CHARACTERISTICS OF PATIENTS WITH RECURRENT INVOLUNTARY ADMISSIONS FOR SEVENTY-TWO HOUR ASSESSMENT AT KIMBERLEY HOSPITAL COMPLEX, NORTHERN CAPE PROVINCE, REPUBLIC OF SOUTH AFRICA

Dr Godwin Marufu

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by

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at the

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Biostatistician: Mr. F.C. van Rooyen

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DECLARATION

I declare that the dissertation hereby submitted is my own independent work and has not previously been submitted by me for the purpose of a qualification at this or another institution of higher learning.

I furthermore cede copyright of this dissertation in favour of the University of the Free State.

GMarufu

_____   30 April 2019

Signature   Date

DEDICATIONS

- To my wife and study-buddy, Tariro.

  This is the final walk. Thank you for being there through it all, and for being the fore-runner, showing that any dream is achievable, and for the loving care and support.

- My two boys, Munya and Sam.

  Now the attention is back to you. Finally!

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  If I have stood tall and seen far, it is because I was standing on a giant's shoulders. Thanks for the support, the perseverance, and the patience.

- And to our Biostatistician Mr Cornell van Rooyen,

  Dankie pa. You did it, on point, on time. I am grateful.

- Dr Hamid Saeed at Kimberley Hospital,

  You planted the seed, now it has matured, salute. You introduced me to Family Medicine as a Medical specialty.

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LIST OF ABBREVIATIONS

ANOVA	-	Analysis of Variance
ARVs	-	Anti-retrovirals
FCFP	-	Fellow of the College of Family Physicians
HIV	-	Human Immunodeficiency Virus
HSREC	-	Health Sciences Research and Ethics Committee
KHC	-	Kimberley Hospital Complex
MHCA	-	Mental Health Care Act
MHCU	-	Mental Health Care User
RBHS	-	Record Based Hospital Studies
RMSH	-	Robert Mangaliso Sobukwe Hospital
SSW	-	Short Stay Ward
WESH	-	West End Specialist Hospital/ West End Hospital
UFS	-	University of the Free State
ZAR	-	South African Rand

ABSTRACT

Introduction: Mental illness is common throughout the world, yet the true prevalence is underestimated. Forty-three percent (43%) of all psychiatric admissions in South Africa are involuntary, with a cyclical rise in re-admission rates, referred to as the **revolving door syndrome**. There was a need to unravel this syndrome, and help identify early, those patients at high risk of it, so that appropriate interventions are implemented to optimise psychiatric care and stem this system failure.

Aim: The study aimed to quantify the frequency of re-admissions and recurrent re-admissions and describe the demographic characteristics, social support systems, and clinical characteristics of patients admitted for involuntary seventy-two-hour observation at the Kimberley Hospital Complex, Department of Family Medicine in the Northern Cape Province of South Africa.

Method: This was a retrospective, hospital records- based cohort study, of **all** qualifying 1142 consecutive, involuntary admission episodes, from 614 patients at Kimberley Hospital from 01 January 2016 to 31 December 2017. There was a purposeful, non-random participant selection.

Results: Fifty-four percent of the participants were admitted only once during the study period (n=614; 54%). The recurrent re-admission rate was two percent (n=28; 2%), with an average 6 admissions per each participant in the recurrent readmissions group, and the admissions ranging from five to sixteen (range 5 - 16). In between, the re-admissions decreased from a low risk rate of 32% (n=365) to high risk rate of 12% (n=135).

Conclusion: This study showed that recurrent re-admissions, also known as the revolving door syndrome, is as much a problem in the Northern Cape Province of South Africa as it is across the rest of the world. The participant at a high risk of re-admission was more likely to be male, Black, young, unemployed, single, abusing substances, coming from a low-income area, with a previous history of involuntary admission, with a diagnosis of Schizophrenia and/or substance-use psychiatric disorder, be on antipsychotic medication, and with a long in hospital stay. Being of Coloured ethnicity, was a particular risk factor for recurrent re-admissions.

Key Words: Involuntary admission; multiple recurrent re-admissions; post-discharge care; revolving door syndrome

1 INTRODUCTION

1.1 BACKGROUND

Mental illness is quite common throughout the world, yet, for a variety of reasons, the true prevalence is underestimated[1]. Access to mental health care is defined by the following five categories/ levels.[1]

Level one consists of the "normal" people in the community, who live and conduct their usual daily duties, but live with undiagnosed mental health problems.[1-2]

Level two consists of people with unidentified /undiagnosed mental health problems, who are attending primary health care facilities for non-mental health issues.[1-2]

Level three consists of people with known mental health problems, which were identified by the health services system, (usually diagnosed by general medical practitioners).[1-2]

Level four comprises of people/ patients receiving ongoing mental health care at psychiatric out-patient departments.[1-2]

Level five involves ill patients admitted to specialist psychiatric hospitals.[1-2]

The South African Stress and Health study, the first national South African epidemiological survey of common mental disorders locally, found that only a quarter of South Africans with a mental illness had sought and obtained some form of mental health treatment.[3] Three quarters of the sufferers fell therefore into level one and two, the undiagnosed unwell.[3]

In most resource limited settings, such as in the primary care clinics in the Northern Cape Province of South Africa, the gate keepers and filters of primary health care diagnosis are the Primary Care Nurse practitioners. Gate-keeping, however, results in a serious lack of proper utilization of outpatient mental health care services, and especially so in the Northern Cape Province.[3]

West End Specialist Hospital in the Northern Cape Province of South Africa is the apex/tertiary mental institute caring for Mental Health Care Users, which should be the smallest proportion in terms of levels of access to care described above.[1-2] After variable lengths of stay in hospital, the discharged patients, who would have undergone some form of mental and functional rehabilitation while in the psychiatric hospital, are discharged home for ongoing community-based psychosocial rehabilitation, which is aimed at facilitating the return to optimum functioning and independence of the ill and disabled people in their own communities.[1-2]

However, there is a dire shortage of psychiatric beds in the Northern Cape province of South Africa.[3] According to Statistics South Africa, the Northern Cape has a total population of one million, one hundred and eighty-five

thousand, six hundred (1 185 600) people, and Kimberley has a population of two hundred and twenty-five thousand, one hundred and fifty-five (225 155) people.[4]

Yet, there are only 14 public sector hospital beds per one hundred thousand (14 per 100 000) population reserved for psychiatric patients, compared to forty-eight (48) per 100 000 nationally, and 104 per 100 000 in the United Kingdom.[4]

Kimberley Hospital Complex, the only tertiary hospital in the province, and its associated, recently redesignated West End Specialist Hospital, are the only institutions in the Northern Cape which have the capacity for the management of psychiatric conditions and are staffed with mental health trained staff.[5]

However, West End Specialist Hospital can only admit 108 patients, males and females inclusive, in the acute and chronic wards. There are no beds reserved for children and adolescents. All the other lower level hospitals are supposed to and do admit patients for involuntary observation, and then refer to the West End hospital upon completion of the observation period, if further psychiatric care is needed.[5]

Deinstitutionalization, one of the pillars of the primary health care model adopted by the post-apartheid South African government after 1994, emphasises the maintenance of a delicate balance between hospital and community-based care, with a sufficient number of psychiatric beds retained for those that cannot be cared for at community level.[6-7]

Researchers have also noted how families tend to subsequently neglect their mentally ill relatives.[8] It has been noted that families in South Africa preferred hospital over community care, possibly due to the perceived toll the burden of caring for the mentally ill could have on the family. A study found that family members were sometimes forced to give up their own employment so that they could care for mentally ill relatives, unfortunately with consequential loss of income for them.[8]

Urbanization has negatively impacted on the traditional family care system, specifically on its ability to care for ill family members. Family members end up resorting to abusing the mentally ill individual's disability grant for purposes other than looking after the ill person.[6]

Forty-three percent (43%) of all psychiatric admissions to mental hospitals in South Africa are involuntary. These are patients who are acutely ill, requiring very close nursing care, and sometimes physical restraints.[12]

It is a statutory requirement,[9] through the Mental Health Care Act (2007), that all acutely ill mental health patients be admitted first for a period of up to seventy-two hours in a non-psychiatric ward so that they are evaluated for the cause of the mental health abnormalities, have organic illness excluded, and be started on treatment, if necessary, under closely monitored conditions.[9]

The patients can be admitted as voluntary patients if they have insight into their illness and consent to the admission, or as involuntary patients if they are

considered a danger to themselves or others and are not willing or incapable of willingly agreeing to hospital admission.[9]

The only eighteen (18) beds allocated for involuntary admissions at the Department of Family Medicine at Kimberley Hospital Complex, are always full[10] and there is almost always no space for new admissions. In this full bed capacity scenario, patients are then kept at the Emergency Centre for more than seventy-two (72) hours, with avoidable and negative consequences like occupational injury to staff, damage to hospital property, negative perception of health care by the community, and patients absconding from the involuntary care.[10]

Patients who would have completed their statutory 72-hour observation period but still need ongoing psychiatric care, are then transferred for such care to West End Specialist Hospital.[11]

West End Specialist Hospital is also almost always full.[5] It has an annual bed occupancy of ninety- four percent (94%). The average duration of hospital stay for a single patient being one hundred and forty-one days (141), at a cost of R1 120.00 per day.[5]

This introduces cost and logistical impediments to the required prolonged in-patient hospitalization needed for the effective rehabilitation of the psychiatric patient.[5] Patients are as a result discharged prematurely, before they are fully rehabilitated to fit back into the community.[5] Predictably, the patients only stay

in the community for very short periods of time before they are brought back to the hospital with the same symptoms as at the previous admission. This results in multiple recurrent readmissions, which constitute the revolving door syndrome discussed further in the literature review.

This study aimed to unravel this revolving door syndrome. The results of this study may be used to help with early identification of those patients who are prone to multiple recurrent readmissions, and health care planners may then study and implement interventions to keep and manage those patients with recurrent readmissions for involuntary psychiatric care effectively, out of the acute hospital setting.

Why do some patients get admitted so frequently? Who are these patients who get multiple involuntary admissions, and what makes them vulnerable for such recurrent admissions?

These questions were the subject of this study, in order that ways may be found to reduce the readmission load and alleviate the pressure this imposes on the admitting facilities. The questions were asked from the perspective of the health care manager/planner, with the aim to improve quality of care for involuntary patients.

2 AIM

2.1 AIM

The study aimed to assess the frequency of recurrent readmissions, and identify the factors associated with these recurrent readmissions for involuntary psychiatric observations at Kimberley Hospital, Northern Cape Province, South Africa.

2.2 OBJECTIVES

1. To calculate the readmission, and multiple recurrent readmission rates of patients admitted for involuntary psychiatric observations at Kimberley Hospital Complex, Family Medicine Department, between 1 January 2016 and 31 December 2017.

2. To identify and describe the demographic, social (support) and clinical characteristics of patients admitted and readmitted for involuntary psychiatric observations at Kimberley Hospital Complex, Northern Cape Province, Republic of South Africa.

2.3 KEY WORDS

Involuntary admission; multiple recurrent re-admissions; post-discharge care; revolving door syndrome

3 LITERATURE REVIEW

The cyclical and unending rise in the readmission rates of psychiatric patients to hospitals for repeated involuntary admission is referred to as the **revolving door syndrome**[13]. Though this was an old psychiatric literature concept, it was regarded not only as a problem, but also as a failure of the in-hospital management of psychiatric patients. Recent literature and practice has however replaced the term "revolving door syndrome" with "recurrent readmissions".[13]

Recurrent psychiatric admissions have been arbitrarily defined and studied. This despite them being regarded as one of the main indicators of quality of psychiatric care. The first standardised definition of recurrent psychiatric readmissions was used in 1978 by George Voineskos, MD, and Sharon Denault, BA[13].

They defined **recurrent psychiatric readmissions** as "five (5) or more admissions during the two-year period preceding the latest hospitalization".[13]

Their argument supporting this definition was that, in addition to trying to reduce the readmission rates, psychiatric facilities should examine the characteristics of those patients who are hospitalised recurrently, and use the findings to develop programs that could improve the integration of these individuals back into their local communities.[13]

In a retrospective study of 2 200 involuntary psychiatric admissions and readmissions,[14] Sanguinetti et al described the profile of a patient with a heightened risk of hospital readmissions in the North American setting as being a young, unmarried, male, of African-American descent, who had a diagnosis of schizophrenia, but no comorbid psychoactive substance abuse.[14] An effect size analysis of their data found two factors that had the greatest association with the likelihood of readmissions. These were, "a diagnosis of schizophrenia, and marital status." The impact on readmissions of substance abuse in this study was only modest.[14]

Hustolf K and colleagues, studied the predictors of involuntary hospitalizations to acute psychiatric care in Norway. They identified the following characteristics to be significant predictors of involuntary hospitalizations: "a history of contact with the police, patient referral by physicians who did not know the patient, contact with health care services within the previous forty-eight hours, not living in an own apartment, high scores for aggression, level of hallucinations and delusions, contact with an out of office clinic within the previous 48-hours, and a low Global Assessment of Function Score".[15]

Patients for involuntary admission were more likely to be "older, non-Norwegian, males, unmarried, with a lower level of education, who were receiving a disability pension, were admitted to hospital during the evenings or nights, frequently abused substances, were not responsible for any children, were less frequently motivated for admission, and had less frequent contact with psychiatric services".[15]

These factors were also similarly corroborated by other researchers.[16]

A bed shortage, arising from **reductions** in the number of mental health beds, especially for long stay or rehabilitation purposes, was hypothesized by Patrick Keown as the explanation for the increase in involuntary admissions. So too was the secular increase in the use of all forms of illicit drugs, and alcohol.[17]

A case control study of factors associated with multiple psychiatric readmissions in Brazil,[18] revealed two factors that are important for health managers to consider. Firstly, individuals who had been referred to community psychosocial support groups after their most recent discharge had about twenty percent lower odds of readmissions than those referred to usual outpatient care; and secondly, those patients who lived closer to the hospital, in the same city, were more likely to have multiple readmissions.[18]

From the researcher's observations and conversations with other mental health care workers,[19] there is a chronic shortage of essential psychiatric medications at the primary care clinics in the Northern Cape. This shortage affects all the five classes of medications, namely antipsychotics, antidepressants, mood stabilizers, anxiolytics, and anti-epileptics.[19] As a result, a patient discharged for ambulatory care with a month's supply of medication from the tertiary hospital would end up with no medication when this take-home supply was finished, as the clinics could not resupply the same medication due to stock shortages.[19]

However, hospital and health-care management could introduce strategies to reduce Psychiatric admissions and readmissions.[20] Readmissions were both subjectively and objectively costly and disruptive to individuals, families, and mental health care institutions, and could lead "both providers and patients to feel demoralized or have a sense of failure".[20]

In yet another study, readmissions were noted to be a reflection of severity of psychiatric illness, ineffective in-patient care, lack of adherence with out-patient care, unemployment, and unfavourable residential status.[21]

Factors key to decreasing the likelihood of recurrent psychiatric hospitalizations included "rendering sufficient in-patient care to address adequately the acute presenting problem and stabilize the patient's psychiatric status, ensuring an adequate discharge plan and delivery of sufficient support services to transition psychiatric care successfully from an in-patient to an outpatient setting, such as a thorough discharge plan, follow up calls, short term case management, bridging visits, psychoeducation, and continuing adequate outpatient services to allow the individuals to remain in the community".[22]

This current study was a Hospital-records review study, also known as a retrospective chart review study. Hospital records review studies are **observational**, and **retrospective**.[23] They use self–controls to address the potential bias caused by unmeasured confounders.[23]

In retrospective chart review studies, pre-recorded routine patient- care data are used to answer one or more research questions.[24] Valuable information may be collected from the study results that may be used to direct subsequent prospective studies.[24,25]

In hospital records review studies such as this one, measures of association are used to assess how phenomena are related to one another.[26] However, this functionality was not one of the objectives of this study (which was strictly a descriptive study), but could form a useful offshoot/ sub study. Correlation coefficients are used to assess the strengths of the relationships. There are many types of such coefficients, and the proper choice of which to use depends on the nature of the data, data level (nominal/ ordinal/ interval/ or ratio), and the underlying distribution. Such questions of comparison may seek to establish a cause-effect relationship, where feasible.[26]

According to Kyougami, there are three types of errors which may commonly affect the validity of a hospital- records review study.[23] In no specific order, these are chance (random error; sampling error), bias (systematic errors; inaccuracies in data and responses), and confounding (imbalances in other factors that affect both the study factor and the outcomes of interest).[23]

Random error, which is an error that applies to the measurement of an exposure or outcome, is difficult to deal with after data collection, or when using data collected for other purposes, such as hospital records reviews. It may

result in deviation of results and inferences from the truth, as a result of the operation of chance alone.[23]

Bias, which is a systematic error caused by the investigator or study subjects, results in under, or over-estimation, of the association between readmissions and the various study factors.[23] Examples of bias encountered in this study included loss of patient records, which was adjusted for by censoring, and greater likelihood of successful retrieval of records of those patients with more frequent visits for admission.[23]

Strategies to reduce confounding were incorporated in the design because this research used data that was originally collected for routine patient care, and not all the relevant information was available for analysis.[23] During the protocol design phase, a restrictive inclusion and exclusion criteria was used, so that only patients who had all the required mental health care forms and records completed at admission were included.

Below is a further description of sources of error that were expected to be encountered in the study, and for similar studies, by Kaji et al,[27] and Gilbert et al.[28] The sources of error in chart review studies included the following:

- Chart review inappropriate for study question. This was limited for this study by establishing from the outset whether necessary information was available in the charts and establishing if there were sufficient charts to perform the analysis with adequate precision.[27-28]

- Investigator conflict of interest or bias. The investigators for this study all declared no conflict of interest, and provided evidence of institutional review board approval, and submitted the data collection tool, as well as the coding rules and definitions, as an appendix.[27-28]

- Patient sample is non-representative. Case selection or exclusion was done by the researchers using explicit inclusion and exclusion criteria, defined prior to study commencement, and the researcher provided a step by step description of how the study sample was derived from the hospital records.[27-28]

- Needed variables are not in the records. The protocol for this study clearly defined the outcome and predictor variables to be collected at the protocol design stage, and designed and made available a clear coding system, provided as an appendix to the protocol.[27-28]

- Misclassification bias from chart abstraction which is not systematic. The Investigators for this study provided a clear definition of variables, designed and utilised an approved standard data abstraction form, and assessed the utility of the abstraction form through a pilot study involving six patient records.[27-28]

- Unreliable chart abstraction. It is recommended that second reviewer should get a random sample of the hospital records and re-abstract them, being blinded to the information collected by the first abstractor for quality control purposes. This should be included with an appropriate statistic to measure correlation of the abstracted data, such as a kappa-coefficient, or other measures of agreement such as ANOVA[27-28]. This was not done for this study as it was conducted primarily for academic

purposes in fulfilment of Fellowship of the College of Family Physicians (South Africa) and University of Free State M Med Family Medicine requirements, with a very limited student budget.

4 METHODOLOGY

4.1 STUDY DESIGN

This study was a retrospective, hospital records- based study, of a cohort of 614 patients admitted for involuntary psychiatric observations at the Kimberley Hospital (now renamed to Robert Mangaliso Sobukwe Hospital since October 2018), Northern Cape Province, Republic of South Africa, from 01 January 2016 to 31 December 2017.

4.2 SETTING

The study setting was the Short stay ward (SSW), Department of Family Medicine, Kimberley Hospital Complex. This is a ward with sixteen (16) beds for both male, female, and Paediatrics patients, open plan, with no partitioning, except for the bathrooms. The ward is manned by one (1) Mental Health care trained nurse, supported by a staff nurse and a nurse aid, and at least two security personnel on any shift.

This setting was later changed middle of 2018, with males and females now housed in separate wards.

4.2.1 Routine Patient Care and Procedures

Medical Practitioners from the Department of Family Medicine, consisting mostly of Community Service doctors, assess the patients daily, including a mental status examination, a physical examination to exclude and/ or identify medical conditions that may explain the mental symptoms, perform laboratory and imaging studies as necessary to aid the clinical diagnosis, and initiate or adjust either psychotropic or other medication as required for each patient.

There is a standard panel of tests mandatory for each patient so admitted, to exclude common medical conditions with known psychiatric manifestations, such as encephalitis from HIV and other infestations. They also complete, and submit all mandatory regulatory forms to the Head of the Institution at Kimberley Hospital, then for onward transmission to the Northern Cape Mental Health Review Board. Copies of these forms are included in Appendix D for illustrative purposes only.

4.3 STUDY OUTCOME

The study aimed to quantify the occurrence of re-admissions and recurrent readmissions and describe the demographic characteristics, social support systems, and clinical characteristics of patients admitted for involuntary seventy-two-hour observation at the Kimberley Hospital Complex, Department of Family Medicine.

4.4   STUDY FACTORS

These included a mixture of demographic, support system, and clinical/ medical factors, as listed on the data collection tool in appendix A, and summarized below.

Patient Demographic factors studied were:

- Age;
- Gender;
- Race;
- Suburb and Town of residence.

Support systems included the under-listed:

- Marital status;
- Whether the patient owned the house they lived in;
- Highest level of education attained;
- Employment status;
- Whether the patient received any disability grant;
- Who referred the patient to the hospital;
- Who did the patient normally stay with?

Medical and Clinical variables studied were:

- Whether the patient had been previously admitted for involuntary observation;

- Reason for referral for admission on this hospital visit (on form 04);

- Length of stay in the Short Stay Ward on this admission;

- Admitting diagnosis on this episode (on form 05/07);

- Outcome of this admission;

- Whether patient was on any Psychiatric Medication prior to this admission;

- Use of other non-psychiatric medication prior to this admission;

- Comorbid psychoactive substance use;

- Any pre-existing comorbid illnesses;

- Any previous psychiatric diagnoses?

- Where the patient was getting care and medication for their psychiatric diagnosis prior to this admission;

- Patient's HIV status, and if HIV positive, whether on ARVs or not;

- Whether there were any abnormal lab results on this admission;

- The discharge diagnosis on leaving short stay ward on this visit (on forms 06/08/11);

- Any follow up plan on discharge.

4.5 INFORMED CONSENT AND ETHICAL APPROVAL

Consent was sought and obtained from the following institutions:

- Robert Mangaliso Sobukwe Hospital Ethics Review committee (08/08/2018);

- The Northern Cape Department of Health Study Review Committee (NC_201807_001);

- HSREC of the University of the Free State (UFS-HSD2018/0556).

There was no need to seek individual informed consent from the study participants, as this was a retrospective hospital records based study (no actual contact with any participant), and patient names or street addresses or telephone numbers were not used or recorded. The only identifier that was used temporarily was the hospital folder number, to link/ delink hospital readmissions, but this did not form part of the data analysed in this study.

4.5.1   Confidentiality of data

All the data obtained from patients' chart notes was maintained strictly per data and document safety agreements in Good Clinical Practice in research involving Human participants by the researcher, who solely handled and abstracted information from the hospital chart notes onto the data collection sheet. Study material was kept under lock and key in a filing cabinet at the Researcher's residence. Patients' chart notes were not taken out of the hospital premises. Editing of chart notes was not allowed, to maintain the integrity of the hospital records as source documents.

4.6   SAMPLING

4.6.1   Reference population

The reference population consisted of all patients admitted to Kimberley hospital for involuntary psychiatric observations.

4.6.2   Selection of Study Subjects

There was a purposeful, non-random participant selection, with **all** one thousand one hundred and forty-two (1142) consecutive, involuntary hospital admissions from 1 January 2016 to 31 December 2017, with complete hospital records, enrolled in the study and analysed.

4.6.3   Inclusion criteria

   i.   Admission between 1 January 2016 and 31 December 2017;
   ii.   Hospital records contained mandatory regulatory MHCA forms;
   iii. Patient admitted for involuntary observation;
   iv.   Verifiable and valid hospital folder number on the chart notes;
   v.   Hospital notes that could be accessed from the Kimberley Hospital records section.

4.6.4   Exclusion criteria

   i.   Charts with incomplete or missing MHCA forms;
   ii.   Admission for assisted or voluntary care;

iii.   Invalid or unverifiable hospital folder number.

4.6.5   Sampling strategy and Sample size

It was assumed that the number of admissions during the 24-month duration of the study would be, with an average of two admissions per day, roughly one thousand three hundred (1300) admission episodes (not head count). This translated to approximately two hundred and fifty (250) individual patients, based on an ad hoc observation from working in the 72-hour observation unit, that in any two-year period, any one patient would have been readmitted approximately five times.

No specific sample size calculation was performed for this study. **All admissions** during the study period that met the inclusion criteria were analysed. One thousand and twenty-nine (1029) folder numbers were identified from the admissions register at the Short stay ward for the study period. Of these only 614 folders met the inclusion criteria as stated previously and 471 were rejected.

Reasons for exclusion from study:

I.	Incomplete folders/ missing pages	n=242	51.38%
II.	Age less than 18 years	n=8	1.69%
III.	Admission NOT for involuntary observations	n=145	30.79%
IV.	Hospital folder number duplication	n=76	16.14%
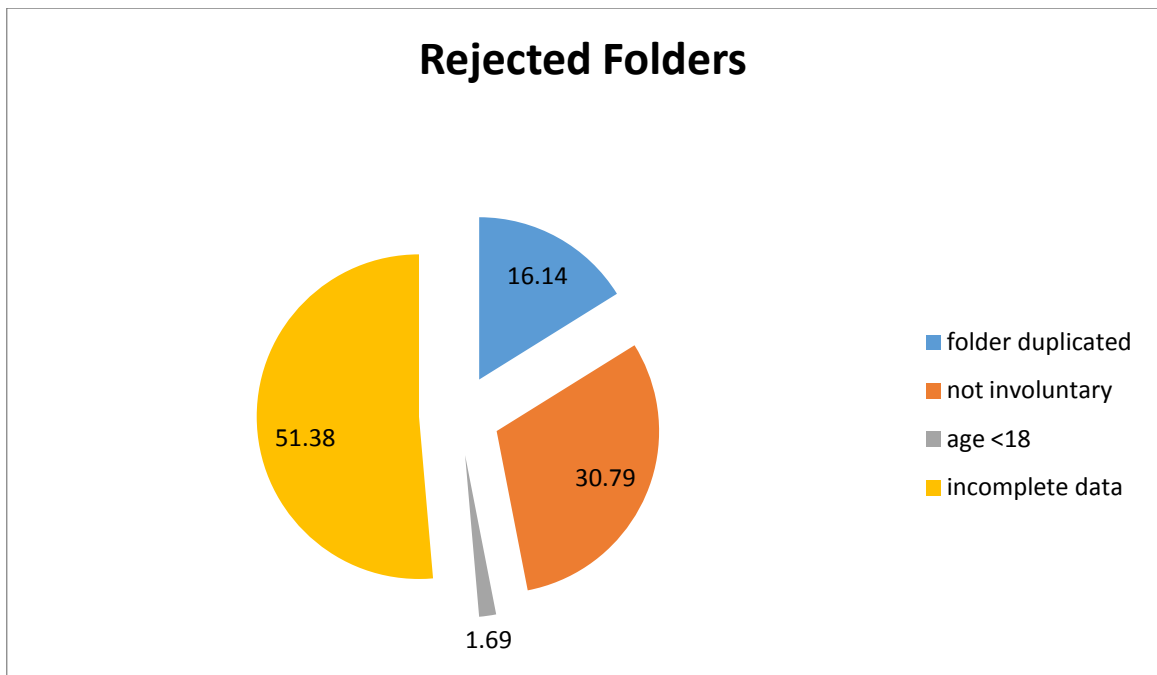
Figure 4.1: Reasons for folder rejection

As discussed elsewhere, this high rejection rate of 45.77% could have introduced selection bias, especially given that those with readmissions were more likely to have complete records compared with those with single admissions.

There were one thousand one hundred and forty-two (1142) admissions captured and analysed from six hundred and fourteen (n=614) enrolled folders/participants, with an average admission rate overall of 2 (1142/614) admissions per the two-year period.

4.7   RECORDS AND DATA MANAGEMENT

4.7.1   Routine handling of hospital admissions and patient records at Kimberley Hospital

All patients admitted to the study site (Kimberley Hospital Complex) for usual care, are routinely issued with a hospital folder number which should be permanent for the first and any subsequent visits to the Kimberley Hospital by that patient.   Patients are given a pink card bearing their name and this assigned folder number to carry with and bring every time they come to the hospital for treatment. When a patient comes to the hospital subsequently for healthcare purposes, the Data Clerks use the patients' name, or folder number, to pull out the previous hospital visit record folder, so that information is added into the same folder in a cumulative manner. Every subsequent visit, whether it be for admission or for day care, therefore, makes the folder thicker and thicker.

If the patient doesn't remember this number, the admissions clerk enters the patient's name and date of birth into the computerized records management system, and the folder number will come up, if the patient has been attended to previously at Kimberley Hospital.

When a patient is admitted in an emergency and they are too ill to give their name or folder number, they are issued with a temporary folder, which is then inserted into their original folder when their true identity is established. The hospital folder numbers are managed by an electronic based records system in a central data base, but the actual visit record folders are paper-based.

For the purposes of this study, the hospital numbers were only used when linking the hospital visits in order to pick up readmissions. Names and patient street addresses, and any other data that directly identified the patient, and was readily available on the hospital chart records, were not collected for the purposes of this study.

4.7.2   Linking hospital visits: admission or readmission

Data was abstracted about all the admissions during the study period. In keeping with the definitions and current practice in similar research done elsewhere, records from the end of the study period (December 2017) were pulled out first, and any latest admission during this period was classified as an index admission.

Then records going backwards to the beginning of the study period (January 2016) were pulled, and matched to the index admission by folder number, name and date of birth, or both. Any subsequent admission for the same patient was then recorded as a re-admission and recorded on the data sheet in a sequential manner (e.g. re-admission 1st/2nd/3rd/4th/5th…). This is the way similar retrospective studies cited in the literature review were done and is also in conformity with the definition of recurrent admissions used in this study and in literature.

4.8 CLASSIFICATION AND DEFINITION OF ADMISSIONS

For the purposes of this study, and to fulfil the expected utilisation of the study results discussed earlier, the following definitions were used:[13]

- <u>Admission</u> was defined as a single index admission for involuntary observation per 24 months.

- <u>Re-admission</u> was defined as any admission for involuntary psychiatric observation, other than, or in addition to, the index admission, within the 24-month study period.

- <u>Low-risk re-admissions</u> were defined as those patients with 1-2 readmissions per 24-month period.

- <u>High-risk re-admissions</u> were defined as those patients with three to four readmissions per 24-month period.

- <u>Recurrent re-admissions</u> were defined as those patients with five or more readmissions per 24-month period.

4.9 DATA COLLECTION

4.9.1 Study Initiation/Activation

Upon receiving full ethical and regulatory clearance as shown in the appended regulatory documentation, the study was activated on the 8th August 2018, when the first participant folders were collected as part of a pilot study.

4.9.2 Participant screening and enrolment

Data collection was done by the researcher, using the data collection tool shown in Appendix C.

The Researcher collected patient folder numbers of all patients admitted to the Short Stay Ward for seventy-two-hour observation from 01 January 2016 to 31 December 2017 from the admissions register in the Short Stay Ward.

The Researcher then asked a designated Data Clerk normally working at Hospital Records, Casualty Section, to collect all identified folders from the Hospital Records room/archives during their spare time. This identified Clerk was reimbursed by the researcher a stipend of Two Rand (R2.00) per patient folder retrieved successfully, as this was work done outside their normal job description, and to encourage and ensure as near complete a record retrieval as possible.

The collected hospital records were then gleaned through, and those that met the inclusion criteria were enrolled into the study. A record was kept of those hospital records that were excluded, with an indication of why they were excluded.

The researcher then identified, collected all records belonging to an individual patient in reverse chronological order, and completed a data collection form for each admission with the same hospital number. This was repeated for all patient records that met the study criteria.

The original patient records were then returned to the hospital records room for usual storage.

The collected data was then sent electronically as a live excel datasheet managed by the Biostatistician at the University of the Free State, Bloemfontein, for quality control purposes and processing.

Table 4.1: Folder screening and enrolment

	Folders screened	%
Total screened	1029	100%
Total enrolled	614	59.67%
Total rejected	415	40.33%

4.10 LOGISTICS AND TIME SCHEDULE

4.10.1 Study Implementation plan

Once the protocol was finalized and all the regulatory and approval processes were completed, the actual data collection started slowly even though it involved information that was already there, most of it in some organized form already.

4.10.2 Complications

There were Fellowship of the College of Family Physicians (FCFP) and University (M.Med Family Medicine) exams that came and needed attention, and this significantly delayed the data collection process. Even though

Kimberley Hospital is an approved satellite-training centre for the University of the Free State and the Colleges of Medicine of South Africa, the leadership of the Family Medicine Department did not recognize the protected research time afforded other students to allow for focused research work.

4.10.3 Timeline

1.	Choose topic for study	04/2015
2.	Discuss and agree on topic with supervisor	06/2015
3.	Perform literature search	10/2015
4.	Discuss and agree with supervisor	03/2016
5.	Write up protocol	04/2018
6.	Discuss data analysis plan with Biostats Supervisor	02/2018
7.	Submit proposal for Ethical review at UFS	03/2018
8.	Submit proposal to Northern Cape Department of Health	06/2018
9.	Submit proposal to Kimberley Hospital Ethics Review Board	07/2018
10.	Collect data	08/2018
11.	Write up report	01/2019
12.	Submit final draft and finalized mini-dissertation	05/2019

4.11 STUDY BUDGET

The costs of performing the study were borne by the researcher. The filing cabinet was for keeping the study material/papers under lock and key, as

required for maintaining confidentiality, security of data, and the integrity of patient information.

ITEM	ACTUAL TOTAL COST (ZAR)
Telephone	500.00
Stationary	1000.00
Data Clerk stipend (R2.00 per folder x 1029 folders)	2058.00
Photocopying	500.00
Internet and Networking	1500.00
Transport (mileage and fuel)	1000.00
Filing cabinet (3 drawer)	1200.00
Workstation	1500.00
Typing and Printing	3500.00
Binding	900.00
Postage/Courier to UFS, Bloemfontein	250.00
Report back to Kimberley Hospital and Northern Cape stakeholders	300.00
TOTAL	14688.00

4.12 LIMITATIONS OF THE STUDY

4.12.1 Errors, Bias and Confounding affecting validity of study

There were three types of errors that affected the validity of this study. These were chance (random error; sampling error), bias (systematic errors; inaccuracies in data and responses), and confounding (imbalances in other factors that affect both the study factor and the outcomes of interest).[23]

i. **Random error:** One could not do much about it as data collection was done using data collected for other purposes, in this instance, routine hospital patient care. This type of error may have resulted in deviation of results and inferences from the truth, as a result of the operation of chance alone.[23] There was no sampling error encountered as all visits that met the inclusion criteria were enrolled.

ii. **Bias:** was adjusted for/minimized during the data analysis phase. Examples included loss of records, which was adjusted for by censoring, as shown in the methods section table 6.8.2, and a greater likelihood of successful retrieval of records of those participants with more frequent visits.[23]

iii. **Confounding:** The research used data that was originally collected for routine patient care, and not all the relevant information was available for analysis. During the protocol design phase, a restrictive inclusion and exclusion criteria was used, so that only patients who had all the required mental health care forms completed at admission were included.[23]

4.13 PILOT STUDY

After the approval of the study protocol by the relevant ethics review bodies, a pilot study consisting of six (6) random files was done. This was to test the ease of using the data collection tool, and to test if all information the study intended to collect was obtainable. There were no significant needed changes coming out of it that warranted to be communicated to the ethical review bodies before embarking on the main study.

5 RESULTS

Data was captured onto a Microsoft® Excel database (see appendix).

Descriptive statistics namely means and standard deviations, or medians and percentiles, were calculated for continuous data. Categorical variables were summarized by frequencies and percentages. An approved statistical plan was provided by the Biostatistician and is attached as an annex to the study report.

5.1 STUDY RESULTS

There were one thousand one hundred and forty-two (1142) admissions captured and analysed from six hundred and fourteen (n=614) enrolled folders/participants, with an average admission rate overall of 1.85 (1142/614) admissions per the two-year period.

Please note that the data given below is in two sets: per patient contact/admission episode (N=1142), and the data in parentheses represents per physical participant count (n=614). This is because some characteristics changed between visits, such as someone got divorced, lost their job, bought a house, applied for and received a disability grant, etc.

Table 5.1: Demographic and admission data

VARIABLE	N (n)	%	
Sex			
Male	778 (398)	68 (65)	
Female	364 (216)	32 (35)	
Age in years			
Minimum	18		Q1=24
Maximum	74		Q3=41
Median	31		
Race			
Black	600 (326)	53 (53)	
Coloured	502 (255)	44 (42)	
White	34 (28)	3 (5)	
Other	6 (5)	0.5 (0.8)	
Highest educational level attained			
Primary	441 (224)	39 (37)	
Secondary	624 (333)	55 (54)	
Tertiary	32 (29)	3 (5)	
Other	44 (27)	4 (4)	
Unknown	1 (1)	0.1 (0.2)	
Marital status			
Currently married	153 (86)	13 (14)	
Never married	924 (487)	81 (79)	
Divorced	39 (26)	3 (4)	
Widowed	26 (15)	2 (2)	
Income status			
Low income	1114 (592)	98 (96)	
High income	28 (22)	2 (4)	
Employment status			
Not employed	952 (494)	83 (80)	
Recent job loss	82 (49)	7 (8)	
Formally employed	91 (56)	8 (9)	
Informally employed	15 (13)	1 (2)	
Unknown	2 (2)	0.2 (0.3)	
Where do they live			
Urban town	1136 (608)	99 (99)	
Rural town	6 (6)	1 (1)	
House ownership			
Own their house	235 (141)	21 (23)	
Do not own the house they live in	906 (472)	79 (77)	
Unknown	1 (1)	0.1 (0.1)	
Disability Grant status			

Do not receive a grant	740 (338)	65 (55)
Receive a grant	393 (270)	34 (44)
Unknown	9 (6)	1 (1)

Who do they live with		
Alone	18 (11)	2 (2)
Parents	643 (318)	56 (52)
Spouse	176 (107)	15 (17)
Other	302 (175)	26 (29)
Unknown	3 (3)	1 (0)
Who referred/ brought them to hospital		
South African Police Service	320 (159)	28 (26)
Health Care Workers	67 (51)	6 (8)
Spouse	77 (45)	7 (7)
Colleague	142 (89)	12 (15)
Other	536 (270)	47 (44)
Previous involuntary admissions		
Yes	948 (427)	83 (70)
No	194 (187)	17 (30)

These results are further shown and described below.

5.1.1   Classification of Admission into Admission Category

Table 5.2: Admission category

Total admission episodes (N=1142)	n	Frequency
Participant folders enrolled	614	
Average visits per participant	2	
Recurrent readmissions	28	2%
Average admissions per recurrent group	6	Range 5-16 admissions
High risk admissions	135	12%
Low risk admissions	365	32%
Single admission only	614	54%

There were one thousand one hundred and forty-two (1142) eligible admissions

captured from six hundred and fourteen patients over the two-year study period.

Fifty-four percent of the participants were admitted only once during the study

period (n=614; 54%). The recurrent re-admission rate was two percent of all the admissions (n=28; 2%), with an average 6 admissions per each participant in the recurrent readmissions group, and the admissions ranging from five to sixteen (range 5 - 16). In between, the frequencies of admission decreased from low risk (n=365; 32%) to high risk (n=135; 12%).

5.1.2   Age of Participants

The ages of the participants ranged from 18 to 74 years. Since the age data was not normally distributed, a median age was calculated, which was 34 years. Half of the participants at admission were aged between 24 and 41 years old (Q1=24 years; Q3=41 years). The oldest participant was 74 years old at admission.

Table 5.3: Age distribution by admission category

Admission category	N (absolute number)	Median age (years)	Minimum age (years)	Maximum age (years)
Single admission	614	31	18	74
Low-risk readmission	365	30	18	66
High-risk readmission	135	32	18	66
Recurrent readmissions	28	31	24	58

5.1.2.1 Gender (of Participants) per admission

Over two-thirds of the admissions involved participants who were males. There were 778 male admissions and 364 female admissions, represented graphically by the pie chart below. Gender was in this study defined as the participant's sex at birth.
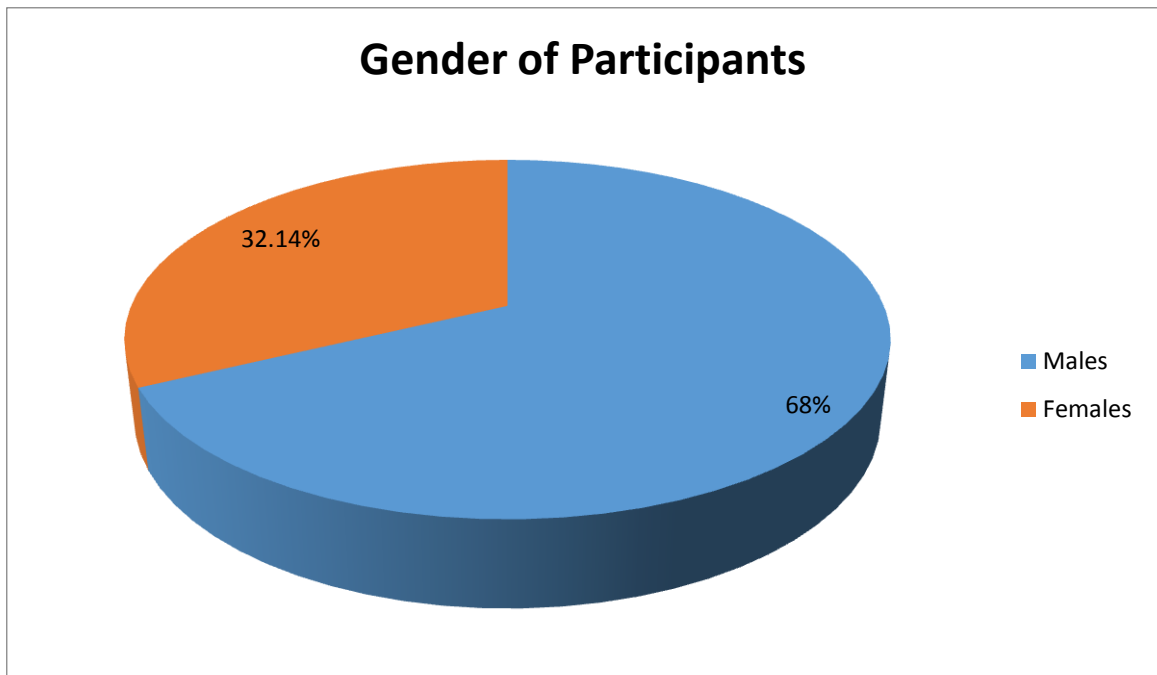
Figure 5.1: Gender of participants per admission

When admission category was analysed by gender, there were still more males than females across all four admission categories, as shown below.
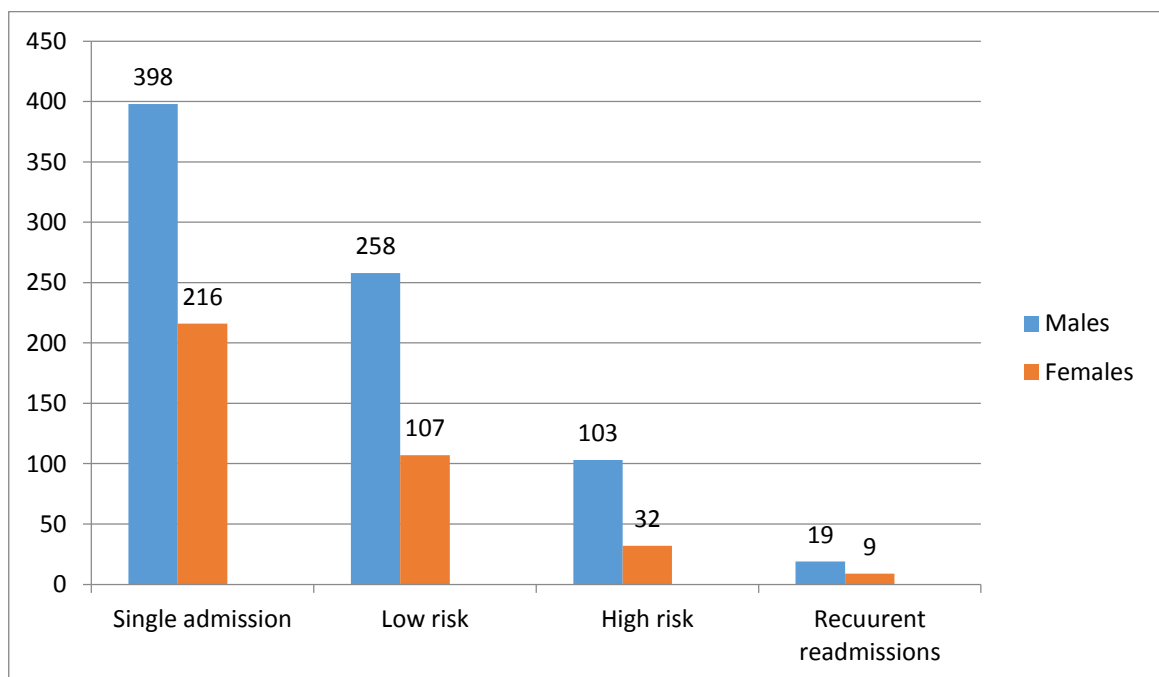
Figure 5.2: Admission category by gender

5.1.3 Participant Racial Distribution

5.1.3.1 Admission category by Race

This study admitted more Blacks than all the other races combined (n=326; 53%). This was followed by Coloureds (n=255; 42%), and Whites (n= 28; 5%).

There were more Blacks admitted for every category of admission except recurrent readmissions. Recurrent readmissions were more prevalent among the Coloured race (n=16/28) constituting 57%, followed closely by the Black race (n=12/28) with 43%. There were zero recurrent readmissions among whites, however. The admission category by race is shown on the table below.
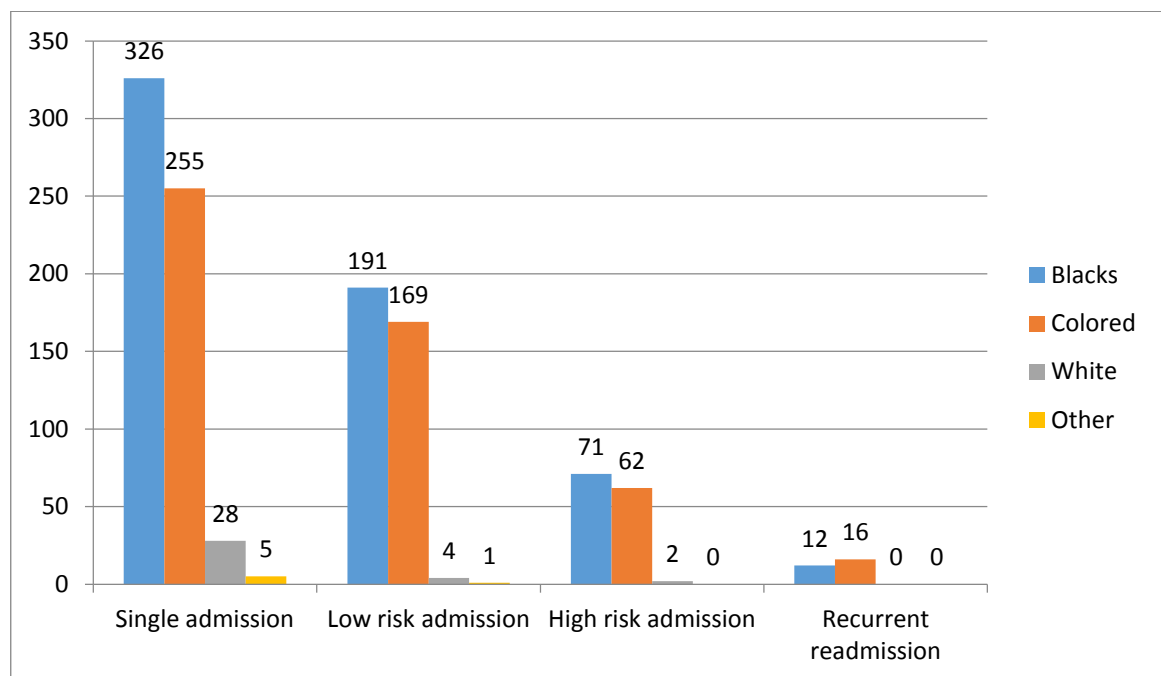
Figure 5.3: Admission category by Race

5.1.4   Level of income (as measured by suburb of residence)

Almost all admissions were from low-income (n=1114; 98%) urban towns (n=1136; 99.5%). There were no recurrent readmissions from high-income areas, while participants from small rural towns only had single admissions.

This is illustrated on the bar chart below.
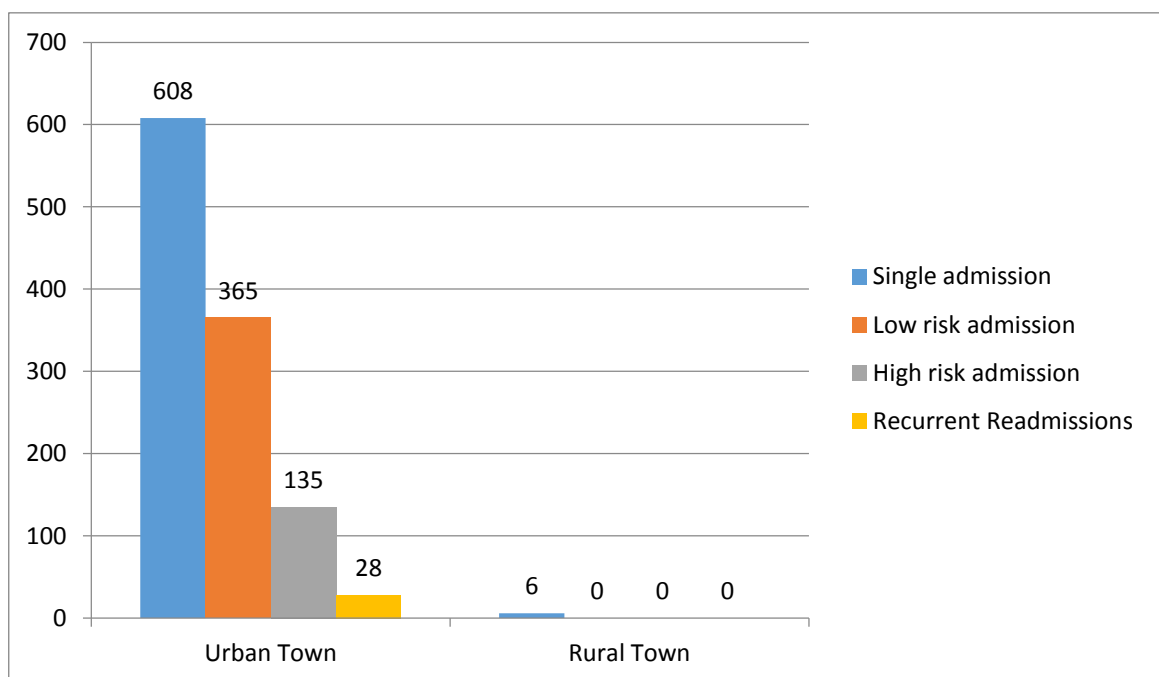
Figure 5.4: Where does the Participant Stay?

5.1.5   Marital Status per admission

The majority of admissions, over four-fifths of them, were never married. Of the 28 recurrent readmissions, eighty-two percent (n=23) were never married. The chart below shows the distribution of admissions by marital status.
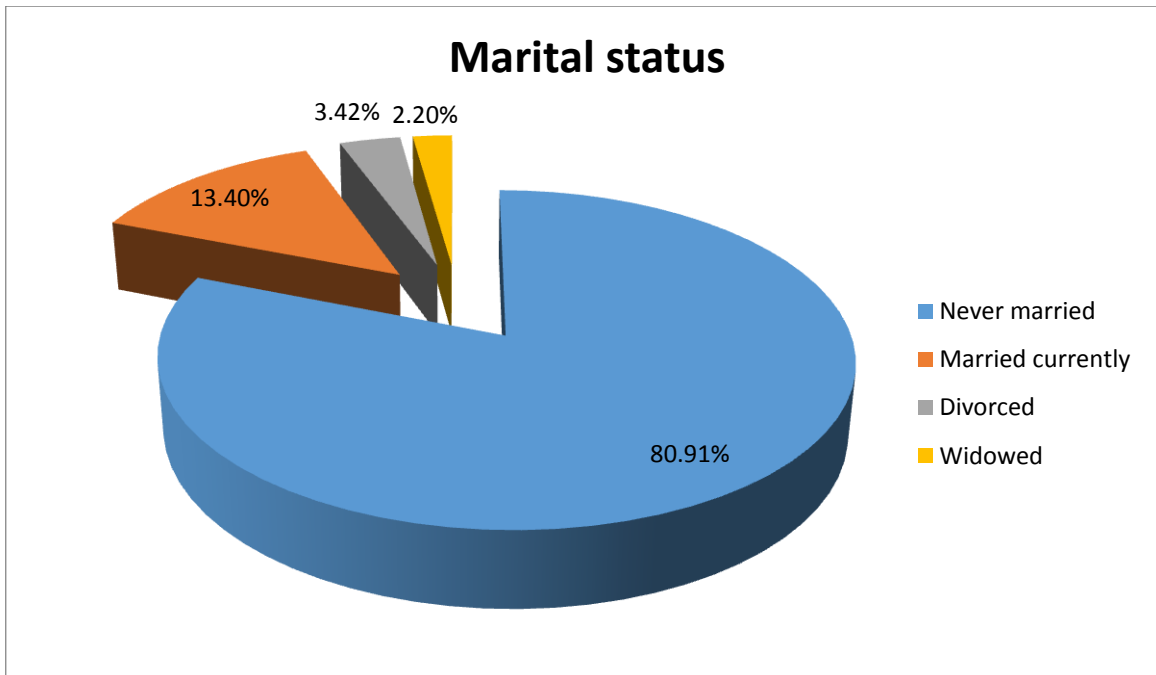
Figure 5.5: Marital status at admission

5.1.6 House ownership per admission

Of all the admissions studied, only a fifth owned the houses they lived in (n=235; 21%). The majority (n=906; 79%) did not own the houses they lived in. About eighty-four percent (84%) of those with a high risk of recurrent readmissions did not own the houses they lived in. Slightly over three-quarters of admissions classified as recurrent readmissions (n=22/28; 79%) were participants who did not own the houses they lived in.
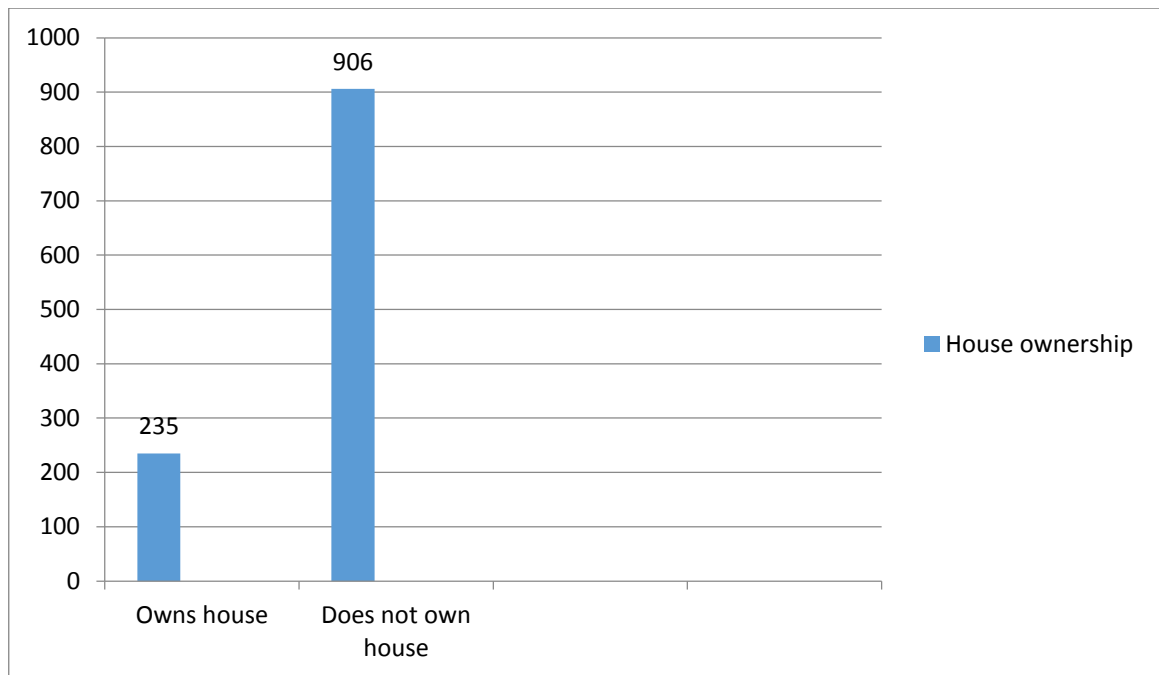
Figure 5.6: House ownership status

5.1.7   Educational level of participants per admission

Seventeen of the twenty-eight (61%) recurrent re-admissions only had primary school education.   However, well over half of all the admissions were of participants who had attained secondary level education (n=624; 55%).

The level of education of all admissions is shown if Fig 5.7:
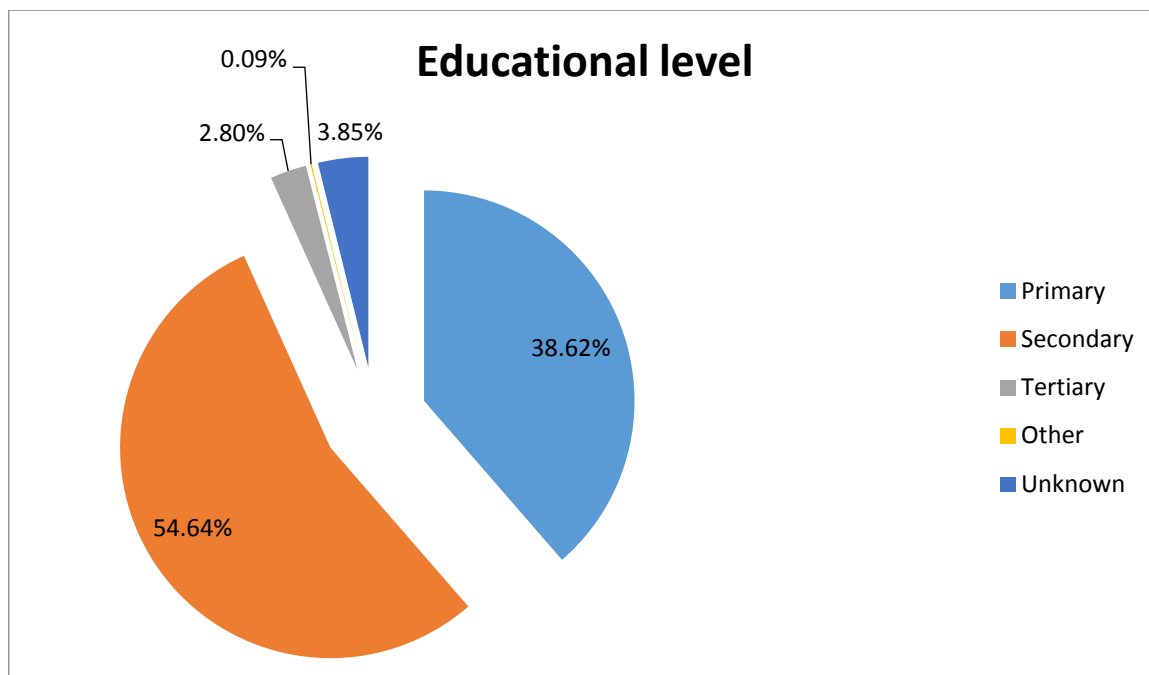
Figure 5.7: Highest level of education of the participants

5.1.8 Employment status of Participants per admission

Eighty-three percent (83.36%; n=952) of all the admissions were from study participants who were unemployed. Just over nine percent were employed either formally or informally, with a similar proportion having lost their jobs recently. Of those with recurrent re-admissions (n=28), just over three-quarters (78.57%; n=22) were unemployed, while eighty-seven percent of the high risk group were also unemployed.

Table 5.4: Employment status per admission

Employment status	N	Frequency
Not employed	952	83.4%
Recent job loss	82	7.2%
Formally employed	91	8.0%
Informally employed	15	1.3%
Unknown	2	0.1%

5.1.9 Grant status per admission

The majority of the admissions were study participants who were not grant recipients (65%; n=740).

Grant status
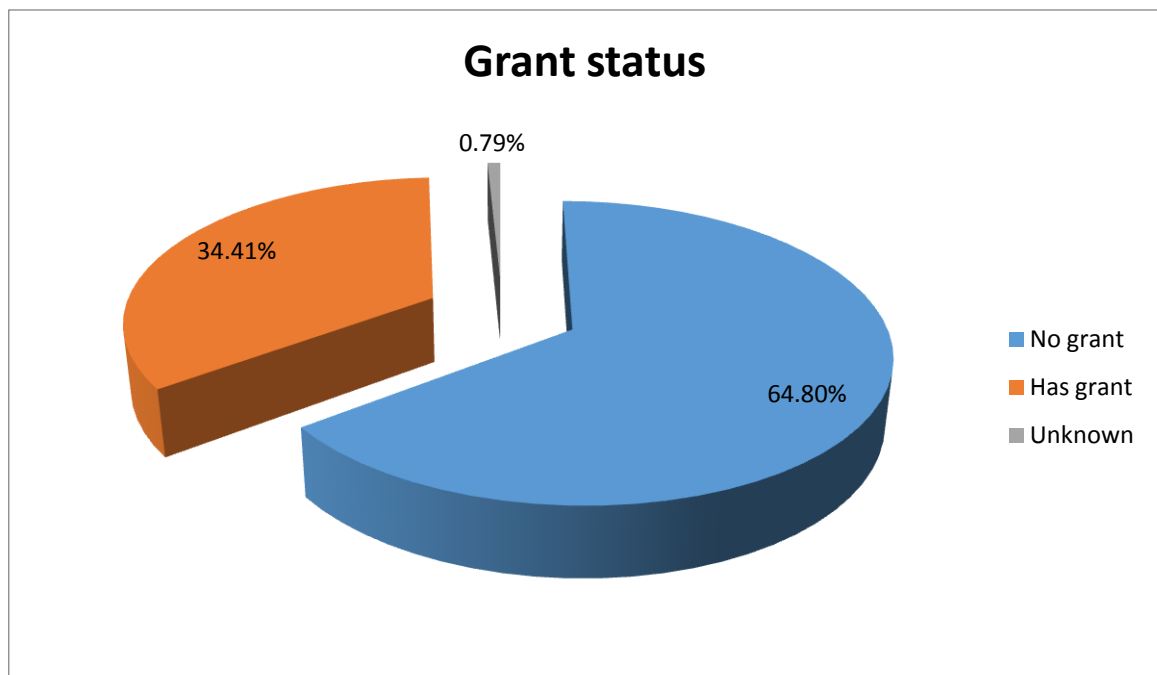
Figure 5.8: Does Participant receive Disability Grant?

5.1.10 Referral for 72-hour admission

This is depicted in the graph below. The category "Other" consisted mainly of parents or other relatives. The police brought in just under one third of the admissions to hospital for admission.
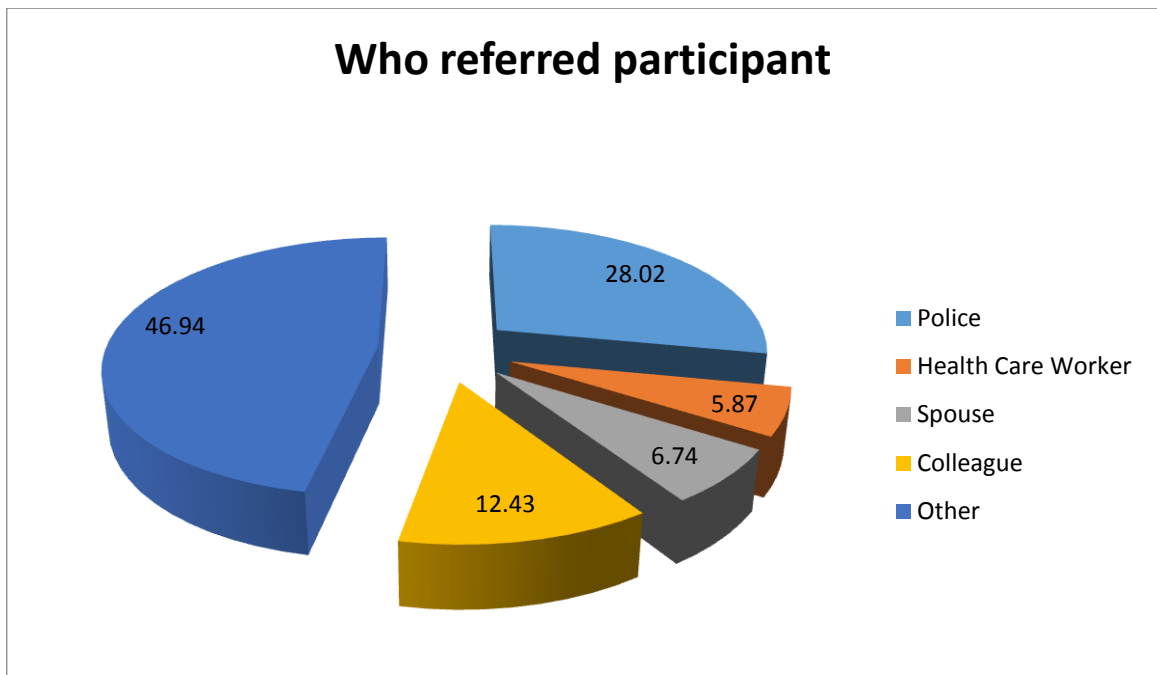
Figure 5.9: Who referred admission to hospital for involuntary admission?

5.1.11 Who does participant normally stay with

A slight majority (56%; n=643) admissions were clients staying with their parents. Only fifteen percent (n=176) stayed with their spouses. A very minute number stayed alone (n= 18; 2%).

The table below shows the distribution of the admission responses.

Table 5.5: Who stayed with the participant prior to this admission?

Who stayed with	Number of responses	Frequency (%)
Parents	643	56
Other	302	26
Spouse	176	15
Alone	18	2
Unknown	3	1

5.1.12 Does participant report previous admission for involuntary observation as measured per admission

A greater majority of the admissions were participants who reported at least one previous admission (83%; n=948) within the two-year study period.
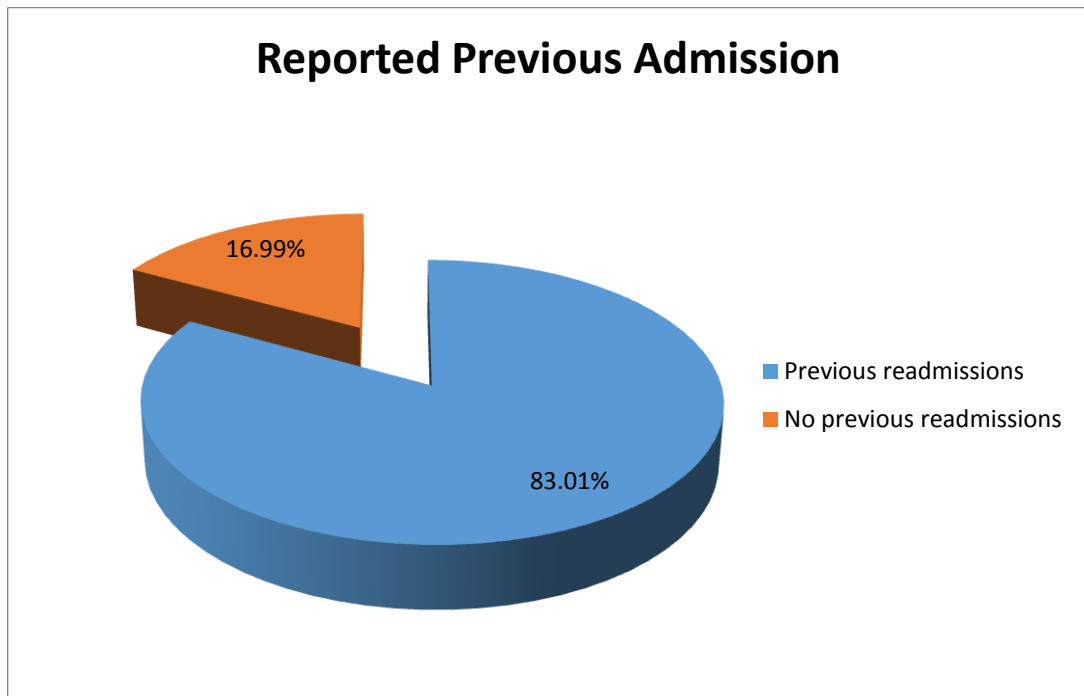
Figure 5.10: Reported previous admissions
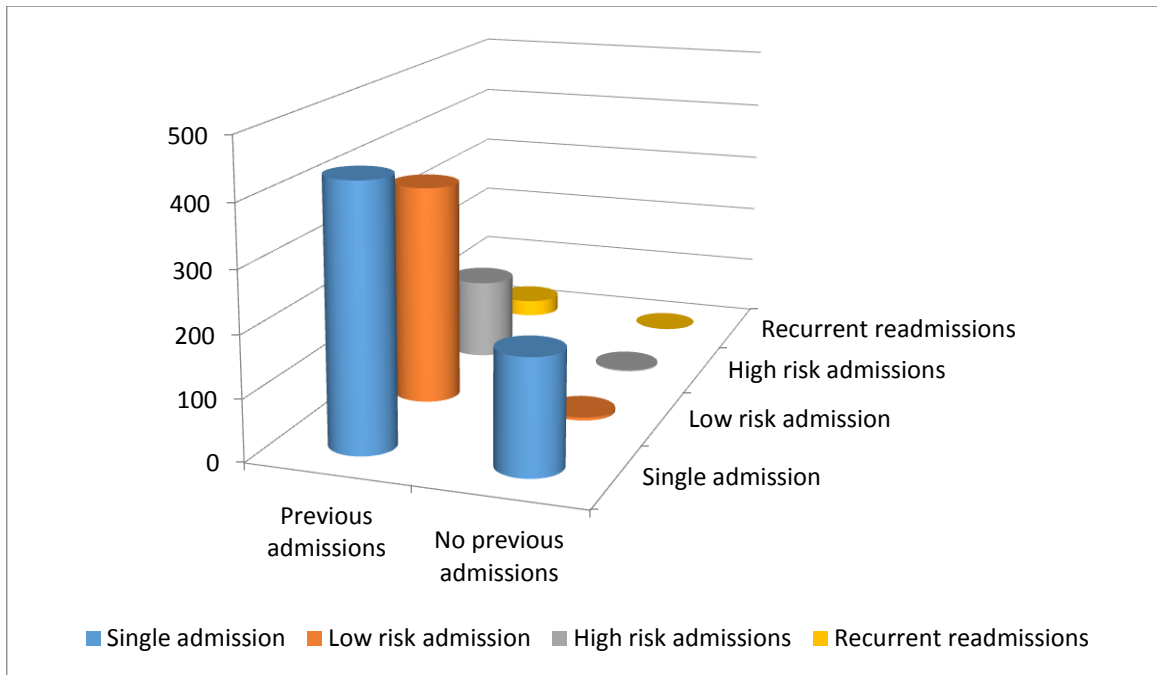
Figure 5.11: Reported previous admissions stratified by admission category

The figure above matches the reported previous admission status (whether previously admitted, or not previously admitted in the past two years as reported by participant) with the risk of re-admission as defined for this study. It shows that the majority of low risk admissions reported no previous admissions, and that high risk and recurrent re-admissions were more frequent with reported previous admissions.

5.1.13 Number of previous admissions as measured from admission records

This looks at the frequency of re-admissions as measured from admission records, as opposed to the data above, which records the previous admissions within the study period as reported by the admitted participants. This is to

further objectively assess and confirm the participant reports from objective admission records data, and help reduce recall bias.

Of those with previous admissions, just over two-thirds (61%; n=580/947) had at least three (3) recorded previous admissions within the study period.
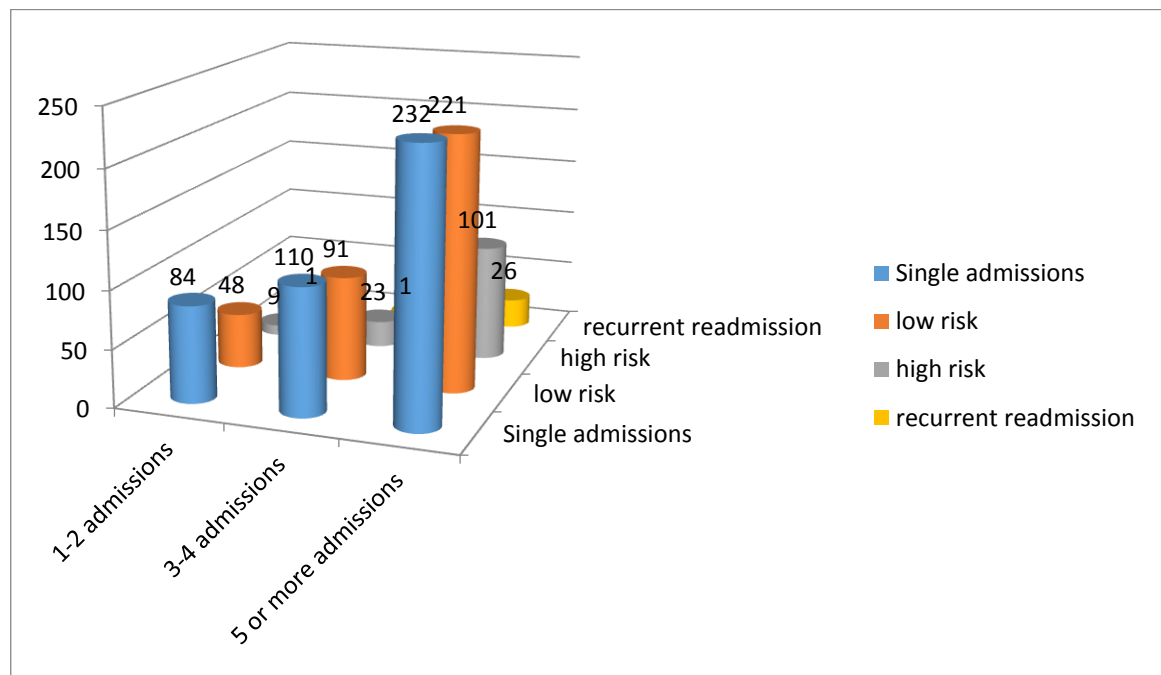
Figure 5.12: Number of previous admissions as measured from admission records

5.1.14 Reason for Admission

Although most patients had a single overriding reason for being admitted, there was sometimes more than one reason in the same participant.

Violence was the most frequent reason for admission for both admissions in general (n=242), and recurrent re-admissions (n=13/28). It was followed by disorganized behavior (n=158).
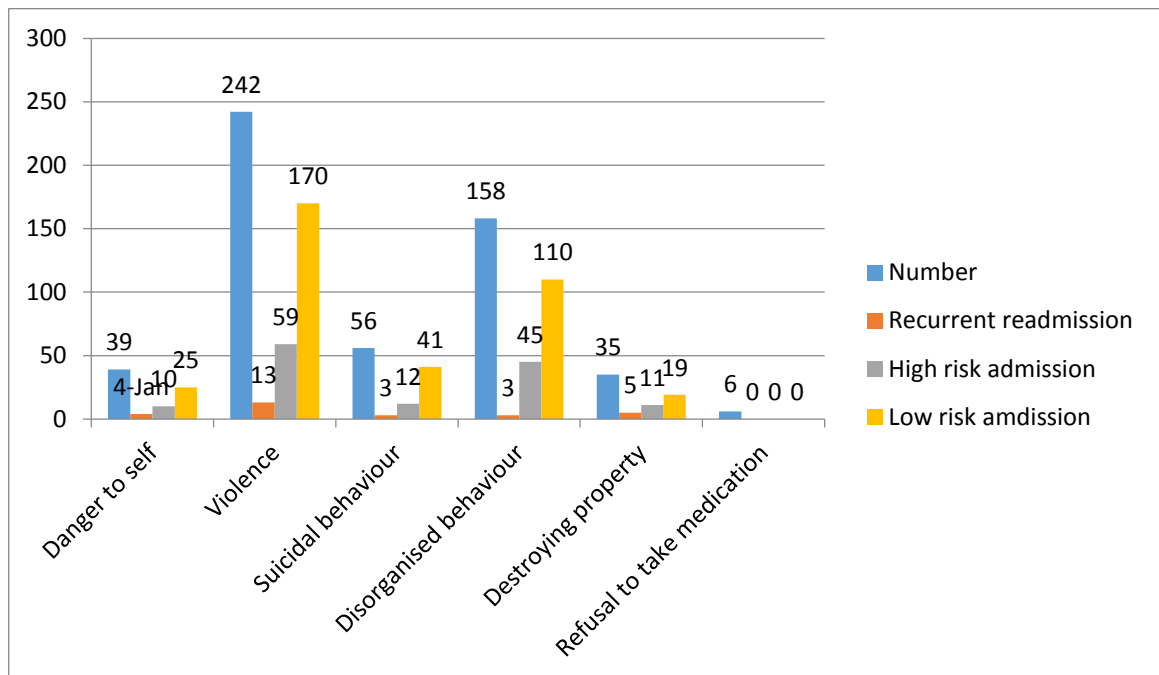
Figure 5.13: The different reasons for admission by admission-category

5.1.15 Length of Stay in SSW per admission

Well over ninety percent of admissions were for a duration of greater than three (3) days. This included the three days of involuntary admission, plus additional days spent under Specialist Psychiatric care. Those admissions that were for a duration of three days or less were discharged because their symptoms had resolved, or they had gained insight and were adjudged to be safe to be cared for in the community.

Length of stay in hospital

2.65
6.82
90.53

- less than 3 days
- 3 days
- more than 3 days
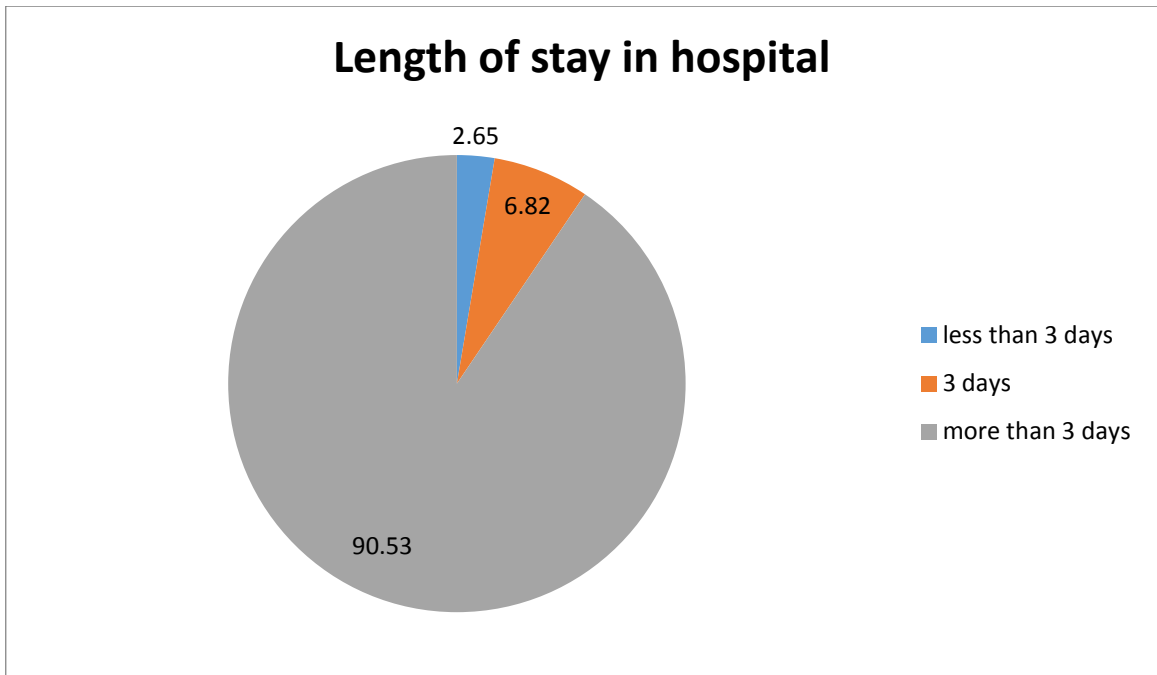
Figure 5.14: Length of Stay in SSW per admission

The bar chart below represents the length of stay data for all admissions by admission category. It shows that the overwhelming majority of admissions lasted more than three days, regardless of the re-admission risk.
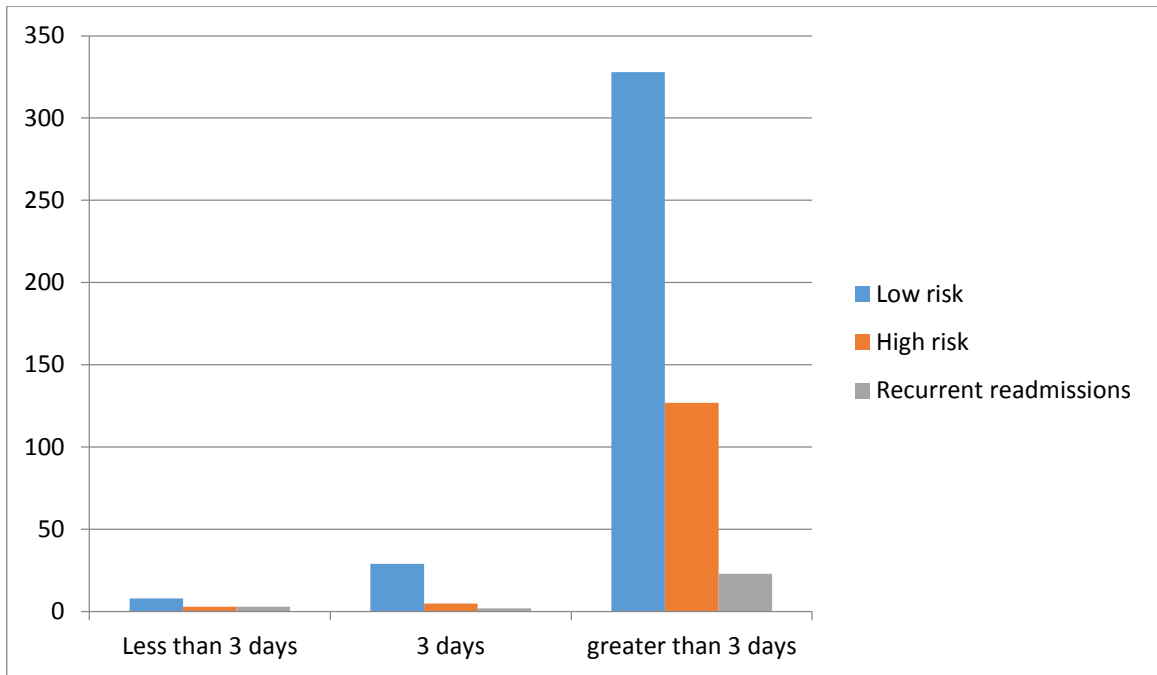
Figure 5.15: Length of stay by Admission category

5.1.16 For re-admissions, what was the diagnosis at each admission

There were five hundred and twenty-eight (528) re-admissions identified and analysed in this study. Among the re-admissions, substance-induced psychotic disorder (n=211; 40%) and schizophrenia (n=166; 31%) were the top two admitting diagnoses. When adjusted for admission status, the same two diagnoses also accounted for the majority of high risk and recurrent re-admissions.
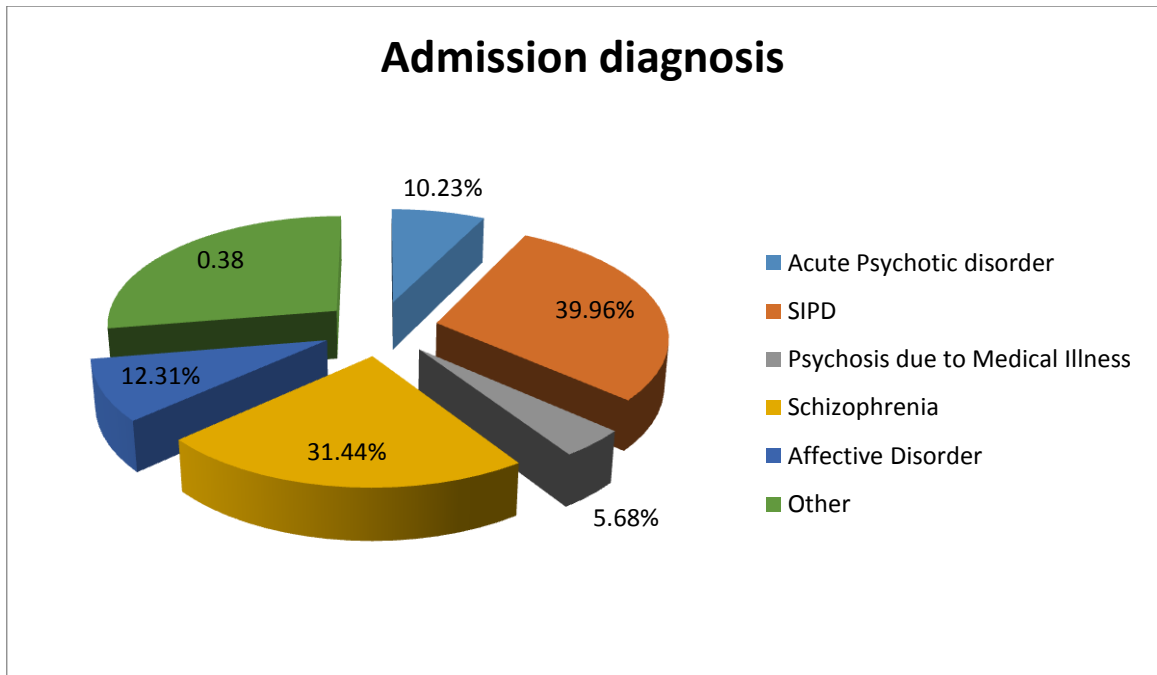
Figure 5.16: Admitting Diagnosis among the re-admissions

5.1.17 For re-admissions, what was the outcome of Admission

Among the re-admissions, the most frequent outcome following 72-hour involuntary admission was a referral for psychiatric in-patient admission (442 out of 528 re-admissions; 84%). Discharge for home care came a distant second with 82 out of 528 re-admissions (16%). Only one study participant was referred for psychiatric out-patient department care at West End Specialist Hospital.
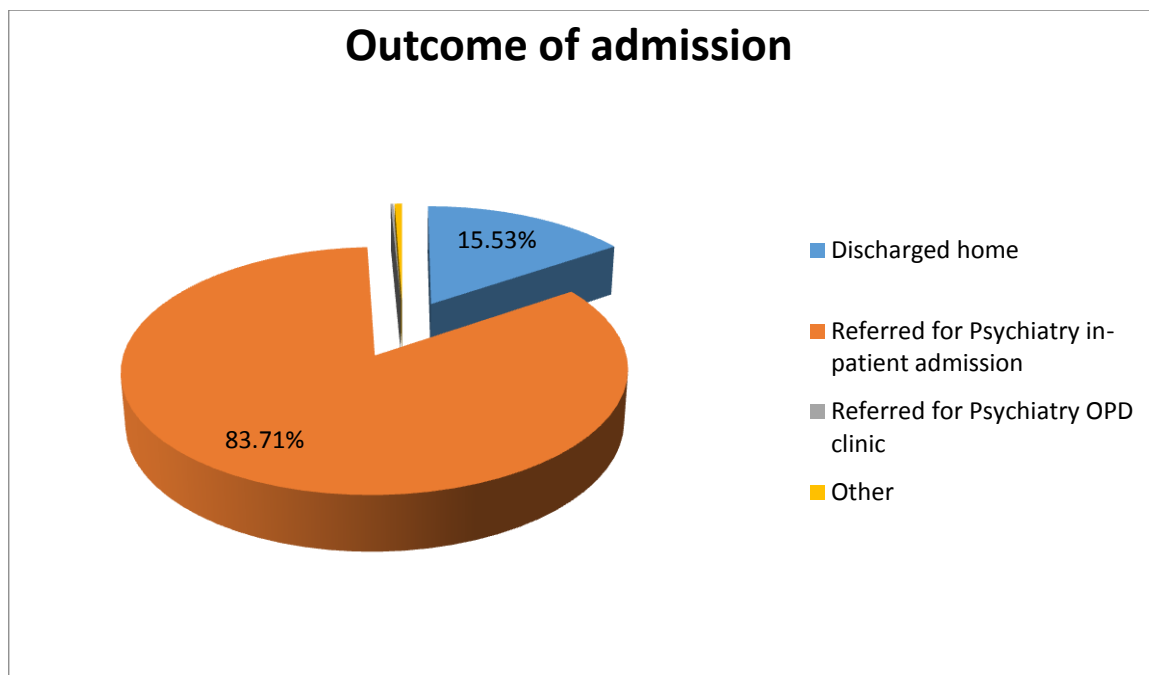
Figure 5.17: Outcome of admission

5.1.18 What Psychiatric medications were re-admissions using prior to admission?

An overwhelming majority of re-admissions (n=438/528; 83%) were participants already on various types of antipsychotics prior to re-admission. The various classes of psychiatric medication and their frequency of use are depicted in the table below.

Table 5.6: Psychiatric medication use prior to admission

Medication class	n	Frequency (%)
Antipsychotics	438	82.95
Mood stabilisers	73	13.64
Antidepressants	43	8.14
Antiepileptics	39	7.39
Anxiolytics	18	3.45
Psychostimulants	1	0.19
None	26	4.92

5.1.19 For the re-admissions, Non-psychiatric medication use prior to re-admission

Over three quarters of re-admissions were participants who were on some or other random non-psychiatric medication (n=412/528; 78.03%). A mere twenty-six of the five hundred and twenty-eight re-admissions (4.92%) were not taking any other medication besides their psychiatric treatment.
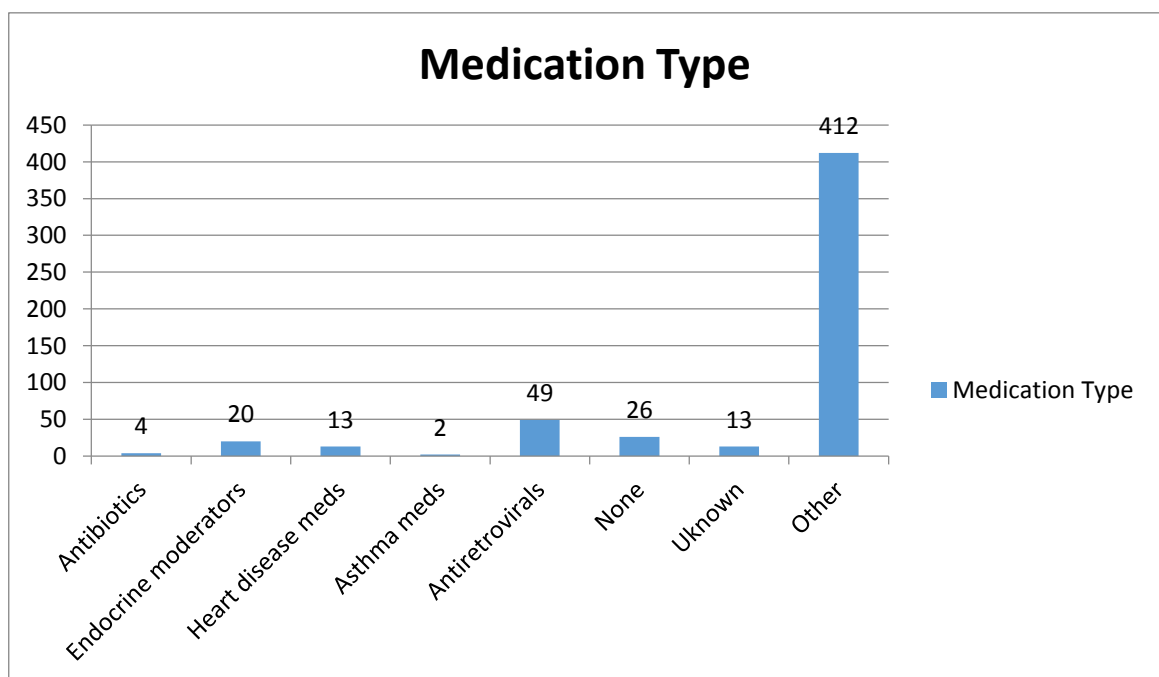
Figure 5.18: Non-psychiatric medication use prior to re-admission

5.1.20 Comorbid substance use among re-admissions

Ninety-three percent of re-admissions admitted to various forms of substance use. Only six percent of re-admissions reported no substance use (n=36/528; 7%). The different substances that were used are depicted below in the following graph.
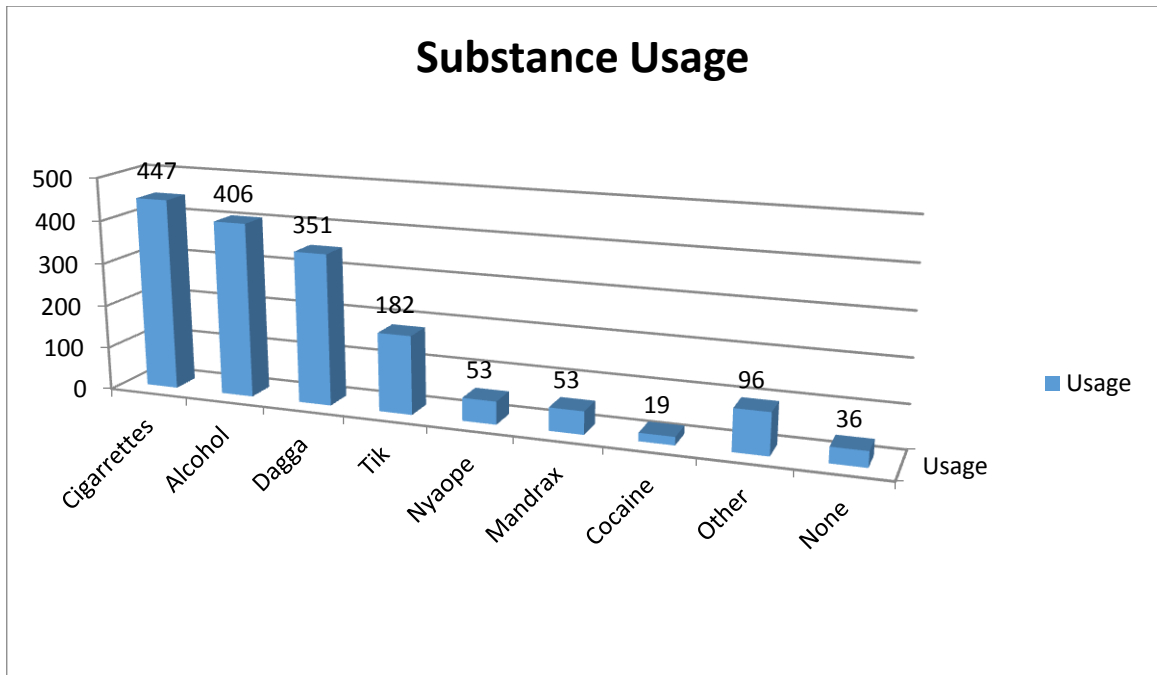
Figure 5.19: Comorbid substance use among re-admissions

Notably, in sixty-six percent of re-admissions, participants used dagga (n=351/528; 66%). When usage was stratified against re-admission category, twenty-seven of the twenty-eight participants with recurrent re-admissions smoked cigarettes, while ninety-three percent (n=26/28) of recurrent re-admissions used alcohol.

5.1.21 Presence of Comorbid illnesses among the re-admissions

Sixty-four percent of recurrent re-admissions did not have any comorbid illnesses (n=18/28; 64%). Similarly, sixty-six percent of all participants did not have any comorbid illnesses (n=351; 66.48%). A negligible number had such illness diagnosed during the involuntary admission (n=5; 0.95%).

5.1.22 Previous Psychiatric Diagnosis of the re-admissions.

The two most frequent previous diagnoses with a frequency over one third were substance induced psychosis (200/528 = 38%), and schizophrenia (177/528= 34%). The complete set of previous diagnoses and their frequencies are shown below.
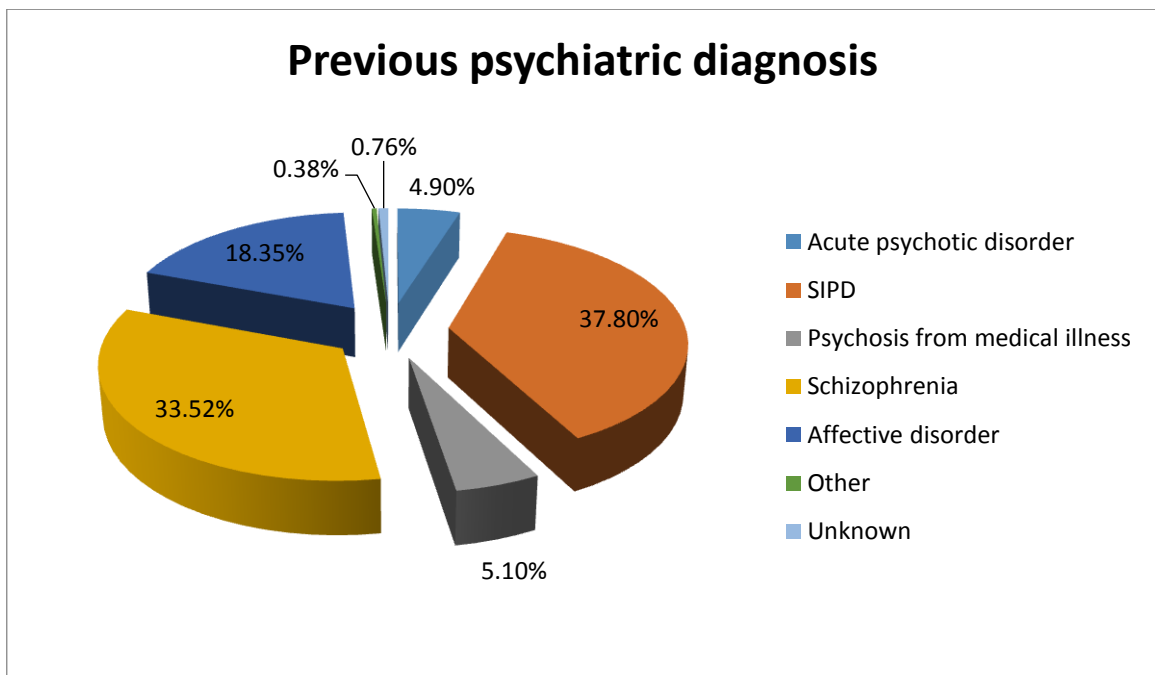
Figure 5.20: Previous Psychiatric diagnosis per re-admission

5.1.23 Where Patient was getting psychiatric treatment prior to re-admission

Well over ninety percent of re-admissions were getting their psychiatric medication from their local clinic (n=477; 90%). Other sources of medication were Community support group (n=21; 4%), nowhere (not taking any, n= 15; 3%), West End Psychiatric Hospital (n=8; 2%), and for 5 re-admissions (1%) there was no known record of where they were taking their medication from.

5.1.24 HIV status of re-admissions

HIV status

3.22%

10.42%

86.36%

- HIV negative
- HIV positive, never on ARVs
- HIV positive, on ARVs
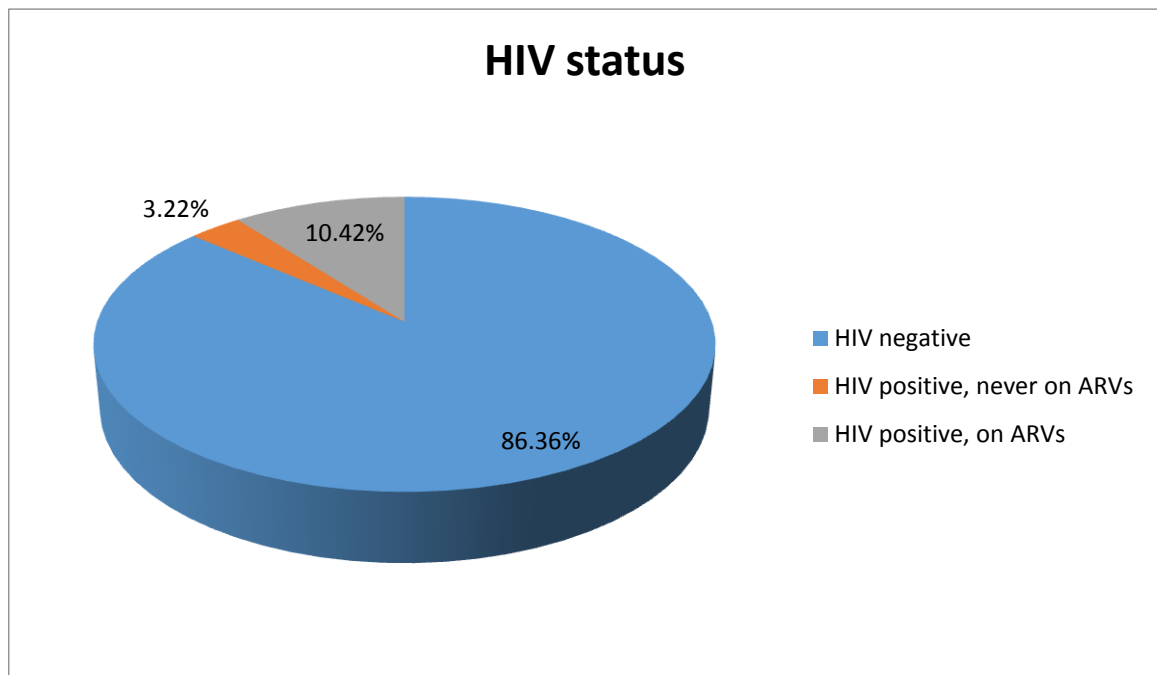
Figure 5.21: HIV Status of re-admissions

The majority of re-admissions were participants who were confirmed by testing on admission to be HIV negative (n=456; 87%). Of the seventy-two re-admissions who were HIV positive, seventy-six percent were taking anti-retroviral medications. Twenty-three of the twenty-eight with recurrent re-admissions were HIV negative.

5.1.25 Abnormal Laboratory Results among re-admissions on admission

Almost all re-admitted participants had normal laboratory results on admission (n=521; 99%). Only seven participants (1%) had abnormal results.

5.1.26 Diagnosis on Discharge from Involuntary admission among re-admissions

Substance-induced psychotic disorder was the most common discharge diagnosis among re-admissions (n=197/528; 37%), followed by Schizophrenia (n= 179; 34%).

Discharge Diagnosis

0.19% 5.11%

16.29%

37.31%

33.90%

7.20%

- ■ Acute psychotic disorder
- ■ SIPD
- ■ Psychosis due to medical illness
- ■ Schizophrenia
- ■ Affective disorder
- ■ Other
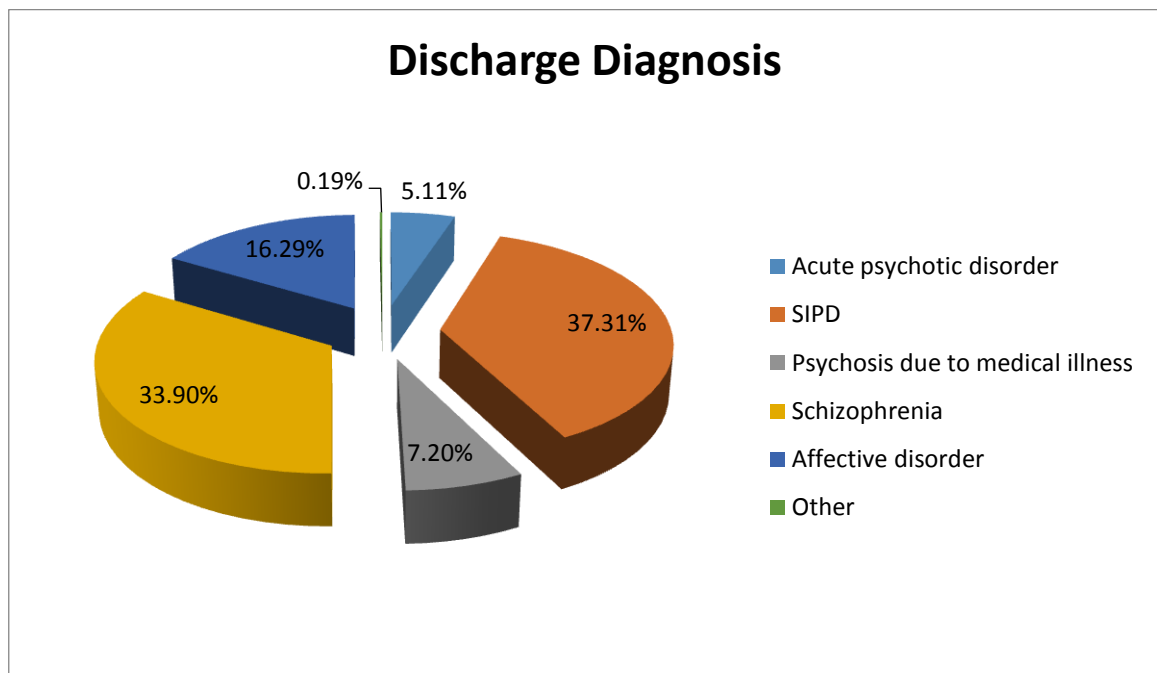
Figure 5.22: Discharge Diagnosis among the re-admissions

As depicted in the graph above, the two most prevalent diagnoses upon discharge were substance-induced psychotic disorder, and schizophrenia. This hierarchy remained even after stratifying the diagnosis by admission category.

5.1.27 For the re-admissions, what was the follow up Plan on Discharge

Almost all re-admitted participants had a documented follow up plan on discharge (n=521; 98.67%). Ninety-two percent of these were to be followed up

at the local clinic, with absolutely no follow up planned for the Community Support Group (n=0). The various plans are depicted below.
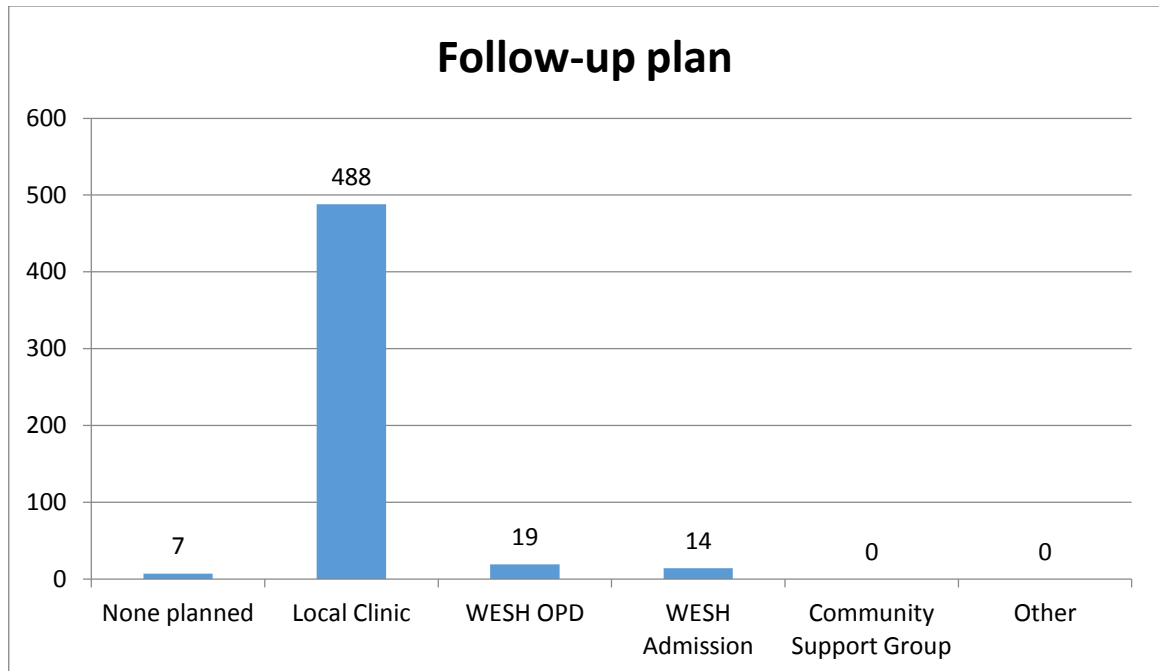
Figure 5.23: Follow-up plan upon discharge

6 DISCUSSION

6.1 DISCUSSION OF RESULTS

6.1.1 Re-admission rates

Recurrent hospital re-admissions, also referred to as frequent psychiatric re-admissions, are a common and costly management problem for psychiatry service administrators. Although terminology and definitions vary across the world, what is agreed is that this phenomenon, previously referred to as the revolving door syndrome, needs to be stemmed.

6.1.1.1 Re-admission rate

In this study, there was a re-admission rate of forty-six percent (46%), which is similar to rates found in many developed and developing countries that have studied this phenomenon[29]. A rate of 36% was found in a similar study in Porto Allegre, Brazil.[30]

In Piauí, again in Brazil, research carried out by Parente et al, which used the re-admission definition of two or more hospitalizations, noted a 55.7% frequent re-admission rate[31]. This rate is also roughly in the same range as the one found in this study.

6.1.1.2 Recurrent re-admission rate

Using the definition of recurrent re-admissions first used by George Voineskos, MD, and Sharon Denault, BA[13] the recurrent re-admission rate, defined as "five (5) or more admissions during the two-year period preceding the latest hospitalization" in our study was 2%.

6.1.1.3 High risk re-admission rate

The admission rate in this current study for high risk admissions was 12%.

6.1.1.4 Low risk re-admission rate

The low risk re-admissions rate in this study was 32%.

The author could not find any research which documented these sub-rates before this study for comparison purposes. So this may be pioneering data and findings, to be referenced in future studies here and in other countries/ regions.

Of particular note is the absence of any statistics from the African region.

Spain and Portugal showed significantly lower rates of re-admissions, with frequencies between 10 and 12%.[30] The differences in frequencies in the different parts of the world may reflect the non-uniform definition of re-admissions as discussed earlier. It may also reflect the different pathways to psychiatric care applied in different countries.[30]

6.1.2 Demographic/ Pre-admission risk factors

6.1.2.1 Age of Participants

The participant ages in this study was not normally distributed, with a median age of thirty-four (34) years and a range of 18 –74years. The Porto Alegre study participants were older with a mean age of 44.3 years.[30]

These results are also in keeping with results from North America, where Sanguinetti et al described the profile of a patient with a heightened risk of hospital re-admissions in the North American setting as being a young, unmarried, male, of African-American descent.[14]

However, this finding varies from those from the Nordic region where a study in Norway showed participants were more likely to be older.[15]

6.1.2.2 Gender of Participants

Over two-thirds of the participants in this study were males. There were 778 male admissions and 364 female admissions. Gender was in this study defined as the participant's sex at birth. This finding was in tandem with findings from the Norwegian study which showed that males were more likely to be admitted for involuntary observation than females.[15]

When admission category was analysed by gender, there were still more males than females across all four admission categories, possibly suggesting an as yet undefined and unquantified protection from mental illness engendered by the female gender.

6.1.2.3 Participant Race

Especially in Africa and the developing world, access to resources and health-seeking behaviour differs according to, among other issues, one's racial background. This study enrolled more admissions among Blacks than all the other races combined (n=326/614; 53%). This was followed by Coloureds (n=255; 41%), and Whites (n= 28; 5%). This was in keeping with the demography of the Northern Cape province of South Africa, as recorded by StatsSA.[4]

There were more admissions among Blacks for every category of admission except for recurrent re-admissions, which were more prevalent among the Coloured race (n=16/28) constituting 57%, followed closely by the Black race (n=12/28) with 43%.

There were zero recurrent re-admissions among Whites, however. The finding among Whites may be explained on the basis of the low frequency of admissions for this racial sub-group, or maybe the existence of another admission pathway outside the Public Health system, such as in Private psychiatric institutions. However, this may be the topic of another future study.

Re-admissions in the North American[14] study were similarly commoner among patients of African-American descent, which is a composite definition of Blacks and those of mixed race (classified as Coloureds in the South African context).

6.1.2.4 Level of income (as shown by suburb of residence)

Money buys most things good, including facilitating access to better health and social support systems. In this study, there were no recurrent re-admissions from high-income areas. Almost all participants lived in low-income (n=1114; 98%) urban towns (n=1136; 99%), while participants from small rural towns only had single admissions. This was similarly found to be the case in a study in Norway.[15]

A similar study in Brazil showed different results, failing to demonstrate the protective effects afforded by a higher level of income, with 68.8% of participants in a re-admission study reporting that they were getting some kind of payment for work done.[31]

Use of postal code (suburb of residence) as a proxy for level of income, though not an exact science, has been extensively used in especially older studies. The current trend though is moving away from this proxy as it is not an accurate reflection.[32]

6.1.2.5 Marital Status

Marriage is considered a stabilizing factor in adult life in many African communities, forming an integral part of the social support system. By uniting families, marriage widens the social safety net for any individual[3,6]. However, the majority of the admissions in this study, eighty-two percent (n=23/28) were never married. This may well be a reflection of the changing practice in the general population from which the reference population was chosen.

The Porto Alegre study also found most patients for involuntary admission were without a partner (51% single and 26% separated or widowed).[31]

In North America, participants were also more likely to be single[14]. This is also in keeping with trends in their general communities.

6.1.2.6 House ownership

House ownership was studied as one of the indicators of the social safety network supporting the mental health care user, an absence of which was hypothesized to increase the risk of re-admissions. In this study, only a fifth owned the houses they lived in (n=235; 21%). Eighty-four percent (84%) of those with a high risk of recurrent re-admissions did not own the houses they lived in either. Neither did three-quarters of admissions in the category recurrent re-admissions (n=22/28; 79%). This finding is in sync with findings from Norway[15]. In South America, according to the Porto Alegre study, 83% lived in shared accommodation.

The mental illness may be the reason excluding the South African users from owning their own accommodation, through imprudent financial decisions, in itself a reason for involuntary admission.

6.1.2.7 Educational level of participants at admission

In this study, seventeen of the twenty-eight (61%) recurrent re-admissions had only attained primary school education. However, well over half of all the admissions had attained secondary level education (n=624; 55%). In the Porto Alegre study, 47% of participants had high school education,[30,31] comparable to the current study. However, in the Scandinavian study, the majority of study participants were likely to have a low level of education and were mostly migrants who had not benefitted from the socialist education system in that country.[15]

6.1.2.8 Employment status per Admissions

Although mental illness is associated with diminished capacity to work, being productively employed is a stabilizing factor for MHCU as it provides structure to their daily working lives, and also provides the income needed to meet their financial needs.[34] Eighty-three percent (83%; n=952) of all the admissions were unemployed, with only nine percent being employed either formally or informally, and a similar proportion having lost their jobs recently. Of those with recurrent re-admissions (n=28), well over three-quarters (79%; n=22) were

unemployed, while eighty-seven percent of those in the high risk re-admission group were also unemployed.

A similar study in Brazil showed an employment rate of 68.8% among study participants.[30,31] In Norway, study participants were also more likely to be unemployed.[15]

6.1.2.9 Grant status

For the majority of the admissions in this study, the person admitted was not a grant recipient (65%; n=740). This is despite the fact that in South Africa, under the Social Assistance Act 2004, persistent and pervasive mental illness is considered a disability if it limits function, and sufferers can apply to the South African Social Security Agency (SASSA) for a disability grant to help with their self-care. If there is no care-giver readily available, then the Social Worker can help arrange for a grant-in aid that pays for a care-giver to look after the mentally-disabled member on a full time basis.

Similarly, in the Brazilian study, even though the frequency was lower, 42% of participants did not receive any financial aid.[31,30]

In Norway, the majority of participants in a similar study were on a disability grant, probably reflective of a more advanced and generous social security system.[15]

6.1.3   Who referred this admission for 72-hour involuntary admission

Even though the Police service was responsible for the majority of referrals in North America and Norway,[14,15] in South Africa, as noted in this study, the police were only involved in the referral of only 28% of the admissions. This may be because, as discussed in the introduction, when faced with a mentally-ill person in the family, family members assume direct responsibility for looking after the MHCU. They will therefore be the first to notice a change in function and therefore organize to take the user to the hospital themselves.[3,7]

6.1.4   Who does admitted participant normally stay with

A slight majority of admissions (56%; n=643) were of participants who stayed with their parents, reflecting the culture of Ubuntu in South Africa. Only fifteen percent (n=176) stayed with their spouses. A very minute number stayed alone (n= 18%).

Similarly, studies in Brazil showed a majority of participants (55%) stayed with two or more people,[31] whereas in North America[14] and Norway,[15] participants were more likely to be staying alone.

6.1.5   Does participant report previous admission for involuntary observation as measured per admission

A greater majority of the admissions were re-admissions, with at least one previous admission (83.01%; n=948) within the two-year study period. This is significantly higher than the findings in Brazil[13,30,31] where 63.5% had at least

one previous admission, but agreeing with North American findings of a majority having multiple re-admissions.[14]

6.1.6   Reason for Admission

Although most admissions had a single overriding reason for being admitted, there was sometimes more than one reason for the same admission, and all the reasons were individually recorded in this study. The frequency of each reason for admission was then calculated.

Violence was the most frequent reason for admission for both admissions in general (n=242), and recurrent re-admissions (n=13/28). It was followed by disorganized behaviour (n=158). These findings are in keeping with findings from North America[14], where violence was also the predominant reason for admission, but different from the Brazilian study, where the most common cause for involuntary admission was "risk of, or attempted suicide (48%), followed by severe disability to self-care (29%)".[31]

6.1.7   Length of Stay in SSW per admission

Just over ninety percent of admissions in hospital were for a duration greater than three (3) days. This included the three days of involuntary admission, plus additional days spent under Specialist Psychiatric care. Those admissions which lasted for three or less days were because symptoms had resolved, or

they had regained insight and were deemed to be safe to be cared for in the community.

In Brazil, admissions lasted longer, with a mean of 36 days, and a range of 5-130 days of continuous hospitalisation.[30,31] However, the trend towards deinstitutisation[6-7] and the shortage of psychiatric beds[17] may have reduced the number of days of admission in our current study.

6.1.8   For re-admissions, what was the diagnosis at each admission

Substance-induced psychotic disorder (n=211; 40%) and schizophrenia (n=166; 31%) were the top two admitting diagnoses. When adjusted for admission status, the same two diagnoses also accounted for the majority of high risk and recurrent re-admissions. As stated above, in some instances there was more than one reason for admission, for example, a schizophrenia and disorganized behaviour coexisting.

Schizophrenia was also the major admitting diagnosis in North America,[14] but not in Brazil where "depressive episode or recurrent depressive disorder" were the most frequent (37%) followed by "schizophrenia, schizoaffective disorder and psychotic disorder (25%)".

6.1.9   For re-admissions, what was the outcome of Admission

The most frequent outcome of admission was a referral for psychiatric in-patient admission (442 out of 528 re-admissions; 84%). Only one admission resulted in

a referral for psychiatric out-patient department care at West End Specialist Hospital. This despite the trend towards de-institutionalisation, as discussed in the introduction, which encourages that the health–care system discharge MHCU to ambulatory care as soon as they are stable enough.[3]

However, as noted earlier, there was a dire shortage of psychiatric beds in the Northern Cape province of South Africa.[3] According to Statistics South Africa, the Northern Cape had a total population of one million, one hundred and eighty-five thousand, six hundred (1 185 600) people, and Kimberley had a population of two hundred and twenty-five thousand, one hundred and fifty-five (225 155) people.[4]

Yet, there were only 14 public sector hospital beds per one hundred thousand (100 000) population reserved for psychiatric patients, compared to forty-eight (48) per 100 000 nationally, and 104 per 100 000 in the United Kingdom.[4]

This could be the cause of a relatively shorter duration of hospitalisation in the current study, as individual admissions for each participant had to be cut short to create space for the admission of new patients.[6-7,17]

6.1.10 What Psychiatric medications were re-admissions using prior to admission?

An overwhelming majority of re-admissions were participants (n=438/528; 83%) who were on several types of antipsychotics. Antipsychotics were the most

frequently used medications prior to admission, followed by mood stabilisers, antidepressants, anti-epileptics, and anxiolytics in descending order. This was in keeping with the prevalent pre-admission diagnoses discussed above in 6.1.3 which showed psychotic disorders and schizophrenia to be the most frequent admitting diagnoses.

6.1.11 For the re-admissions, Non-psychiatric medication use prior to re-admission

In keeping with international studies which showed a clinical comorbidity rate of 66.7% in a Brazil study,[30-31] and similarly high rates in North America,[14] there was a notably high frequency of non-psychiatric medication use in this study. Seventy-eight percent of re-admissions used at least one or other form of non-psychiatric medication. The reason for this finding has not yet been studied.

6.1.12 Comorbid substance use among re-admissions

Only about seven percent of the 528 **re-admitted** study participants reported not using substances (n=36; 7%). A large majority of readmissions in the current study (351/528, or 66%), actively used dagga. This majority shot to ninety-three percent (93%) for alcohol use, and ninety-six percent (96%) for alcohol use when the substance use was stratified against re-admission category.

In the North American study however, substance use was not significantly associated with readmission risk[14], contrary to findings from this study, and the Norwegian study which also showed rampant active substance use.[14] Substance use is however a common enabler/co-dependent problem among schizophrenic patients in South Africa. It remains to be further elucidated which is the precursor, especially given the legalization of dagga use for personal consumption in South Africa in 2018 by the Constitutional Court of South Africa, Case CCT 108/17.[33]

6.1.13 Presence of Comorbid illnesses among the re-admissions

In the Porto Alegre study, 67% had some clinical but not psychiatric comorbidity.[31] This was dissimilar to the findings of this study, which revealed that a majority sixty-four percent (18/28) of recurrent re-admissions were free of any comorbid illnesses. There was no obvious logical explanation for these different findings, and was actually one of the highlights of the deficiencies of the study design used for this study. This is potentially a subject for a future study, preferably a prospective study where an active search for comorbidity would be an important study outcome.

6.1.14 Previous Psychiatric Diagnosis among re-admissions

Substance induced psychosis (200/528 = 37.88%), and schizophrenia (177/528=33.52%) were the most frequent previous diagnoses among the re-admissions in this study. Similarly, Schizophrenia, and psychotic disorders,

were also the most prevalent pre-existing diagnoses in all similar studies in Brazil, North America, and in Norway.[13,14,31]

6.1.15 Where were re-admissions getting psychiatric treatment prior to admission

This study revealed that the majority (90% of 528 readmissions) were getting their psychiatric medication from their local clinic. This was higher, but comparable to, the seventy-six percent (76%) of participants in the Porto Alegre study who were getting their psychiatric medication from ambulatory public health services.[31]

6.1.16 HIV status of re-admissions

Of the seventy-two admissions who were HIV test positive, seventy-six percent were taking anti-retroviral medications, in keeping with World Health Organisation (WHO) standards. Twenty-three of the twenty-eight recurrent re-admissions, or eighty-two percent (82%), were HIV negative. Even without performing analytic tests of association, it is evident that HIV infection was not a risk factor for recurrent re-admissions. There was no available comparable data from other studies to compare with.

6.1.17 Abnormal Laboratory Results among re-admissions on admission

There was no comparable data from other studies on frequency of abnormal laboratory findings during admissions.   However, that ninety-nine percent (521/528) of all re-admissions did not have any abnormal laboratory results showed that the admitted participants were otherwise physically well, apart from their mental illness.

6.1.18 Diagnosis on Discharge from Involuntary admission among re-admissions

This study found that substance- induced psychotic disorder and schizophrenia were the most frequent discharge diagnoses (n=197/528; 37.31%) among the re-admissions. This was not supported by data from other studies, and may have been a reflection of the suspected but unconfirmed prevalence of substance use in the study population of the Northern Cape in South Africa.

This hierarchy remained even after stratifying the discharge diagnosis by admission category.

6.1.19 For the re-admissions, what was the follow up Plan on Discharge

There was a written follow-up plan for ninety-nine percent of the re-admissions in this study. This was at the local clinic for 92% of these readmissions.

After being admitted to hospital for variable lengths of time, patients were discharged, after undergoing some form of mental and functional rehabilitation while in the psychiatric hospital, to their homes for ongoing community-based psychosocial rehabilitation, which was aimed at facilitating the return to optimum functioning and independence of ill and disabled people in their own communities.[1-2]

A case control study in Brazil,[18] revealed that individuals who had been referred to community psychosocial support groups after their most recent discharge had about twenty percent lower odds of readmissions than those referred to usual outpatient care.[18]

As discussed earlier, a chronic shortage of essential psychiatric medications at the primary care clinics, affecting all the five classes of psychiatric medications, resulted in patients discharged for ambulatory care with a month's supply of medication from the tertiary hospital ending up with no medication when this take home supply was finished, as the clinics could not resupply the same medication due to stock shortages.[19]

7 CONCLUSION AND RECOMMENDATION

7.1 CONCLUSION

This study showed that readmissions and recurrent re-admissions, are as much a problem in the Northern Cape Province of South Africa as they are across the rest of the world. In this study, there was a re-admission rate of forty-six percent (46%), and a recurrent re-admission rate of 2%.

Individual pre-admission demographic factors that predicted a high risk of re-admission included male sex, Black race, young age, being unemployed, and being from a low-income area. Being of Coloured ethnicity, which is a distinct race peculiar to South Africa, was a particular risk factor for recurrent re-admissions.

Social support characteristics that also predicted a higher re-admission risk included being unmarried, unemployed, and not living with one's parents. Interestingly, getting a disability grant was not protective. Substance use, especially drinking alcohol and smoking cigarettes, including use of dagga, was very common in those with a risk of recurrent re-admissions.

One question remains with inconclusive answers: Does substance use predispose to mental illness, or does mental illness lead to substance use?

However, that the two co-exist in a symbiotic relationship is not in doubt at all, as shown in this and other studies.

There were also clinical factors that were present in the majority of admissions classified as re-admissions, and therefore predisposing to recurrent readmissions. These included a previous history of involuntary admission, having a diagnosis of Schizophrenia and substance-use psychiatric disorder, being on antipsychotic medication, and staying long in hospital. However, the shortage of psychiatric beds may be hampering proper rehabilitation of patients before discharge home. The shortage of appropriate medication at the community health centres was a notable administrative problem leading to recurrent readmissions.

Interestingly the prevalence of HIV in the studied population was not higher than in the general population, despite HIV infection and its complications being known causes of neuro-psychiatric presentations.

7.2   RECOMMENDATIONS

Further research is recommended which is empowered to measure the strength of association between the predisposing factors found in this study and the risk of recurrent re-admissions, so that a profile or algorithm of a patient at risk of the revolving door syndrome can be formulated with certainty like is done for other illnesses such as the risk scoring for coronary vascular disease or for pulmonary embolism, which could be called the recurrent psychiatric re-admission risk score.

8 IMPLEMENTATION OF FINDINGS

The results of this study will be shared with the Clinical Managers (Medical) at Kimberley Hospital (now Robert Mangaliso Sobukwe Hospital) and West End Specialist Hospital, and to the Provincial Mental Health Coordinator at the Northern Cape Provincial Health Directorate.

Northern Cape Department of Health planners in the Mental Health Care unit may then study and implement interventions to keep and manage patients with recurrent re-admissions for involuntary psychiatric care effectively out of the acute hospital setting.

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APPENDICES

Appendix A: NHRD Approval

DEPARTMENT OF HEALTH

LEFAPHA LA BOPHELO BO BOTLE

DEPARTEMENT VAN GESONDHEID

ISEBE LEZEMPILO

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Reference: Tshupelo: Isalathiso: Verwysing:	*NC_201807_001*	

06 August 2018

Dr. Godwin Marufu
8 Duvenhage Street
ABSA Park, Kimberley
8301

Dear Sir / Madam

Project Title: *Characteristics of patients with recurrent involuntary admission for seventy-two hours assessment at Kimberley Hospital Complex, Northern Cape, Republic of South Africa*

The application requesting permission to conduct the above-mentioned research study was reviewed at a meeting of the Provincial Health Research and Ethics Committee (PHREC) for gate-keepers' permission on Wednesday 25 July 2018.

Decision: Approval is granted to conduct this research project at Kimberley Hospital Complex.

Your Provincial Ethics Reference Number is *NC_201807_001,* kindly use that reference number in correspondence with the PHREC administration

Please note the following comments from the committee:

Please note the following:

1) This approval is valid for a period of one (1) year
2) The researcher(s) is/are requested to make all necessary arrangement with each facility manager on when she/he will be visiting the facility to conduct this project.

We are committed to achieving our vision through a decentralized, accountable, accessible and constantly improving health care system within available resources. Our caring, multi-skilled, effective personnel will use evidence-based, informative heath care and maturing partnerships for the benefit of our clients and patients.

Appendix B: HSREC UFS Approval

Health Sciences Research Ethics Committee

08-Aug-2018

Dear **Dr Godwin Marufu**

Ethics Clearance: **CHARACTERISTICS OF PATIENTS WITH RECURRENT INVOLUNTARY ADMISSIONS FOR SEVENTY-TWO HOUR ASSESSMENT AT KIMBERLEY HOSPITAL COMPLEX, NORTHERN CAPE PROVINCE, REPUBLIC OF SOUTH AFRICA**

Principal Investigator: **Dr Godwin Marufu**

Department: **Health Sciences (Bloemfontein Campus)**

APPLICATION APPROVED

Please ensure that you read the whole document

With reference to your application for ethical clearance with the Faculty of Health Sciences, I am pleased to inform you on behalf of the Health Sciences Research Ethics Committee that you have been granted ethical clearance for your project.

Your ethical clearance number, to be used in all correspondence is: **UFS-HSD2018/0556/2808**

The ethical clearance number is valid for research conducted for one year from issuance. Should you require more time to complete this research, please apply for an extension.

We request that any changes that may take place during the course of your research project be submitted to the HSREC for approval to ensure we are kept up to date with your progress and any ethical implications that may arise. This includes any serious adverse events and/or termination of the study.

A progress report should be submitted within one year of approval, and annually for long term studies. A final report should be submitted at the completion of the study.

The HSREC functions in compliance with, but not limited to, the following documents and guidelines: The SA National Health Act. No. 61 of 2003; Ethics in Health Research: Principles, Structures and Processes (2015); SA GCP(2006); Declaration of Helsinki; The Belmont Report; The US Office of Human Research Protections 45 CFR 461 (for non-exempt research with human participants conducted or supported by the US Department of Health and Human Services- (HHS), 21 CFR 50, 21 CFR 56; CIOMS; ICH-GCP-E6 Sections 1-4; The International Conference on Harmonization and Technical Requirements for Registration of Pharmaceuticals for Human Use (ICH Tripartite), Guidelines of the SA Medicines Control Council as well as Laws and Regulations with regard to the Control of Medicines, Constitution of the HSREC of the Faculty of Health Sciences.

For any questions or concerns, please feel free to contact HSREC Administration: 051-4017794/5 or email EthicsFHS@ufs.ac.za.

Thank you for submitting this proposal for ethical clearance and we wish you every success with your research.

Yours Sincerely

Dr. SM Le Grange
Chair : Health Sciences Research Ethics Committee

Appendix C: Data collection/ abstraction chart (Word Version)

This is the main study form that will be used daily during the duration of the study to collect information from Hospital records by the Researcher.

DEMOGRAPHIC INFORMATION:
Hospital Folder Number and admission
sequence…………………………1ST/2nd/3rd/4th/5th/6th/7th/8th/9th/10th admission

A. Age...

B. Gender: 1. Male...............
                2. Female...........
                3. Other..............
                4. Unknown........

C. Race:
                1. Black...............
                2. Coloured.........
                3. White..............
                4. Other..............

D. Suburb and Town of residence:
                1.Town (urban/ rural).
                2. Suburb (low income/ high income)

SUPPORT SYSTEMS:

E. Marital status: 1. Never married..........
                      2. Currently married......
                      3. Divorced...................
                      4. Widowed..................

F. Does patient own the house they live in?
                1. Yes….
                2. No………

G. Highest level of education attained:
                1. Primary………
                2. Secondary…..
                3. Tertiary………
                4. Other………..
                5. Unknown…

H. Employment status:
        1. Not employed………………….
        2. Recent job loss………………..
        3. Formally employed.................
        4. Informally employed

I. Does the patient receive any disability grant?
        1. Yes….
        2. No…..
        3. Unknown….

J. Who referred patient to hospital?
        1. Police...................
        2. HCW...................
        3. Spouse...............
        4. Colleague............
        5. Other..................

K. Who does patient normally stay with?
        1. Alone……………
        2. Parents…………
        3. Spouse…………
        4. Other……………
        5. Unknown……….

MEDICAL/CLINICAL VARIABLES:

L. Has the patient been previously admitted for involuntary observation?
        1. No
        2. Yes.....
        If yes, how many times?   2.1: 1-2……
                                        2.2: 2-4.......
                                          2.3: ≥ 5……

M. Reason for referral for admission this visit (on form 04)
        1. Danger to self
        2. Violence (physical/verbal)
        3. Suicidal
        4. Disorganised behavior
        5. Destroying material property
        6. Refusing to take medication
        7. Unknown
        8. Other

N. Length of stay in short stay ward on this admission:
        1. <3 days
        2. 3 days
        3. >3 days

O. Admitting diagnosis on this episode (on form 05/07).
        1. Acute psychotic episode
        2. Substance-induced psychotic disorder
        3. Psychosis secondary to medical illness
        4. Schizophrenia
        5. Affective disorder
        6. Other
        7. Unknown

P. Outcome of this admission:
        1. Discharged home..
        2. Referred for psychiatric inpatient admission............
        3. Referred for psychiatric outpatient clinic…………....
        4. Other...
        5. Unknown…………………………………………………

Q. List Psychiatric Medication prior to this admission:
        1. Antipsychotics
        2. Antidepressants
        3. Anti-epileptics
        4. Psychostimulants
        5. Anxiolytics
        6. Mood stabilisers
        7. Others
        8. None

R. Other non-psychiatric medication prior to this admission
.   1. Antibiotics
        2. Endocrine moderators
        3. Heart disease medications
        4. Asthma medications
        5. Anti-retrovirals
        6. Other
        7. Unknown
        8. Other

S. Comorbid psychoactive substance use (tick all that apply):
        1. Cigarette smoking.....
        2. Alcohol………………
        3. Nyaope.....................
        4. Tik............................
        5. Mandrax...................
        6. Dagga......................
        7. Cocaine...................
        8. Other.......................
        9. None.......................

T. Any pre-existing comorbid illnesses:
  1. Pre-existing.......................................
  2. Diagnosed during this admission.......
  3. None…………………………………

U. Previous psychiatric diagnosis?
  1. Acute psychotic episode
  2. Substance-induced psychotic disorder
  3. Psychosis secondary to medical illness
  4. Schizophrenia
  5. Affective disorder
  6. Other
  7. Unknown

V. Where was the patient getting care and medication for their psychiatric diagnosis prior to this admission?
  1. Nowhere.......................................
  2. Local clinic.....................................
  3. Community support group...............
  4. West End hospital..........................
  5. Unknown
  6. Other...

W. HIV status: 1. Negative…………………………..
  2. Positive never on ARVs
  3. Positive on ARVs……………………

X. Abnormal lab results on this admission?
  1. No......
  2. Yes (Please specify)……………...

Y. Discharge diagnosis on leaving short stay ward (on forms 06/08/11):

  1. Acute psychotic disorder
  2. Substance-induced psychotic disorder
  3. Psychosis secondary to medical illness
  4. Schizophrenia
  5. Affective disorder
  6. other

Z. Follow up plan on discharge:
  1. None…………………………….
  2. Local clinic..............................
  3. West End outpatients..............
  4. West End admission................
  5. Community support group........
  6. Other.....................................

Appendix D: EXCEL Datasheet for the recurrent admissions study

DATASHEET FOR INVOLUNTARY RECURRENT ADMISSIONS STUDY DR. GODWIN MARUFU v0.7								
Hospital Folder Number (and sequential admission number)...................................	1st	2nd	3rd	4th	5th	>5th		
A. Age (years)...								
B. Gender:	B1.Male	B2.Female	B3.Other	B4.Unknown				
C. Race:	C1.Black	C2.Coloured	C3.White	C4.Other				
D. Suburb and Town of residence....................................../...................................	D1.Town (Urban/ F	D2.Surburb (D2.1. Low income/D2.2. High income)						
E. Marital status	E1.Never married	E2.Currently married	E3.Divorced	E4.Widowed				
F. Does patient own the house they live in?	F1.Yes	F2.No						
G. Highest Level of education attained:	G1.Primary	G2.Secondary	G3.Tertiary	G4.Other	G5.Unknown			
H. Employment status:	H1.Not employed	H2.Recent job loss	H3.Formally empl	H4.Informally employed				
I. Does the patient receive any disability grant?	I1.Yes	I2.No	I3.Unknown					
J. Who referred patient to hospital?	J1.Police	J2.HCW	J3.Spouse	J4.Colleague	J5.Other			
K. Who does patient normally stay with?	K1.Alone	K2.Parents	K3.Spouse	K4.Other	K5.Unknown			
L. Has the patient been previously admitted for involuntary observation?	L1.No.	L2.1: 1-2 times	L2.2: 2-4 times	L2.3: 5 or more times				
M. Reason for referral for this admission this visit(on form 04)...............................	M1. Danger to self	M2. Violence (physica	M3.Suicidal	M4. Disorganised beh	M5. Destro	M6. Refus	M7. Unknown	
N. Length of stay in short stay ward on this admission (days).................................	N1. <3 days	N2. 3 days	N3. >3days					
O. Admitting diagnosis on this episode (on Form 05/07)...	O1. Acute Psychoti	O2. Substance-induce	O3. Psychosis sec	O4. Schizophrenia	O5. Affect	O6. Other	O7. Unknown	
P. Outcome of this admission:	P1.Discharged hom	P2.Referred for psych	P3.Refered for ps	P4.Other	P5. Unkown			
Q. List Psychiatric Medication prior to this admission	Q1.Antipsychotics	Q2.Antidepressants	Q3.Antiepileptics	Q4.Psychostimulants	Q5.Anxioly	Q6.Mood	Q7.Others	Q8.None
R. Other non-psychiatric medication prior to this admission	R1.Antibiotics	R2.Endocrine modera	R3.Heart disease	R4.Asthma medicatio	R5.Anti-re	R6.Other	R7.Unknov	R8.None
S. Comorbid psychoactive substance use (tick all that apply):	S1.Cigarrete smoki	S2.Alcohol	S3.Nyaope	S4.Tik	S5.Mandra	S6.Dagga	S7.Cocaine	S8.Other	S9.None
T. Any pre-existing comorbid illnesses:	T1.Pre-existing	T2.Diagnosed during t	T3.None	T4.Unknown				
U. Previous psychiatric diagnosis?	U1.Acute Psychoti	U2.Substance-induced	U3.Psychosis sec	U4.Schizophrenia	U5.Affecti	U6.Other	U7.Unknown	
V. Where was the patient getting care and medication for their psychiatric diagnos	V1.Nowhere	V2.Local clinic	V3.Community su	V4.West End Hospital	V5.Unknov	V6.Other		
W. HIV status:	W1.Negative	W2.Positive, never on	W3.Positive, but o	W4.Unknown				
X. Abnormal lab results on this admission?	X1.No	X2.Yes (Specify...............................)						
Y. Discharge diagnosis on leaving short stay ward (on forms 06/08/11).................	Y1.Acute Psychoti	Y2.Substance-induced	Y3.Psychosis sec	Y4.Schizophrenia	Y5.Affecti	Y6.Other		
Z. Follow up plan on discharge:	Z1.None	Z2.Local clinic	Z3.West End out-	Z4.West End admissio	Z5.Commu	Z6.Other		

Appendix E: Mental Health Care Act Forms (04/05/06/07/08/11)

These are samples of forms which are mandatory to complete for all patients admitted for involuntary observations in non-psychiatric wards. They are not part of the study forms. Hospital folders will only be deemed to be complete if they contain all appropriate MHCA forms from the list below.

They are for viewing only.

Appendix E. i: FORM MHCA 04

DEPARTMENT OF HEALTH

APPLICATION TO THE HEAD OF HEALTH ESTABLISHMENT CONCERNED

FOR ASSISTED OR INVOLUNTARY CARE, TREATMENT AND

REHABILITATION

[Section 27(1) and 27(2) or 33(1) and 33(2) of the Act]

(A staff member assisting the Applicant in completing this form must record his/her

name, surname and designation)

Name, surname and designation of staff member-…………………………………

A. INFORMATION REGARDING THE USER

I hereby apply for—.

assisted care ☐ or involuntary care ☐ :

Surname of User: ....

First name(s) of User: ....

Date of birth: .... or estimated age ....

Gender: Male ☐ Female ☐

Marital status: S ☐ M ☐ D ☐ W ☐

Employment: Yes ☐ or No ☐

Property: Yes ☐ or No ☐

Income source: Pension ☐

Grant ☐

Other ☐ (Specify)……………………………….

None ☐

Is there a reason to believe that an administrator or curator needs to be appointed to

manage the financial affairs of the User: Yes ☐ No ☐

18

Residential address and contact details: ....

……………………………………………………………………………………………..

…………………………………………………………………………………………….

....

B. INFORMATION REGARDING APPLICANT

Surname of applicant: ....……......

First name(s) of applicant:...

Date of birth of applicant: .... (must be over 18 years of age)

Residential address and contact details: ....

……………………………………………………………………………………………

……………………………………………………………………………………………

C. Relationship between applicant and mental health care user: (mark with a cross)

Spouse ☐ Partner ☐ Associate ☐ Parent ☐

Guardian ☐ Heath care provider ☐ Other ☐ ....(specify)

(If User is under 18 this application must be made by the parent, caregiver, guardian or

person with parental right and responsibilities)

I last saw the User on... at ....……

(date) (time) (place)

(The applicant must have seen the User within seven days of making this application)

D. Why is the applicant the health care provider?:

The spouse, next of kin, partner, associate, parent or guardian of the User is:

(i) Unwilling (State reasons for this conclusion):

....

……………………………………………………………………………………………

……………………………………………………………………………………………

……………………………………………………………………………………………

or

(ii) Incapable (State Reasons for this conclusions for this conclusion):

……………………………………………………………………………………………

……………………………………………………………………………………………

…………………………………………………………………………………….

....

or

(iii) Unknown/Untraceable (state efforts made to trace)

………

……

…….

E. Reasons for the Application:

I, the undersigned, am of the opinion that the above-mentioned person is suffering from a

mental illness / intellectual disability for the following reasons(e.g, what did he/she do or

say?):

....

....

....

....

F. In the case of an application for involuntary care:

In your opinion:

(i)Is the User a danger to self and others due to his/her mental illness?

Yes ☐ No ☐

(ii) Is the User willing to receive care, treatment and rehabilitation if needed?

Yes ☐ No ☐

(iii) Is the User able to make an informed decision?

Yes ☐ No ☐

I also attach the following information in support of my application (if available)

Medical certificates:.. ☐

History of past mental illness: ☐ / intellectual disability: ☐

Other: ☐

....

…………………………………………………………………………………………..

…………………………………………………………………………………………..

I wish to have representation/Legal Representation/Legal Aid

for myself: Yes ☐ No ☐

or, on behalf of the User Yes ☐ No ☐

Print initials and surname (Applicant)...

Signature (Applicant):………………………………………….

Date: ....

Place: ....

Note: Applicant must sign under oath

F. OATH/AFFIRMATION

I certify that:

iii. The deponent acknowledged to me that:

a. He/she knows and understands the contents of this declaration;

b. He/she has no objection to taking the prescribed oath;

c. He/she considers the prescribed oath to be binding on his/her conscience;

iv. The deponent signed this declaration in my presence at …………………… on

this ………… day of ……………………. 20…….

_____

Signature: Commissioner of Oath: Ex-Officio

Name: ……………………….

Rank / Designation: …………………………..

(Submit original to Review Board)

Appendix E. ii: FORM MHCA 05

DEPARTMENT OF HEALTH

REPORT ON COMPLETION OF EXAMINATION AND FINDINGS BY

MENTAL HEALTH CARE PRACTITIONER FOLLOWING AN APPLICATION

FOR ASSISTED OR INVOLUNTARY CARE TREATMENT AND

REHABILITATION

[Section 27(5) or 33(5) of the Act]

Section 1

Surname of User ....

First name(s) of User ....………

Date of birth .... or estimated age ....

Gender: Male ☐   Female ☐

Occupation .... Marital status: S ☐ M ☐ D ☐ W ☐

Residential address: ....

....

....

....

....………

Section 2

Date of examination: .... Place of examination: ....…………

Physical health status (filled in only by mental health care practitioner qualified to

conduct physical examination):

(a) General physical health:

....

....

....

....………….

(b) Are there signs of injuries? Yes ☐ No ☐

If yes, please indicated whether you believe this is as a result of abuse?

Yes ☐ No ☐ Unsure ☐

If yes, was this abuse reported/investigated? Yes ☐ No ☐

(c) Are there signs of communicable diseases? Yes ☐ No ☐

If the answer to (b) or (c) is Yes, give further particulars:

……………………………………………………………………………………
……………………………………………………………………………………
……………………………………………………………………………………
……………………………………………………………………………………
……………………………………………………………………………………

Section 3

Information on User received from other person(s) or family (state names and contact details):

……………………………………………………………………………………
………………………………………………………………………………..
……………………………………………………………………………………
………………………………………………………………………………..

Section 4

Previous mental health history if known (State dates and places):

....
....
....

…………………………………………………………………………………………

…………………………………………………………………………………

Section 5

Mental health status of the User at the time of the present examination (describe symptoms or diagnostic criteria):

....

....

....

………………………………………………………………………………………

……………………………………………………………………………………………

…………………………………………………………………………………………..

Section 6

Type of illness (provisional diagnosis):

....

....

....

…………………………………………………………………………………………..

Section 7

In my opinion the above-mentioned User—

has homicidal tendencies due to mental illness   Yes ☐   No ☐

has suicidal tendencies due to mental illness   Yes ☐   No ☐

is a risk to inflicting serious harm to him/herself or others or causing serious damage to

property belong to him/her or other due to mental illness Yes ☐   No ☐

Section 8

Recommendation to head of health establishment on an application for assisted care, treatment and rehabilitation services only(do not complete section 9 of this form if

section 8 is applicable)⎯

An application was made for assisted care, treatment and rehabilitation services☐ or

involuntary care☐, treatment and rehabilitation services ☐

1. Is the User suffering from a mental illness and as a consequence of this requires care,

treatment and rehabilitation services for their own health and safety or the health and

safety of others?   Yes ☐ No ☐

2. Is the User capable of making an informed decision on the need to receive care,

treatment and rehabilitation services? Yes ☐   No ☐

3. Is the User willing to receive care, treatment and rehabilitation services?

Yes ☐

No ☐

Section 9

Recommendation to head of health establishment on an application for Involuntary care,

treatment and rehabilitation services only (Do not complete section 8 of this form if

section 9 is applicable)

1. Is the User suffering from a mental illness and as a consequence of this requires care,

treatment and rehabilitation services? Yes ☐   No ☐

2. Is the User capable of making an informed decision on the need to receive care,

treatment and rehabilitation services? Yes ☐   No ☐

3. Does the User refuse to receive care, treatment and rehabilitation services?

Yes ☐ No ☐

4. Is the User in your view, likely to inflict serious harm on him/ herself or others?

Yes ☐ No ☐

5. Is care, treatment and rehabilitation services, in your view necessary for the protection

of the User's financial interests or reputation? Yes ☐ No ☐

Section 10

Based on the abovementioned information my recommendation to the head of health

establishment is that the User should—

1. Receive voluntary care, treatment and rehabilitation services ☐

2. Receive assisted in-patient care, treatment and rehabilitation services ☐

3. Undergo 72 hour assessment following the application for involuntary care, treatment

and rehabilitation services to determine the need for further care, treatment and

rehabilitation services ☐

Section 11

I declare that I have personally informed the mental health care User of his/her rights,

including his/her right to representation including the right to legal representation and/or

Legal Aid, and the right to have his/her financial interests or reputation safeguarded and

his/ her right to have an administrator or curator appointed.

Comment:

…………………………………………………………………………………………………

…………………………………………………………………………………………………

I .... (name of mental health care practitioner)

hereby declare that I have personally assessed ....

.... (name of mental health care user) at ....

.... (name of health establishment) on .... (date).

....

Signature:…………………………………………….

Category of designated mental health care practitioner: ....……………….

Registration number with relevant Council:……………………………………..

Date: ....

Place: ....

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Appendix E. iii: FORM MHCA 06

DEPARTMENT OF HEALTH

72-HOUR ASSESSMENT AND FINDINGS OF MEDICAL PRACTITIONER

ANDANOTHER MENTAL HEALTH CARE PRACTITIONER AFTER HEAD OF

HEALTH ESTABLISHMENT HAS APPROVED INVOLUNTARY CARE,

TREATMENT AND REHABILITATION SERVICES

[Section 34(1) of the Act]

Section 1

Surname of User ....

First name(s) of User ....

Date of birth .... or estimated age ....

Gender: Male ☐   Female ☐

Occupation .... Marital status: S ☐   M ☐   D ☐   W ☐

Residential address:...

....

....

....

....……………...

Section 2

Date and time of the beginning of 72-hour assessment: ....

Place of assessment: ....……………..

Section 3

(a)General physical health (To be completed by medical practitioners only):

....

....

....…….……

(b) Are there signs of injuries? Yes ☐ No ☐

If yes, please indicate whether you believe this is as a result of abuse?

Yes ☐ No ☐

If yes, was this abuse reported/investigated?   Yes ☐ No ☐ Not known ☐

(c) Are there signs of communicable diseases? Yes ☐ No ☐

If the answer to (b) or (c) is Yes, give further particulars:

....

……………………………………………………………………………………………………

…………………………………………………………………………………………………..

…………………………………………………………………………………………………

…………………………………………………………………………………………………..

Section 4

Past mental health history of the User (State dates and places):

....

....

....

Section 5

Mental health status of the User during the 72 hours assessment period:

....

....

....

Section 6

Type of illness (provisional diagnosis):

....

....

....

In my opinion the above-mentioned User—

has homicidal tendencies due to mental illness   Yes ☐   No ☐

has suicidal tendencies due to mental illness   Yes ☐   No ☐

is   at risk due to mental illness   Yes ☐   No ☐

Section 7

Recommendation to head of health establishment - application for involuntary care:

Is the User capable of making an informed decision on the need to receive care, treatment

and rehabilitation services?:   Yes ☐   No ☐

Does the User refuse to receive care, treatment and rehabilitation services? Yes ☐   No ☐

Is the User in your view, likely to inflict serious harm on him /herself or others?

Yes ☐   No ☐

Is the care, treatment and rehabilitation, in your view necessary for the User's financial

interests and reputation? Yes ☐   No ☐

Section 8

Based on the abovementioned information my recommendation to the head of health

establishment is that the User should either:

1. Receive voluntary care, treatment and rehabilitation service ☐

or

2. Receive assisted care, treatment and rehabilitation services ☐

or

3. Continue to receive involuntary in-patient care, treatment and rehabilitation services

☐

or

4. Receive involuntary out-patient care, treatment and rehabilitation services ☐

or

5. Be discharged from the Mental Health Care Act ☐

Section 9

I declare that I have personally informed the mental health care User of his/her rights,

including his/her right to representation including the right to legal representation and/or

Legal Aid, and the right to have his/her financial interests and/or reputation safeguarded.

Comment:………………………………………………………………………………

…………………………………………………………………………………………

…………………………………………………………………………………………..

…………………………………………………………………………………………

…………………………………………………………………………………………..

…………………………………………………………………………………………..

Section 10

Print initials and surname;... ………

Registration Category: ………………………………………………………….

Signature:…………………………………………………

Date:…………………………………………………….

Category of designated mental health care practitioner for example 'nurse', psychologist'

or 'medical practitioner': ....

Date: ....

Place: ....

Appendix E. iv: FORM MHCA 07

DEPARTMENT OF HEALTH

NOTICE BY HEAD OF HEALTH ESTABLISHMENT ON HIS/HER DECISION

WHETHER TO PROVIDE ASSISTED- OR INVOLUNTARY INPATIENT CARE,

TREATMENT AND REHABILITATION SERVICES

[Sections 27(9), 28(1), 33(7) and 33(8) of the Act]

Section 1

I ....(name of head of health establishment)

hereby:

Approve the application ☐

Do not approve the application ☐

to the assisted care, treatment and rehabilitation ☐

to the in-patient involuntary care, treatment and rehabilitation ☐

of ....(name of User).

Section 2

Whereas the findings of the medical practitioner and another mental health care practitioner

concur that the User—

(a) should ☐   should not ☐ receive assisted care, treatment and rehabilitation services ; or

(b) must ☐   must not ☐ receive involuntary care, treatment and rehabilitation services

I am satisfied ☐ not satisfied ☐ that the restrictions and instructions on the mental

health care User's right to movement, privacy and dignity are proportionate to the care,

treatment and rehabilitative services contemplated.

The reasons for consenting are as follows:

…………………………………………………………………………………..

…………………………………………………………………………………

…………………………………………………………………………………..

Print initials and surname: ....

Signature:…………………………………...........(head of health establishment)

Date: ....……Time………………………………….

Place: ....

[Copy to Applicant and original to the Review Board]

Appendix E. v: FORM MHCA 08

DEPARTMENT OF HEALTH

NOTICE BY HEAD OF HEALTH ESTABLISHMENT TO REVIEW BOARD

REQUESTING APPROVAL FOR FURTHER INVOLUNTARY CARE,

TREATMENT AND REHABILITATION ON AN INPATIENT BASIS

[Section 34(3)(c) of the Act]

I ....hereby request the

…………………………………………………………..

(name of head of health establishment)

approval from the Review Board for further involuntary care, treatment and

rehabilitation on an inpatient basis of:……………………………………

(name of User)

The findings of the mental health care practitioner and medical practitioner are that the

User requires further involuntary care, treatment and rehabilitation.

I am satisfied that the restrictions and intrusions on the mental health care user's right to

movement, privacy and dignity are proportionate to the care, treatment and rehabilitative

services contemplated.

The basis of this request for further involuntary care, treatment and rehabilitation on an

In-patient basis is that:

………………………………………………………………………………………

..…………………………………………………………………………………………

………………………………………………………………………………………

………………………………………………………………………………………

Attached hereto please find the copies of the following—

(a) the application to obtain involuntary care, treatment and rehabilitation [MHCA 04];

(b) the written findings given in terms of sections 27(5) and 33(5) [MHCA 05]

(c) the notice given in terms of section 33(8) [MHCA 07]; and

(d) the assessment findings [MHCA 06].

Signature:…………………………………………

(Head of health establishment)

Date: ....

Place: ....

(Original to Review Board &Copy (excluding attachments) to applicant)'

Appendix E. vi: FORM MHCA 11

DEPARTMENT OF HEALTH

TRANSFER OF ASSISTED / INVOLUNTARY MENTAL HEALTH CARE USER

ON INPATIENT BASIS TO ANOTHER HEALTH ESTABLISHMENT

[Section 27(10) and 34(4), of the Act]

....

(name and surname of mental health care user)

an assisted ☐ or

Involuntary mental health care user ☐

on an inpatient basis who was admitted to ....…………....

…... (name of health establishment)

on .... (date) must be

transferred to .... (name of health establishment)

Print initials and surname ....

(head of health establishment)

Signature:………………………………………….

(Head of health establishment)

Date: ....

Place: ....………

[Copy to Review Board]

Appendix F: Request letters for permission to conduct research

Appendix F. i: Request for Permission from Robert Mangaliso Sobukwe Hospital

Dr. Godwin Marufu

Department of Family Medicine

Block C (Gateway Centre)

Kimberley Hospital Complex

05 April 2018

Dr. H. Saeed

Acting Head: Clinical Management –Medical

Robert Mangaliso Sobukwe Hospital Kimberley

8301

Dear Dr. Saeed

RE: APPLICATION TO CONDUCT HOSPITAL RECORDS BASED STUDY ON INVOLUNTARY ADMISSIONS FOR SEVENTY-TWO HOUR OBSERVATIONS AT KIMBERLEY HOSPITAL COMPLEX, SHORT-STAY WARD

My name is Dr. Godwin Marufu, a duly qualified and registered Medical Practitioner (MP0742147) working as a Medical Officer in the Department of Family Medicine at Robert Mangaliso Sobukwe Hospital (Persal Number 55884903), and a fourth year

Registrar at the University of the Free State, (Student Number 2014207634). My contact cellphone is 0767866013, and my email address: godwinmarufu@yahoo.com

As part of my Masters in Medicine (Family Medicine) studies at the University of the Free State, and in keeping with the requirements of the Fellowship of the College of Family Physicians (South Africa), I do hereby apply to conduct a study at the Kimberley Hospital Complex, entitled *"Characteristics of patients with recurrent involuntary admissions for seventy-two hour assessment at* Robert Mangaliso Sobukwe Hospital*, Northern Cape Province, Republic of South Africa".*

This study aims to establish the extent and depth of this revolving door problem, and look at the characteristics that these patients who are readmitted have in common, if any, with a view to inform health care system managers who may use the findings to help prevent, or reduce this revolving door syndrome.

The study will be based on review of hospital-based records of involuntary admissions to the Short Stay ward, and **won't involve any actual contact with any patients**. The researcher will need to access about 1300 such hospital records from 01 January 2016 to 31 December 2017. An off-duty Data Clerk at the RMSH will be helping with pulling of folders from the storage room, without compromising any scheduled work program and maintaining the integrity of the hospital records, and at no additional cost to the KHC.

The research will be supervised by Professor W.J. Steinberg of the University of the Free State Family Medicine Department (Telephone 052 4013307/ 082 8034723; email: SteinbergWJ@ufs.ac.za).

The results of the study will be disseminated to the relevant departments at Robert Mangaliso Sobukwe Hospital and Northern Cape Department of Health, who may use the findings at their discretion to influence future care of involuntary admissions.

A copy of the study protocol is attached for your information and records.

Regards.

Dr. Godwin Marufu

Principal Investigator

Appendix F. ii: Request for Permission from Northern Cape Department of Health

The Head

Provincial Health Sciences Research Ethics Committee

Northern Cape Department of Health

Exum Building

Du Toitspan Road

Kimberley

8301

05 April 2018

RE: REQUEST FOR PERMISSION TO CARRY OUT RESEARCH STUDY

We are conducting research in partial fulfilment of the requirements of the Masters in Medicine in Family Medicine degree, and the Fellowship of the College of Family Physicians of South Africa. The proposed research will be carried out at Kimberley Hospital Complex.

TITLE OF THE RESEARCH PROJECT:

Characteristics of patients with recurrent involuntary admissions for seventy-two hour assessment of Mental Health Care users at Robert Mangaliso Sobukwe Hospital, Northern Cape Province, Republic of South Africa.

PRINCIPAL INVESTIGATOR/RESEARCHER NAMES AND CONTACT NUMBERS

Dr. Godwin Marufu   2014207634   0767866013

Name of student   Student Number   Contact number

Email: godwinmarufu@yahoo.com

FACULTY AND DEPARTMENT:

University of the Free State, Post-Graduate School, Faculty of Health Sciences (Clinical Medicine); Department of Family Medicine.

STUDY SUPERVISORS' NAMES AND CONTACT NUMBERS:

1. Professor W.J. Steinberg: University of the Free State: Family Medicine Department

Telephone 052 4013307/ 082 8034723; email: SteinbergWJ@ufs.ac.za

WHAT IS THE AIM/ PURPOSE OF THE STUDY?

To assess the **frequency of**, and **factors which result in**, **recurrent readmissions** (the revolving door syndrome) for involuntary psychiatric observations at Robert Mangaliso Sobukwe Hospital, Northern Cape Province, South Africa.

WHO IS DOING THE RESEARCH?

The research will be conducted by me, Dr. Godwin Marufu, a duly qualified and registered Medical Practitioner (MP0742147) working as a Medical Officer in the Department of Family Medicine at Robert Mangaliso Sobukwe Hospital (Persal Number 55884903), and a fourth year Registrar at the University of the Free State, Bloemfontein, (Student Number 2014207634). My contact cellphone is 064 905 1652, and my email address: godwinmarufu@yahoo.com.

HAS THE STUDY RECEIVED ETHICAL APPROVAL?

Not yet. This application is part of the process of acquiring ethical approval. Applications have also been made to the Robert Mangaliso Sobukwe Hospital Ethics Review committee, and to the Health Sciences Research Ethics Committee of the University of Free State.

WHY IS YOUR ORGANISATION/INSTITUTION INVITED TO TAKE PART IN THIS RESEARCH PROJECT?

The Mental Health Act requires that all patients/persons whose actions put themselves, their property, or their community in danger, and are noted to be apparently not in control of their actions due to suspected mental illness, be involuntarily admitted for a period of up to seventy-two hours in a health facility near them for observation, investigation and treatment initiation. There is an obvious and severe shortage of beds for admitting involuntary psychiatric patients for compulsory seventy-two hour observation at Robert Mangaliso Sobukwe Hospital in particular, and the Northern Cape Province in general. It would appear that the same patients are readmitted over and over again, creating the revolving door syndrome which overstretches the already inadequate health services resources. This study aims to establish the extent and depth of this problem, and look at the characteristics that these patients who are readmitted have in common, if any, with a view to inform health care system managers who may use the findings to help reduce the revolving door syndrome.

WHAT IS THE NATURE OF PARTICIPATION IN THE STUDY?

This is going to be a hospital records review study, looking at patient records spanning a two year period to identify the extent of the problem of readmissions, and the demographic, support system, and medical/clinical characteristics of those patients that had multiple recurrent admissions during the study period. There will be no actual contact with patients in any manner. The information from the patient records will be extracted using a data extraction tool by the researcher. Confidentiality of patient information will be assured, and the integrity of the patient records will not be compromised in any manner.

WHAT ARE THE POTENTIAL BENEFITS OF TAKING PART IN THIS STUDY?

There are no direct benefits to any participants for taking part in this study, as there will be no actual participants involved, but only their records. But there will be beneficence and justice, as this study is about patients from the Northern Cape Province admitted at Robert Mangaliso Sobukwe Hospital, and carried out using true records from the same patients, with the aim of benefitting their ongoing care in the future.

WHAT ARE THE POTENTIAL RISKS OF TAKING PART IN THE STUDY?

There will be no direct risks for any participant, as this is going to be a records based study. Only their records will be used, without use of personal identifiers.

WILL THE INFORMATION BE KEPT CONFIDENTIAL?

Yes, absolute confidentiality will be assured. The only person who will have access to the study files will be me, the student researcher. While working on the patient files, they will be kept in a locked cabinet in a locked room not accessible to anyone else. The data extraction tool does not have any patient names, contact numbers or addresses. The statistician is bound by the same rules that govern the safety of participants of human research as the principal investigator. Actual patient files will not leave the Robert Mangaliso Sobukwe Hospital, and there shall be no entries or alterations in any of the patient files used in the study, as they are regarded as important source documents.

HOW WILL THE INFORMATION BE STORED AND ULTIMATELY DESTROYED?

Hard copies of the data extraction tool for each visit will be stored under lock and key in a filing cabinet at the Principal Researcher's home for the prescribed period of five years, after which it shall be shredded and disposed through the usual waste disposal system operating in Kimberley at the time.

Electronic data will be kept in password protected files by the Biostatistician and the Principal Investigator only. Any future use of the stored data will be subject to approval

by the appropriate ethics review committees if applicable. After five years, this electronic storage will also be permanently deleted.

WILL THERE BE PAYMENT OR ANY INCENTIVES FOR PARTICIPATING IN THIS STUDY?

No, there will not be any payment to study participants, as this will only be a hospital records based study, with no contact with any of the patients whose files will be used.

HOW WILL THE INSTITUTION/ORGANISATION BE INFORMED OF THE FINDINGS OF THE STUDY?

There will be written reports submitted to the Clinical Managers (Medical) at Robert Mangaliso Sobukwe Hospital and West End Specialist Hospital, and to the Provincial Mental Health Coordinator at the Northern Cape Provincial Health Directorate, when the study has been completed and passed by the University of Free State and the College of Family Physicians of South Africa. A hard copy of the study will be displayed in the University of Free State Library in Bloemfontein. Any additional information may be requested from the Principal Investigator by telephone (+27 767866013) or email (godwinmarufu@yahoo.com).

Sincerely

Dr. Godwin Marufu

Principal Investigator

Appendix F. iii: REQUEST FOR PERMISSION FROM UOFS HSREC

The Head

Health Services Research and Ethics Committee

University of the Free State

Bloemfontein

05 April 2018

RE: REQUEST FOR PERMISSION TO CARRY OUT RESEARCH STUDY

We are conducting research in partial fulfilment of the requirements of the Masters in Medicine in Family Medicine degree, and the Fellowship of the College of Family Physicians of South Africa. The proposed research will be carried out at Robert Mangaliso Sobukwe Hospital, the main referral and teaching hospital in the Northern Cape Province.

TITLE OF THE RESEARCH PROJECT:

Characteristics of patients with recurrent involuntary admissions for seventy-two-hour assessment of Mental Health Care users at Robert Mangaliso Sobukwe Hospital, Northern Cape Province, Republic of South Africa.

PRINCIPAL INVESTIGATOR/RESEARCHER NAMES AND CONTACT NUMBERS

Dr. Godwin Marufu   2014207634   0649051652

Name of student   Student Number   Contact number

Email: godwinmarufu@yahoo.com

FACULTY AND DEPARTMENT:

University of the Free State, Post-Graduate School, Faculty of Health Sciences (Clinical Medicine); Department of Family Medicine.

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Sincerely

Dr. Godwin Marufu

Principal Investigator

Appendix G: Example of statistical analysis of results

The FREQ Procedure

Admission_seq	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	614	53.77	614	53.77
2	231	20.23	845	73.99
3	134	11.73	979	85.73
4	82	7.18	1061	92.91
5	53	4.64	1114	97.55
6	23	2.01	1137	99.56
7	4	0.35	1141	99.91
8	1	0.09	1142	100.00

Class_admission	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	614	53.77	614	53.77
1	365	31.96	979	85.73
2	135	11.82	1114	97.55
3	28	2.45	1142	100.00

```
if Admission_seq=1 then do; Class_admission=0;end;


*LOW Risk;
if Admission_seq=2 or Admission_seq=3 then do; Class_admission=1;end;

*HIGH Risk;
if Admission_seq=4 or Admission_seq=5 then do; Class_admission=2;end;

*Recurrent readmissions;
if Admission_seq > 5 then do; Class_admission=3;end;
```