for approval of these amendments at the NWU-HREC, prior to implementation. Should there be any deviations from the study proposal without the necessary approval of such amendments, the ethics approval is immediately and automatically forfeited.*
- *Annually a number of studies may be randomly selected for an external audit.*
- *The date of approval indicates the first date that the study may be started.*
- *In the interest of ethical responsibility the NWU-RERC and NWU-HREC reserves the right to:*
  - *request access to any information or data at any time during the course or after completion of the study;*
  - *to ask further questions, seek additional information, require further modification or monitor the conduct of your research or the informed consent process;*

- *withdraw or postpone approval if:*
  - *any unethical principles or practices of the study are revealed or suspected;*
  - *it becomes apparent that any relevant information was withheld from the NWU-HREC or that information has been false or misrepresented;*
  - *submission of the annual (or otherwise stipulated) monitoring report, the required amendments, or reporting of adverse events or incidents was not done in a timely manner and accurately; and / or*
  - *new institutional rules, national legislation or international conventions deem it necessary.*
- *NWU-HREC can be contacted for further information or any report templates via Ethics-HRECApply@nwu.ac.za or 018 299 1206.*

The NWU-HREC would like to remain at your service as scientist and researcher, and wishes you well with your study. Please do not hesitate to contact the NWU-HREC or the NWU-RERC for any further enquiries or requests for assistance.

Yours sincerely

Prof Wayne Towers
Chairperson NWU Health Research Ethics Committee

Original details: (22351930) C:\Users\22351930\Desktop\ETHICS APPROVAL LETTER OF STUDY.docm
8 November 2018

Current details: (22351930) M:\DSS1\8533\Monitoring and Reporting Cluster\Ethics\Certificates\Templates\Research Ethics Approval Letters\9.1.5.4.1 HREC Ethical Approval Letter.docm
3 December 2018

File reference: 9.1.5.4.2

ANNEXURE N: DECLARATION OF LANGUAGE EDITING

cumlaude
language practitioners

Director: CME Terblanche - BA (Pol Sc), BA Hons (Eng), MA (Eng), TEFL
22 Strydom Street
Baillie Park, 2531
Tel 082 821 3083
cumlaudelanguage@gmail.com

DECLARATION OF LANGUAGE EDITING

I, Christina Maria Etrecia Terblanche, hereby declare that I edited the research study titled:

The relationship between mental healthcare users' medication adherence and the nursing presence of registered nurses in primary healthcare

for **Lillian Kalimashe** for the purpose of submission as a postgraduate research study. Changes were indicated in track changes and implementation was left to the author.

Regards,

CME Terblanche

Cum Laude Language Practitioners (CC)

South African Translators Institute accr nr: 1001066

Full member of the Professional Editors Guild

1

ANNEXURE O: TURNITIN RECEIPT

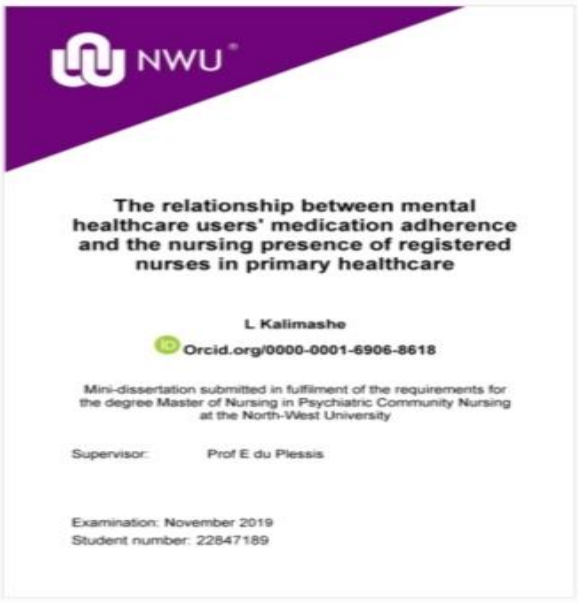
turnitin

Digital Receipt

This receipt acknowledges that Turnitin received your paper. Below you will find the receipt information regarding your submission.

The first page of your submissions is displayed below.

Submission author:	EMMERENTIA DU PLESSIS
Assignment title:	Turn it in
Submission title:	10962689:Lillian_Kalimashe-_Disse...
File name:	bb53adfb01eb_Lillian_Kalimashe-_D..
File size:	591.21K
Page count:	107
Word count:	39,764
Character count:	220,238
Submission date:	22-Nov-2019 09:30AM (UTC+0200)
Submission ID:	1219353168



NWU

The relationship between mental healthcare users' medication adherence and the nursing presence of registered nurses in primary healthcare

L Kalimashe

Orcid.org/0000-0001-6906-8618

Mini-dissertation submitted in fulfilment of the requirements for the degree Master of Nursing in Psychiatric Community Nursing at the North-West University

Supervisor: Prof E du Plessis

Examination: November 2019
Student number: 22847189