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Factors associated with the readmission of State patients on extended leaves of absence from Sterkfontein Hospital

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Factors associated with the readmission of State patients on extended leaves of absence from Sterkfontein Hospital

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A research report submitted in a submissible format to the Faculty of Health Sciences, University of the Witwatersrand, Johannesburg, in partial fulfilment of the requirements for the degree of Master of Medicine in the branch of Psychiatry.

Johannesburg, 2023

Factors associated with the readmission of State patients on extended leaves of absence from Sterkfontein Hospital

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The authors declare that there is no conflict of interest

DECLARATION

I, Shalani Reddy, hereby declare that this research is of my own, unaided work. I am submitting this research report in partial fulfilment for the degree Master of Medicine in Psychiatry (in submissible format with my protocol) in the branch of Psychiatry at the University of the Witwatersrand, Johannesburg. This research report has not been submitted before for any degree or examination at this or any other university.



_____

Signature of candidate

05/11/2024

_____

Date

DECLARATION: STUDENT'S CONTRIBUTION TO ARTICLE(S) AND AGREEMENT OF CO-AUTHOR(S)

I, Shalani Reddy, student number [0401319J], declare that this research report is my own work and that I contributed adequately towards research findings published in the article stated below which is included in my research report.

Signature of Student……Date……

Name of Primary Supervisor……

Signature of Primary Supervisor ……Date……

This research report is dedicated, firstly to my late mother, Daisy, who was unwavering in her devotion to learning, and always inspired and motivated me to challenge myself; to my father, for instilling in me resilience; to my sister who has always supported me; and to my fiancé, for his patience and understanding.

PRESENTATIONS AND PUBLICATIONS

This research has not been presented at any forum. Regarding publication, this article has been submitted to the South African Journal of Psychiatry and is currently under review.

PRIZES AND AWARDS

No prizes or awards were received for the following article.

AUTHORS GUIDELINES FOR THE SOUTH AFRICAN JOURNAL OF PSYCHIATRY

An original article provides an overview of innovative research in a particular field within or related to the focus and scope of the journal, presented according to a clear and well-structured format. Systematic reviews should follow the same basic structure as other original research articles. The aim and objectives should focus on a clinical question that will be addressed in the review. The methods section should describe in detail the search strategy, criteria used to select or reject articles, attempts made to obtain all important and relevant studies and deal with publication bias (including grey and unpublished literature), how the quality of included studies was appraised, the methodology used to extract and/or analyse data. Results should describe the homogeneity of the different findings, clearly present the overall results and any meta-analysis.

Word limit	3000-4000 words (excluding the structured abstract and references)
Structured abstract	250 words to include a Background, Aim, Setting, Methods, Results and Conclusion
References	60 or less
Tables/Figures	no more than 7 Tables/Figure
Ethical statement	should be included in the manuscript
Compulsory supplementary file	ethical clearance letter/certificate

ABSTRACT

Introduction

A State patient is a person with a mental illness or intellectual disability, who has been found unfit to stand trial and/or not criminally responsible, for a crime involving serious violence, under Sections 77 and 78 of the Criminal Procedure Act No.51 of 1977 and has subsequently been declared a State patient by the presiding officer in terms of Section 42 of the MHCA. Such patients are detained in forensic hospitals to undergo appropriate rehabilitation. If they are assessed as low risk to relapse and reoffend, State patients are granted leaves of absence (LOA) from the hospital in an attempt to reintegrate them into their communities, with the goal of conditional and eventual unconditional discharge. Limited research on the readmission of forensic patients exists currently in low- and middle-income countries. Hence, there is the need to conduct local studies to identify factors associated with readmission, with the aim of mitigating these factors and decrease the demand on forensic psychiatric services.

Aim

To compare the profile of State patients readmitted from extended LOA from Sterkfontein Hospital, to those who were not readmitted.

Methods

The study was a retrospective record review conducted from 2018 to 2020 at the Sterkfontein hospital forensic psychiatric unit. The study compared the socio-demographic, clinical, forensic and psychosocial factors associated with readmission between readmitted and non-readmitted groups.

Results

A total of 112 participants (56 readmitted and 56 non-readmitted patients) were included in the study. The following results were obtained from the readmitted group; 46.4% used cannabis on leave of absence; 35% lacked supervision; 64.3% showed poor treatment adherence; and 10.7% reported poor availability of medications at the local clinic.

Conclusion and recommendations

Poor adherence, lack of supervision and substance use were associated with readmission from extended LOA. The implementation of programmes such as Assertive Community Treatment, and the strengthening of existing substance rehabilitation services are recommended to support State patients and their families in order to improve treatment adherence, maintain abstinence from substances and prevent readmission.

Keywords

Readmission/rehospitalisation, forensic patient, state patient, mentally ill offenders, South Africa

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LIST OF ABBREVIATIONS

LOA: Leave of absence

MHCA: Mental Health Care Act

CPA: Criminal Procedure Act

SUD: Substance Use Disorder

ACT: Assertive Community Treatment

FACT: Forensic Assertive Community Treatment

1. Introduction

Post-apartheid South Africa adopted its Constitution with an accompanying Bill of Rights in 1996.(1) It was evident then that the Mental Health Act No. 18 of 1973 needed to be amended in keeping with the Bill of Rights.(1,2) Changes in mental health care legislation worldwide, emphasised a shift toward deinstitutionalisation, to prevent exploitation and better protect the rights of psychiatric patients.(1,3–10) The goal was to decrease long hospital admissions and encourage community-based care. This resulted in the closure of many psychiatric facilities.(1,3,4,7,9,11–14)

The move toward deinstitutionalisation both locally and internationally led to a paradoxical re-institutionalisation, with a resultant demand for psychiatric beds.(9,15) In a 2005 South African study, there were 23 psychiatric hospitals in the country, providing 18 beds per 100 000 of the population.(9,15) Of the 18 beds, 3.5 forensic psychiatric beds per 100,000 of the population were allocated in three of 11 provinces in South Africa.(9,15) It was also noted that the total number of medical professionals working in mental health facilities was severely lacking, with 11.95 per 100,000 population. Of these, 0.28 per 100,000 of the population were psychiatrists.(15)

In South Africa, an accused, either with a questionable mental state at the time of the offence or at the time of the trial, is referred for a 30-day forensic observation, under section 79 of the Criminal Procedure Act No. 51 of 1977 (CPA).(16–24) In Gauteng, these observations are done by mental health professionals at two specialised forensic units, which has a population of over 15000.(19,21,25) Based on the findings from the observation period, if the crime involved serious violence and if the individual has been found unfit to stand trial and/or not criminally responsible by reason of mental illness or intellectual disability, they may be declared a State patient, under Section 42 of the current Mental Health Care Act 17 of 2002 (MHCA).(12,16,17,19,21–24) State patients are referred to as forensic psychiatric patients in international literature.(26)

State patients are referred by the courts for an indefinite period of detention to undergo treatment, care, and comprehensive rehabilitation at forensic psychiatric hospitals.(16,17,19,21,23,27) Management of the patients by a multi-disciplinary team aims to reduce their symptoms, improve their overall functionality and decrease their risk of reoffending, so that they may be gradually reintegrated into their communities.(9,12,17,21,24) If the patient is assessed as low risk, the head of the health establishment, may grant the patient a leave of absence (LOA) from the hospital, under the advice of the treating psychiatrist as per Chapter VI of the MHCA.(9,12,16,21,24,28,29) The State patient remains under the supervision of a suitable custodian (usually a family member) during the LOA. The custodian is responsible for: maintaining adequate housing for the patient; monitoring symptoms; and ensuring both adherence to treatment and abstinence from substance use.(16) After a State patient has been managed successfully in the community for at least two years, on extended LOAs, the treating psychiatrist may apply to the High Court to conditionally discharge the State patient.(9,12,13,16,21,28,29)

There has been a substantial increase in the number of institutionalised forensic psychiatric patients over the past two decades in South Africa.(9,14,15) In 1997, in the Western Cape there were 205 State patients, and in 2013 the database showed over 800 State patients. The number of state patients had almost quadrupled over 15 years.(9,27) In a study in the United States, Akram et al., noted that after the deinstitutionalisation movement, there were subsequent increased lengths of stay and readmissions, with a 76% increase in forensic psychiatric patients in state hospitals from 1999 to 2014.(14)

The profile of State patients, that is, having a mental illness and a history of criminal behaviour, further increases their risk to themselves and others, thus, relapse and readmission should be avoided at all costs.(19,21,24,30) Additionally, the reintegration and discharge of State patients into their communities is necessary to maintain the flow of patients awaiting admission to the limited forensic psychiatric beds.(10,25,28) Factors associated with readmission amongst

forensic populations have been researched in high income countries (HIC). However, it remains unknown whether these findings are applicable in low- and middle-income countries (LMICs), which face unique socio-economic challenges, and in some countries such as South Africa, very high levels of crime.(31) Although there are existing South African studies on State patients, there is a paucity of research identifying factors that are associated with readmission of State patients on extended leaves of absence, hence the need for this study. The aim of our study was to identify modifiable factors associated with readmission, in order to mitigate these factors, thereby preventing readmission and decreasing the demand for forensic beds.

2. Methods

2.1 Study design and setting

The study was a retrospective record review. Records of State patients readmitted to Sterkfontein hospital from extended LOA were sourced from the Sterkfontein patient registry (which documents all patients admitted, including State patients from LOA), Sterkfontein forensic wards, and Sterkfontein LOA clinic. A data sheet, based on a review of the literature, was compiled and relevant information was extracted from clinical notes, LOA forms (MHCA 27) and clinic referral letters which are given to State patients on LOA from Sterkfontein. These referral letters contain feedback from their local clinic regarding the reviews of State patients during their LOA.

2.2 Study population

All state patients, from Sterkfontein hospital, granted an extended LOA between January 2018 and September 2020 were included in the study.

2.3 Sampling method

A stratified method of sampling was used, the two strata being readmitted and non-readmitted State patients on extended LOAs, for the period of January 2018 to September 2020.

As the non-readmitted group was estimated to be substantially larger than the readmitted group, the non-readmitted group was determined using a randomisation protocol to create a balanced sample. A simple block randomisation for the non-readmitted group was used, selecting files from Sterkfontein LOA clinic (where files are arranged in chronological order) at random until a sample equivalent to the readmitted group was obtained, for the period between January 2018 and September 2020.

2.4 Inclusion criteria

Participants in this study included State patients who had been granted an extended LOA (three months or more) and who were subsequently readmitted from that LOA. The non-readmitted group was made up of State patients who were not readmitted from an extended LOA from Sterkfontein hospital.

2.5 Exclusion criteria

State patients under the age of 18 years were excluded from the study.

2.6 Ethics

Ethical approval for the study was granted by the University of Witwatersrand Human Research Ethics Committee (HREC M200875). Approval was also granted from the Sterkfontein Hospital Research Committee. As this was a retrospective clinical record review, no informed consent was obtained from the participants. All data collected from the clinical records of the patients, was kept confidential and was only made available to the first author. Patient anonymity was maintained using unique patient identification numbers (PIN).

2.7 Statistical analysis

The study compared the socio-demographic, clinical, forensic and psychosocial profile of State patients in the readmitted and non-readmitted groups in order to investigate any associations with readmission. All variables, except age, were categorical. Therefore, statistical comparisons using Pearson's chi-squared and Fisher's test analyses were used. Continuous data (age) was reported as the mean age with standard deviation (SD) and categorical data was presented as counts and percentages. Statistical analyses were conducted using R software (version 4.0.1; www.R-project.org). Model significance (p value) was set at 0.05.

3. Results

A total of 56 state patients were readmitted to Sterkfontein hospital from extended leaves of absence between 2018 and 2020. An equivalent number of non-readmitted state patients were randomly selected as the control group. Hence, there were 112 participants in the study altogether.

3.1 Socio-demographic factors

Table 1 tabulates the socio-demographic data for the readmitted and non-readmitted groups.

Table 1: Socio-demographic variables comparing readmitted and non-readmitted groups

Variable	**Readmitted N (%)**	**Non-Readmitted N (%)**	**P value**
Age (mean±SD in years)	41.1±9.2	40.6±10.9	p = 0.801
Gender			p = 0.203
Female	3 (5.4%)	8 (14.3%)	
Male	53 (94.6%)	48 (85.7%)	
Race			p = 0.219
Black	51 (91.1%)	46 (82.1%)	
Coloured	3 (5.4%)	3 (5.4%)	

White	2 (3.6%)	7 (12.5%)	
Marital Status			p = 0.494
Married	4 (7.1%)	6 (10.7%)	
Divorced	1 (1.8%)	0 (0%)	
Single	51 (91.1%)	50 (89.3%)	
Educational Level			**p < 0.001**
Mainstream School	51 (91.1%)	47 (83.9%)	
Remedial School	2 (3.6%)	3 (5.4%)	
No Formal Schooling	2 (3.6%)	5 (8.9%)	
Unknown	1 (1.8%)	1 (1.8%)	
Employment Status			p = 1.000
Employed	0 (0%)	1 (1.8%)	
Unemployed	56 (100%)	55 (98.2%)	
Monthly Income			p = 0.399
R 1000 - R 5000	33 (58.9%)	37 (66.1%)	
> R5000	0 (0%)	1 (1.8%)	
Unknown	23 (41.1%)	18 (32.1%)	
Source Income			**p = 0.000**
Work	0 (0%)	1 (1.8%)	
Family Support	0 (0%)	11 (19.6%)	
Disability Grant	33 (58.9%)	37 (66.1%)	
Unknown	23 (41.1%)	7 (12.5%)	
Residence			p = 1.000
Rural	1 (1.8%)	0 (0%)	
Urban	55 (98.2%)	56 (100%)	

3.2 Clinical and forensic factors

Table 2 tabulates the clinical and forensic variables associated with readmission. For the purpose of our study, engagement in criminal behaviour ranged from committing illegal acts without being charged (for example assaulting a family member) to being charged with a criminal offence. We found that engagement in criminal behaviour during LOA differed significantly between readmitted and non-readmitted groups (p = 0.004). None of the non-

readmitted group were documented as having any aggression or reoffending during LOA, while 16.1% of readmitted patients had engaged in criminal activity on LOA.

Table 2: Clinical and forensic variables comparing readmitted and non-readmitted groups

Variable	**Readmitted**	**Non readmitted**	**Statistics**
Number of years as state patient			p = 0.287
1-2 years	2 (3.6%)	1 (1.8%)	
>2 < 5 years	24 (42.9%)	30 (53.6%)	
>5 <10 years	13 (32.2%)	16 (28.6%)	
>=10 years	17 (30.4%)	9 (16.1%)	
LOA			**p < 0.001**
3 months	35 (62.5%)	2 (3.6%)	
4 months	1 (1.8%)	1 (1.8%)	
6 months	20 (35.7%)	53 (94.6%)	
Custodian of the patient			p = 0.287
Parent	25 (44.6%)	28 (50.0%)	
Spouse	3 (5.4%)	3 (5.4%)	
Sibling	17 (30.4%)	10 (17.9%)	
Grandparent	1 (1.8%)	0 (0%)	
Other	9 (16.1%)	15 (26.8%)	
Unknown	1 (1.8%)	0 (0%)	
Engagement in criminal behaviour on LOA			**p = 0.004**
Yes	9 (16.1%)	0 (0%)	
No	46 (82.1%)	56 (100%)	
Unknown	1 (1.8%)	0 (0%)	
Symptoms of relapse of mental illness on LOA			**p < 0.001**
Yes	44 (78.6%)	0 (0%)	
No	12 (21.4%)	56 (100%)	

3.2.1 Psychiatric diagnoses

With respect to the psychiatric diagnoses, due to patients having many different combinations of multiple diagnoses, diagnoses were grouped according to affective, cognitive, personality, psychotic and substance use disorders, as there were too many sub-categories for statistical analyses. In the readmitted group, 8.8% of patients were diagnosed with affective disorders, 12.3% had cognitive disorders, 12.2% had personality disorders, 36.8% had psychotic disorders and 29.8% had substance use disorders. Sixteen per-cent of the readmitted group had co-occurring psychotic and personality disorders. In the non-readmitted group, 6.9% had affective disorders, 10.4% cognitive disorders, 8.1% personality disorders, 45.3% psychotic disorders, and 29.1% substance use disorders.

3.2.2 Charges

The charges documented in the study were the original crimes the accused were charged with, that resulted in the study participants being classified as State patients. In the re-admitted group, 83.9 % were charged with crimes against a person compared to 62.5% in the non-readmitted group, which was a statistically significant relationship (p=0.018). Charges included murder, attempted murder, rape, sexual assault, assault with intent to do grievous bodily harm, domestic violence and kidnapping. Crimes against property (theft, robbery, fraud, malicious injury to property, arson, housebreaking) were less common in the readmitted group (8.9%) than in the non-readmitted group (14.3%). A large proportion of the non-readmitted group (19.6%) had committed both a crime against person and property. These findings were not statistically significant.

3.2.3 Substances used

Figure 1 shows the types of substances used between the two groups

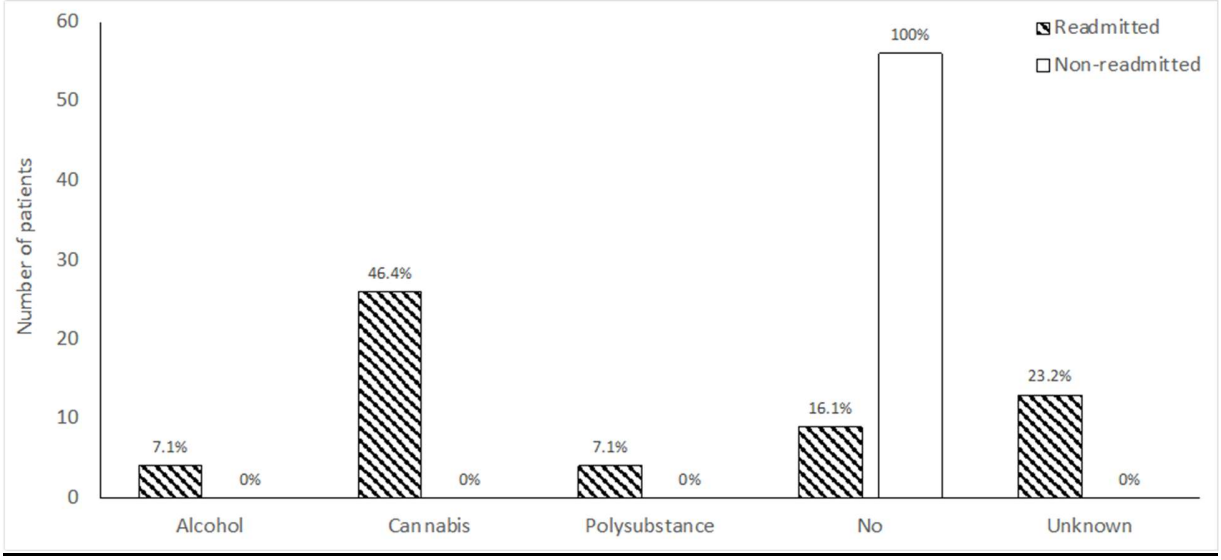


Figure 1: The type of substances used in readmitted and non-readmitted groups

3.3 Psychosocial factors

Figure 2 shows the supervision received by patients between the two groups.

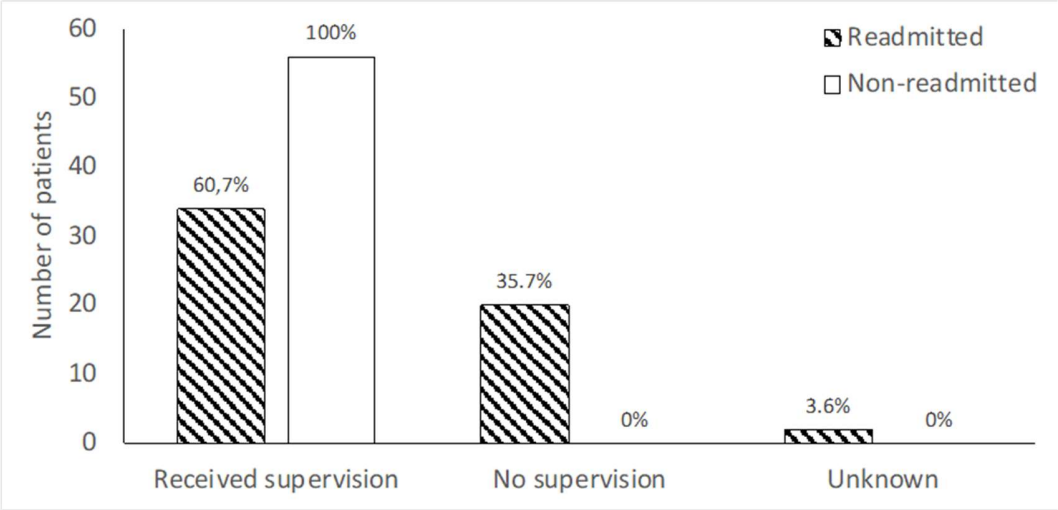


Figure 2: Supervision received by readmitted and non-readmitted groups

In the readmitted group, 25% of the total had custodians who had to attend work. The minority had custodians who used substances (1.8%) or had elderly caregivers (3.6%), or had been abandoned by family (1.8%), or were returned to hospital due to family conflict (1.8%), or were sent away from home due to substance use (1.8%). In 3.6% the reason for lack of supervision was unknown.

Figure 3 shows the availability of medication at the local clinics between the two groups

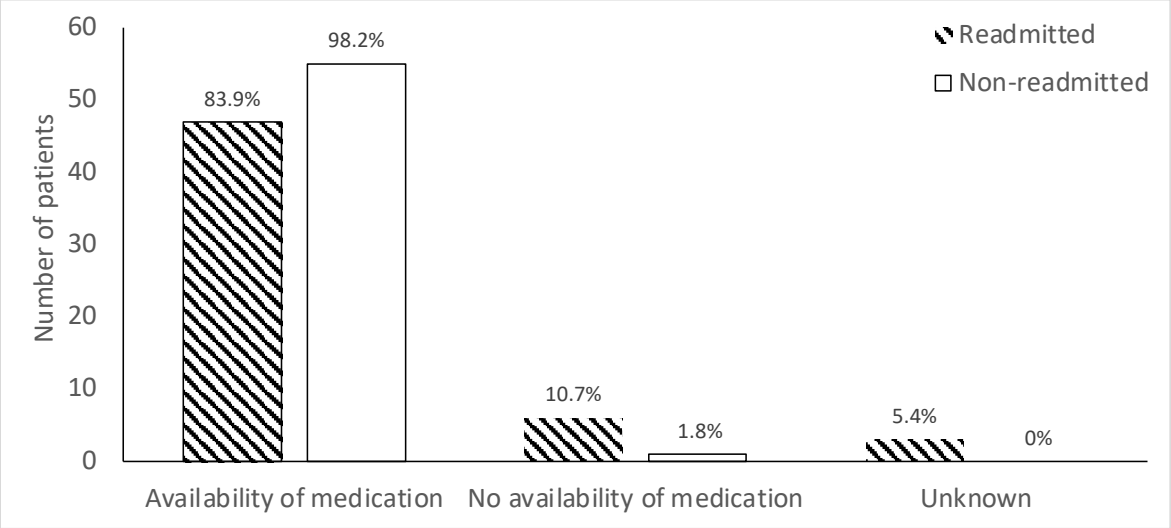


Figure 3: Availability of medication at the local clinic for readmitted and non-readmitted groups.

Where medication was reportedly not available at the local clinic, specific medications that were unavailable were documented. Of the readmitted group, 7.1% reported the unavailability of Olanzapine, 1.8% reported the unavailability of Amisulpiride, 1.8% reported the unavailability of Risperidone, while in 5.4% the unavailable medication was not documented. In the non-readmitted group, 1.8% reported no access to Olanzapine.

Figure 4 shows the treatment adherence between the two groups

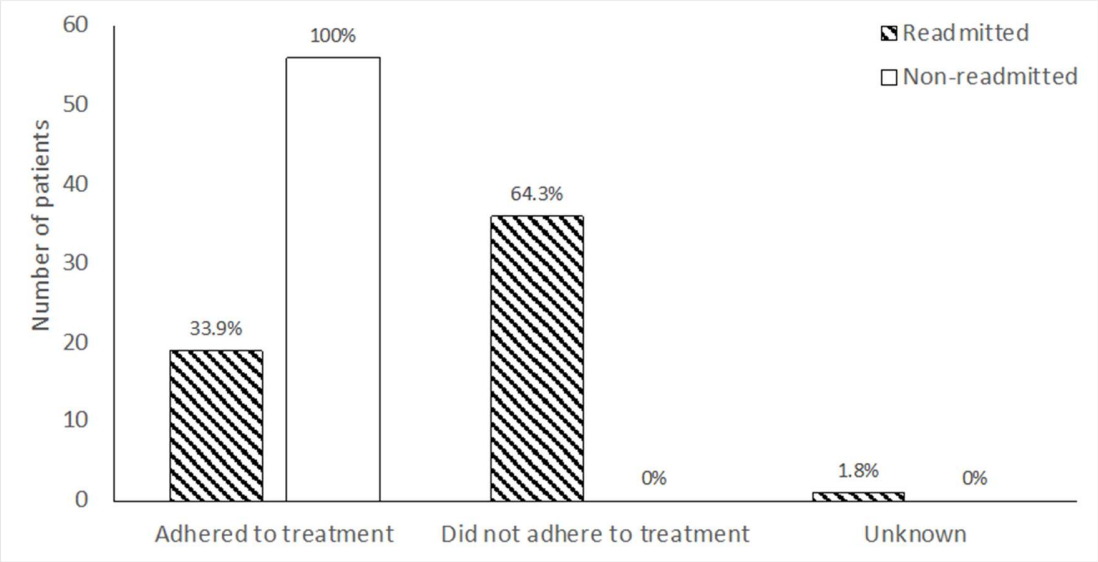


Figure 4: Treatment adherence in readmitted and non-readmitted groups

Unsurprisingly, the number of patients who adhered to their treatment during LOA differed significantly between readmitted and non-readmitted patients ($p < 0.001$).

4. Discussion

When comparing the profile of readmitted to non-readmitted State patients on extended LOA, there were statistically significant findings in the categories of: substance use; engagement in criminal behaviour; lack of supervision by custodian; poor availability of medication at local clinics; adherence to medication; and relapse of symptoms of mental illness on LOA.

4.1 Substance use

In keeping with international studies, one of the key findings of this study was that substance use was associated with an increased risk of readmission.(26,32,33) A Canadian study found that the most common reason for the readmission of forensic psychiatric patients was a change

in or worsening of psychiatric symptoms (46%).(26) Reasons for relapse were substance use (46%) and/or medication non-compliance (25%).(26) Prinsloo noted that State patients from Weskoppies hospital in Gauteng, who did not have a diagnosis of a substance use disorder (SUD) were associated with being conditionally or unconditionally discharged.(34) These studies underscore the importance of ensuring abstinence from substances in State patients.

Substance use has been found to be more prevalent in mental health care users as compared with the general population.(32,35,36) Substance use disorders are also more commonly found in forensic patients than in the general psychiatric population, and having a SUD presents a higher risk for engaging in criminal activity and entering forensic services.(32,35,37–39) Substance use disorders are often under-treated, especially in forensic settings, resulting in a poorer prognosis.(32,40,41) Research on treating forensic psychiatric patients with substance use disorders, in both inpatient and outpatient settings, is limited.(42)

Assertive Community Treatment (ACT) is a well-established international programme developed to ensure efficient outpatient psychiatric follow-up.(43) It was developed as an alternative to hospitalisation and requires a multi-disciplinary team offering comprehensive care of psychiatric patients through home visits.(32,44–46) Forensic Assertive Community Treatment (FACT) is an adaptation of ACT, which follows the same principles. However, in addition, it includes risk management which is required in forensic psychiatric care.(32) Implementing programmes such as ACT or FACT could assist State patients on extended LOAs, as several studies have reported improved abstinence from substances, as well as decreased readmission and recidivism rates with the use of FACT among forensic psychiatric populations.(32,47–49)

4.2 Engagement in criminal behaviour on LOA

Engagement in criminal behaviour during their LOA differed significantly between the readmitted and non-readmitted groups (p= 0.004) in this study. None of the patients in the

non-readmitted group re-offended on their LOA, in contrast with 16.1 % of patients in the readmitted group (Table 2).

Rates of recidivism differ in existing international studies. A Swiss study found that 51% of forensic psychiatric patients were reconvicted.(24,50) In Germany, a study on forensic psychiatric patients, reported that, upon discharge from inpatient care, patients who reported an unspecified housing situation in their clinic follow-up review, were more likely to reoffend, compared to patients living with a partner/family.(51) Based on these findings, it would be important to ensure that patients have adequate housing and social support on LOA.

4.3 Supervision

In our study, the majority of custodians of State patients were parents (44.6%) and siblings (30.4%), which was in keeping with their single marital status. Thirty-five percent of the readmitted group did not receive adequate supervision during their LOA. This differed significantly from those of the non-readmitted group, in whom there was 100% supervision ($p < 0.001$). Mathanya from Limpopo province in South Africa and Mothwa et al from Gauteng province in South Africa, conducted qualitative studies investigating the experiences of South African families caring for state patients during a LOA.(16,28) Most families reported that the patients' use of substances was uncontrollable and ultimately resulted in relapse. The families also reported that they had a lack of leisure time, and that caring for the patients disrupted the normal routine of household activities.(28) In our study, for the readmitted group, where reasons were stated in the clinical files to explain the lack of supervision, it was noted that, in 25% of the total readmitted sample, family members could not supervise the patients during the day, as they had to work. Mathanya noted similar findings, that is, families reported that because most forensic patients were unemployed, the family members (including the custodian) had to work to support them. Hence, custodians were unable to supervise patients

constantly.(28) Agarwal et al., in the United Kingdom, also found that key family members being employed affected supervision, resulting in poor adherence to medication.(52)

Mothwa et al. noted that families of State patients on LOA faced both emotional and social challenges. Many families reported being afraid of the State patients' possible aggression or relapse, as well as experiencing social stigma associated with their family member (the State patient) committing a criminal offence. Based on such challenges, families in both local and international studies, felt they were ill-prepared to care for forensic patients and, in some cases, even returned the patients to the hospital despite having not relapsed.(16,28,53,54) In our study, we found that 21.4% of the readmitted group had not relapsed, but had still been readmitted, as their families had no longer been able to care for them. Mothwa et al found that patients' families had established ways of coping, such as, turning to spiritual leaders and creating supportive community groups. However, further support was required from the psychiatric institutions, to ensure open communication with the patients' families, social workers and doctors.(16)

4.4 Adherence

Adherence to treatment is defined as the degree to which patients take treatment as prescribed by their health care providers.(55,56) The number of patients who had adhered to their treatment during their LOA differed significantly between the readmitted and non-readmitted groups ($p < 0.001$). A study in Pakistan, conducted on general psychiatric patients, noted that sedation (30%), medication costs (22%), and poor psychoeducation by doctors (92%) were the main reasons for poor adherence.(55) Some of these factors may have accounted for non-adherence in the readmitted group in our study, as well as the unavailability of certain medications at the local clinic, however, the exact reasons were not recorded in the source files in our study.

4.5 Availability of medication at local clinic

In our study, for a statistically significant proportion of the readmitted group (10.7%) medication was unavailable at the local clinic, compared to 1.8% of the non-readmitted group ($p = 0.027$), with Olanzapine being the most commonly unavailable drug. Medication shortages are a global problem and also occur in the South African public health sector due to factors such as financial constraints and government allocated manufacturers not being able to supply required quantities.(58,59) The World Health Organisation's Investing in Mental Health Report (2013), found that the inability to access appropriate psychiatric medication could be associated with relapse, which has several negative consequences, such as readmission, unemployment, and social isolation.(60)

4.6 Additional significant findings

Significantly more patients ($p < 0.001$) were readmitted from a three-month LOA (62.5%) compared to a six-month LOA (35.7%). Hence, patients on three-month LOAs would require closer monitoring and intensive rehabilitation to decrease readmission rates. Another statistically significant finding was state patients' level of education ($p< 0.001$), with more of the non-readmitted group having had no formal education (8.9%) and 5.4% having attended a remedial school. This finding was surprising as one would assume that a higher level of education would result in better insight and fewer readmissions, however, the converse occurred here. Perhaps it can be explained by individuals attending remedial schools or having no formal education requiring closer supervision by caregivers hence better adherence and fewer admissions. No relevant local or international studies on forensic psychiatric patients' educational level were found to compare these findings with.

5. Conclusions and recommendations

General psychiatric inpatient care, particularly hospitalisation in secure psychiatric units, is a costly service. Forensic psychiatric patients have a longer length of stay than general psychiatric

patients requiring more resources. Hence, readmission and continued hospitalisation should be avoided.

If forensic patients are returned to their communities of origin which are known to have high prevalence rates of substance use and violence, interventions to mitigate these factors should be prioritised to prevent relapse, reoffending and readmission. Substance rehabilitation services should also be strengthened, and programmes such as FACT should be considered, including the provision of support for families of forensic psychiatric patients. However, these interventions may prove challenging in a resource-constrained setting like South Africa.

More research is needed in South Africa on state patients' including studies on recidivism rates and factors associated with non-adherence. Using standardised templates when reviewing patients at LOA clinic visits, as well as the use of an electronic database, will improve quality of future research.

6. Study limitations

As this was a retrospective study, there were limitations with regards to the uniformity of data available in clinical files or records. The inconsistency of record-keeping resulted in some variables showing zero percent, 100% results or unknown results. For example, with regard to non-adherence, the reasons for non-adherence during LOA were not documented. In addition, with respect to non-readmitted patients who did not attend their clinic appointments on the allocated day, the clinic staff did not record whether these patients had absconded or not. The LOA clinic statistics and diaries for the period of January 2018 to September 2020, with which the total number of patients granted LOA could be calculated, were not readily available. The sample size and time period of the study could also be regarded as limitations, as the study

period was too short to allow for a greater sample size. Although the sample size was adequate for comparative analysis, a larger sample may have elicited more varied results.

A significant portion of the study period was during the Covid-19 pandemic in 2020, which included the strict level five lockdown measures. This could have been a factor influencing several variables such as loss of income, availability of medication or access to services and substance use. Lastly, the results from this study may not be generalisable to all State patients and forensic units in South Africa.

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8. Competing Interests

The authors declare that there are no competing interests.

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