

**A RETROSPECTIVE REVIEW DESCRIBING THE PROPORTION OF
MEDICAL PATIENTS WHO PRESENT WITH SYMPTOMS OF
PSYCHOSIS IN THE MEDICAL ADMISSION WARD AT TSHEPONG
HOSPITAL**

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ABSTRACT

Background: The literature shows that a small proportion of medical conditions present with a symptom of psychosis. However, in practice, a large proportion of human and financial resources are spent on investigating the aetiology of psychosis.

Objectives: 1) To describe the socio-demographics and clinical characteristics of the study population. 2) To determine the proportion of patients admitted with psychotic symptoms and who had a discharge diagnosis of a primary psychiatric disorder or a secondary psychiatric disorder. 3) To describe the laboratory investigations that were conducted on all patients to exclude a medical illness on admission. 4) To calculate the total cost per patient for investigations done upon first contact, i.e., emergency department.

Methods: A one-year retrospective review (6 April 2020 until 5 April 2021) was conducted. The data was collected from Tshepong Hospital. 317 patients were identified of whom 306 were included. The data was described using percentages, bar graphs and p-values. A p-value of <0.05 was deemed to be significant.

Results: Most of this study's population were males (77.45%), black ethnicity (78.14%) with an average age of 32.6 years and were unemployed (67.65%). 50.98% of the cohort used substances, with cannabis being the most consumed substance. 48.69% had a medical comorbidity, with HIV being the most common comorbidity, followed by hypertension. 24.52% had a history of psychiatric disease. Of those admitted with psychosis, 54.25% were discharged with a primary psychiatric disorder and 15.03% with a secondary psychiatric disorder. Urea, creatinine and electrolytes was the investigation that was done the most ($n=225$), followed by a full blood count ($n=224$). Two patients were tested for HIV. Other investigations done included calcium, magnesium, phosphate, liver function test, folate, vitamin B12, lipogram, urine drug screen and computed tomography. The total cost of the investigations amounted to R 282 498,90. The cost per patient of the primary psychosis discharge group was R 1135.55 and was R1209.36 in the secondary psychosis discharge group.

Conclusion Most of those who presented with psychosis had a discharge diagnosis of psychiatric disease. We thus recommend the following 1) a screening questionnaire be implemented in the emergency department particularly for the psychotic patient. 2) adequate supervision of junior staff, 3) improving clinical skills and assessments by the medical team in the emergency department, thus, to practice targeted laboratory investigations. 4) the possibility of drafting a South African guideline to investigate psychosis that is tailored to local aetiologies.

INTRODUCTION

The National Institute of Health defines psychosis as ‘conditions that affect the mind, where there has been some loss of contact with reality.’^[1] Psychosis often involves symptoms of hallucinations, delusions, incoherent speech, and behaviour which is abnormal for the situation.^[1] These symptoms are described as negative and positive symptom, and they indicate an underlying medical or psychiatric disease. Primary psychosis refers to a psychiatric disease, whereas secondary psychosis refers to an underlying medical disease as the cause of the psychosis.^[2,3]

A scoping review published by MC Greene et al in 12 African countries showed a lifetime prevalence of 1.0% to 4.4% for psychotic diseases and 3.7% to 13.3% for substance use disorders.^[4] This range is similar when compared to the findings of a meta-analysis done by B Moreno-Küstner et al that showed a lifetime prevalence of 7.49 per 1000 persons,^[5] and the findings of a study undertaken in Finland which showed that the lifetime prevalence of psychosis was 3% and within which secondary psychosis accounted for 0.21% (7.00% of the total)^[3, 6]

Recent literature shows that only a minority of medical conditions will present with symptoms of psychosis.^[2] When the underlying cause of the psychosis is due to a medical cause, it can often be identified by other features synonymous with a particular disease. The most common systems involved with secondary psychosis include diseases of the hepatic or renal system (encephalopathy), neurological diseases (dementia, Huntington’s disease), infectious diseases (syphilis, herpes encephalitis and prion disease), inflammatory diseases (auto-immune encephalitis, systemic lupus erythematosus, multiple sclerosis) and metabolic disorders (porphyria, Wilsons disease).^[7]

With regards to primary psychosis, The Diagnostic and Statistical Manual of Mental Disorders 5 (DSM-5), identifies a handful of conditions that present with psychosis. These conditions include the schizophrenia spectrum, bipolar disorder, a major depressive episode, and conditions relating to intoxication or withdrawal from substances.^[8] Primary psychosis may be associated with certain comorbid conditions, occurring concurrently.^[7] The comorbid conditions which are commonly associated with psychosis include substance use disorder, mood disorders, and metabolic syndrome.^[7]

Metabolic syndrome is a group of conditions which include abdominal obesity, hypertension, diabetes, and dyslipidaemia.^[9] Studies have shown a definite correlation between severe psychosis and metabolic syndrome.^[9] There are three mechanisms proposed as the cause for the correlation between metabolic syndrome and primary psychosis.^[9] The first is that patients with schizophrenia are less active compared to healthy controls.^[10] They also have more sedentary lifestyles which include a diet high in calories as well as cigarette smoking.^[10] The second theory is that there is a direct link between insulin resistance and schizophrenia^[11] Thirdly, patients who are on anti-psychotic medication, experience the components of metabolic syndrome as a side effect of their treatment.^[12]

To determine whether the cause of the psychosis is primary or secondary, a good clinical history and proper examination can help guide the clinician with regards to the further work-up that is needed to make a definitive diagnosis.^[13] Certain symptoms such as auditory hallucinations and complex delusions will suggest primary psychosis, whereas visual hallucinations usually allude to a secondary cause.^[2,3,14] A study published by Webster and Holroyd found that the patients who had a medical cause for the psychotic symptoms, presented initially with visual, olfactory, or gustatory hallucinations and no auditory hallucinations or delusions.^[15]

The American College of Emergency Physicians suggests that taking a thorough history and physical examination is adequate for a patient to be cleared from medical conditions causing psychosis.^[2] They do not recommend routine laboratory investigations.^[2] Similarly a retrospective study done in a Cape Town hospital emergency centre concluded that it is unnecessary to do a set of blanket investigations if the history and clinical examination is not suggestive of a medical cause.^[16] Of the 748 patients evaluated in their study, only 2.54% had a medical cause for their psychotic episode.^[16] These studies purport that the psychotic patient can be cleared from general medical conditions in the emergency department without doing an array of investigations. However, the psychiatric fraternity of South Africa suggest doing a full blood count (FBC), serum electrolytes, urea and creatinine (U&E), liver function tests (LFT), venereal disease research laboratory test (VDRL), thyroid function tests (TFT), human immunodeficiency (HIV) test, urine toxicology, and occasionally a computed tomography scan of the brain CTB).^[17] These tests have large financial implications and amounts to a per patient cost of R1011, 87 (with an addition of R4155,37 if a CTB is done)^[18] They however do not mention the need for a lumbar puncture, vitamin B12 levels, folate levels, a pregnancy test or measuring calcium levels as routine investigations as was suggested by other sources.^[16] If these additional tests are to be done, it will add another R590,99 to the above cost.^[18]

From the various recommendations and findings, we can conclude that there is a lack of uniformity and protocols regarding how the psychotic patient should be managed and investigated. These differences impact both patient management and have financial implications for the institution.

The objectives of this study were to; 1) describe the socio-demographics (age, gender, ethnicity, employment status) and the clinical characteristics (comorbid conditions and substance use) of the study population. 2) To determine the proportion of patients admitted with psychotic symptoms and who had a discharge diagnosis of a primary psychiatric disorder or a secondary psychiatric disorder. 3) To describe the laboratory investigations that were conducted on all patients to exclude a medical illness on admission. 4) To calculate the total cost per patient for investigations done upon first contact, i.e., emergency department.

METHODS

Study design and setting

This study was a retrospective review of all patients who presented with a symptom of psychosis to the internal medicine admission ward of Tshepong Hospital between the dates of 06/04/2020 until 05/04/2021. Tshepong Hospital is part of a hospital complex in Klerksdorp in the Northwest Province of South Africa. The hospital offers tertiary services, serves all surrounding towns and acts as a referral centre for District Hospitals.

Sampling and inclusion criteria: All patients over the age of 13 years were included in the study. The nurses' admission book in the internal medicine admission ward was used to identify eligible patients. The eligible patient was one whom the nurses recorded in their admission book as "acute psychosis". Using convenient sampling from all admissions over a one year period, a total of 317 patients were identified to be eligible for inclusion. However, as 11 files could not be found, the final patient sample considered in this study was 306. Thus, the sample size comprised all patients that met the inclusion criteria between 06/04/2020 until 05/04/2021.

Data collection

Admission records were used to extract data regarding the admission diagnosis, demographic data, employment status, location, comorbidities, substance use, all investigations done in the emergency department and discharge diagnosis. However, some of the files had missing information. The data was populated into a Microsoft Excel Spreadsheet (version 2308).

Statistical analysis

Data was analysed using Stata 16.1 (Statacorp, College Station, Texas USA). The extracted data was cleaned using Stata and coded accordingly. Continuous variables were presented as means with standard deviation (SD) and 95% confidence intervals after assessing for their normality distribution using the Shapiro Wilk test. Categorical variables were presented as counts and proportions. Bar charts were used to visualise categorical variables. To compare categorical variables, a Chi-squared test was used. A p-value of <0.05 was deemed statistically significant.

Ethics

Ethical approval to access the patients' files was granted by the management at Tshepong Hospital. Approval to conduct the study was granted by the Research Ethics Committee and the Graduate Studies Committee of the University of the Witwatersrand (Human Research Ethics Committee number: M220354).

RESULTS

Demographics of entire population

The mean (SD) age of patients in this study was 32.6 (12.9) years. Table 1 in the addendum shows the socio-demographic and clinical characteristics of the study population. The majority of the participants were males (n=237; 77.45%), aged 18-30 years (n=133; 43.5%) and were of black ethnicity (n=239; 78.14%). Most patients in this study were unemployed (n=207; 67.65%). A history of psychiatric illness was present in 24.52% (n=75) of patients and 50.98% (n= 156) of patients were using substances.

Slightly more than half of the patients used substances (n=156; 50.98%). Figure 1 shows the substance used by most patients. Of those who used substances, the most common substance used was cannabis,(n=120;76.96%) followed by crystal meth (n=59;37.82%) and alcohol (n=27;17.31%).

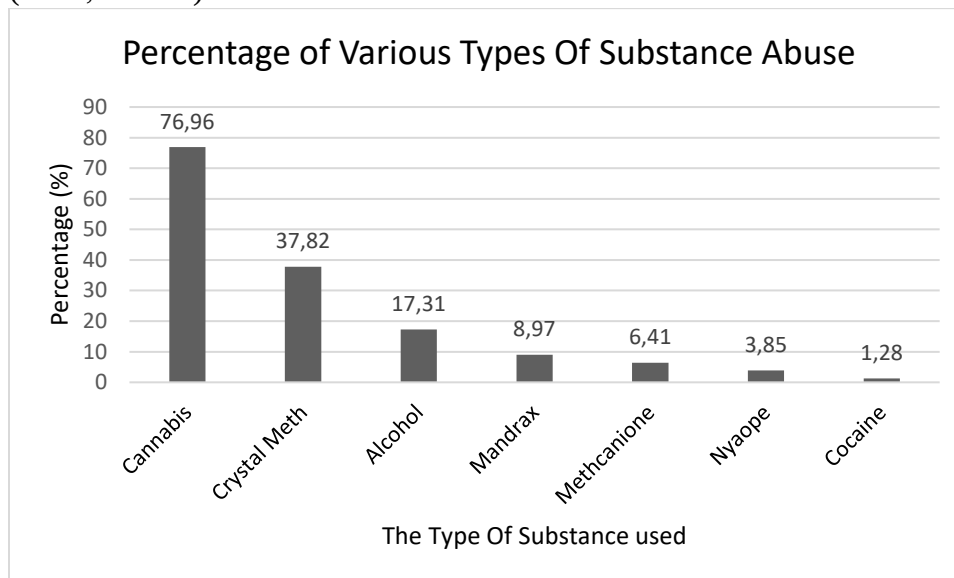


Figure 1: Percentages of various type of substance abuse

A history of a medical comorbidity was present among 149 (48.69%) patients. Figure 2 shows the various comorbidities found amongst the patients. Amongst those with a history of comorbidities, most of them were HIV positive (n=58;59.18%) and with hypertension (n=23;23.47%) and epilepsy being identified in an equal number of patients. (n=23;23.47%).

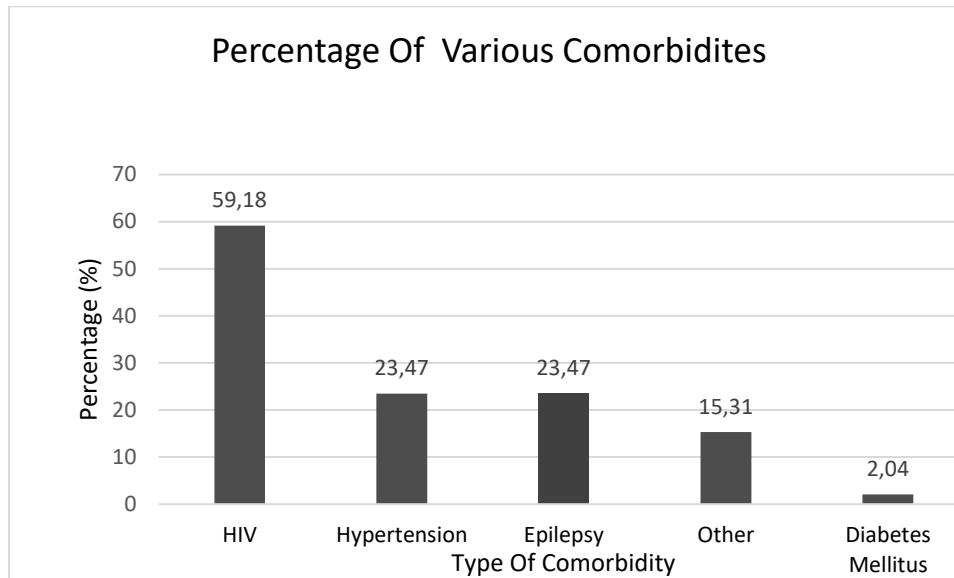


Figure 2: Percentage and type of comorbidities

Figure 3 shows the difference between admission and discharge diagnosis.

The most common diagnosis at admission was acute psychosis (n=185; 60.5%) followed by SIPD (n=39; 12.75%) and organic mental disorder (n=12; 3.92%). In only 1.96% (n=6) was a psychiatric disorder diagnosed. A diagnosis was missing in 20.92% (n= 64) of patients. The discharge diagnosis did not correlate with the initial diagnosis. Figure 4 shows the discharge diagnosis of the patients. The proportion of patients admitted with psychotic symptoms and who had a discharge diagnosis of a primary psychiatric disorder was 166 (54.25%) and a diagnosis of secondary psychosis was 46 (15.03%). The remainder were classified as “acute psychosis” (n=19; 6.21%) and unknown (n=75; 24.51%).

The most common diagnosis at discharge was SIPD (n=86; 28.10%), followed by a diagnosis of a psychiatric disorder (n=80; 26.14%) and organic mental disorder (n= 46; 15.03%).

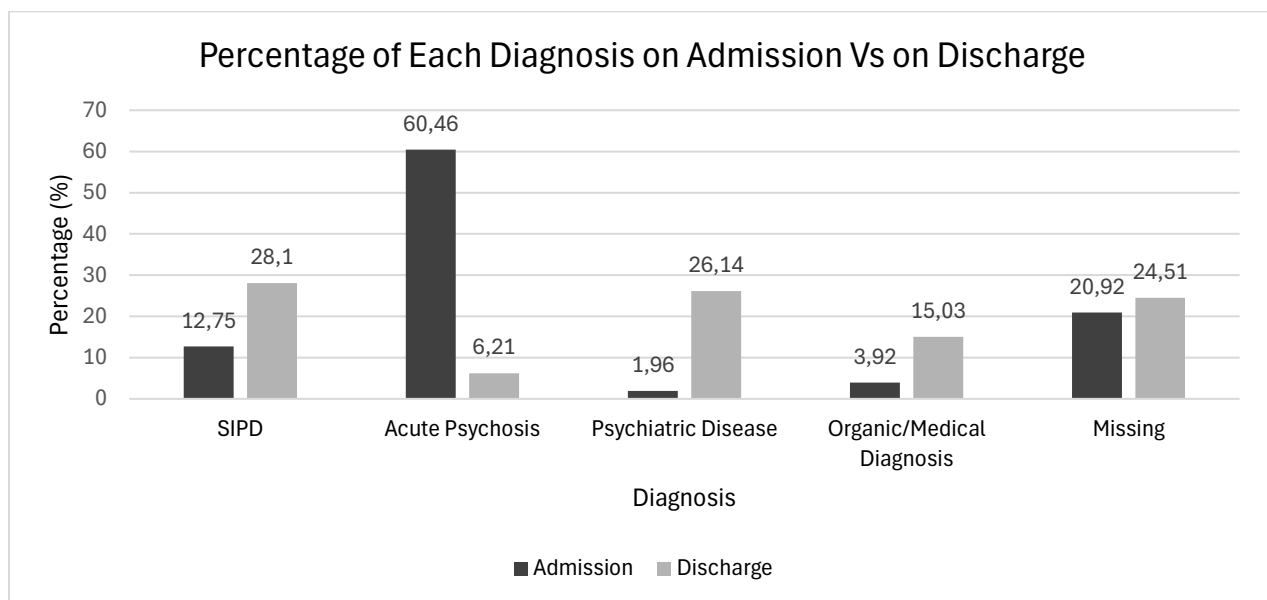


Figure 3: Diagnosis at admission and discharge

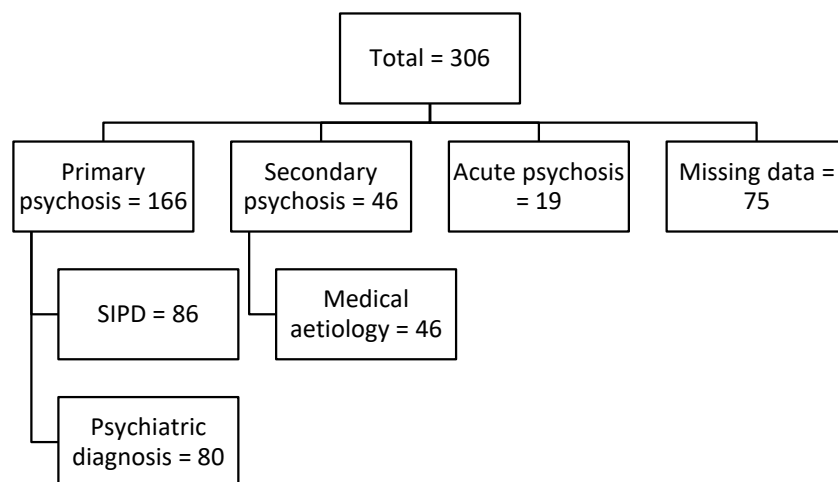


Figure 4: Discharge diagnosis of the cohort.

Socio-demographic and clinical characteristics associated with the group with a discharge diagnosis of primary psychosis compared with the group with a discharge diagnosis of secondary psychosis (see Table 2).

There was a statistically significant association between a discharge diagnosis of primary psychosis and substance use ($p < 0.001$) and age group of 18-30 years ($n=97$; 58.43%), with a p-value of < 0.001 .

There was a statistically significant association between a discharge diagnosis of secondary psychosis and a history of medical comorbidities ($p < 0.001$) and age group of 31-50 years ($p < 0.001$).

There was no statistically significant difference between the two groups with respect to race and gender whilst employment status was marginally different. There were also no statistically significant associations between the specific medical comorbidities or the specific substance of use

Correlation between admission versus discharge diagnosis

While there was agreement in diagnosis in 63 patients (20.59%), most patients' admission and discharge diagnosis were different (n=168, 54.91%, $p<0.001$). 28 patients were assessed as having SIPD upon admission and had the same diagnosis on discharge. 18 were diagnosed with acute psychosis upon admission and on discharge, 6 patients in the psychiatric disorder group and 11 patients in the medical diagnosis group.

Diagnosis	SIPD (discharge)	Acute Psychosis (discharge)	Psychiatric disorder (discharge)	Organic/ Medical diagnosis (discharge)
SIPD (admission)	28	1	7	2
Acute Psychosis (admission)	58	18	66	33
Psychiatric disorder (admission)	0	0	6	0
Organic/ Medical diagnosis (admission)	0	0	1	11

Table 1 Agreement between admission versus discharge diagnosis

Investigations and cost determined by the investigations done on admission

The most common investigations done on admission included a full blood count (n= 224), urea, creatinine and electrolytes (n= 225), liver function tests (n= 204), vitamin B12 (n= 149), folate (n= 137) lipogram (n=142) and calcium, magnesium, and phosphate (CMP) (n= 196). Only 2 patients had a computed tomography scan of the brain (CTB), 22 patients had a urine drug screen (UDS), and 2 patients were tested for HIV. The total cost of the cohort was R 282 498,90 and the average cost per patient was R 923.20. The cost of the admission investigations in the two discharge groups were similar. R 1135.55 was spent in the primary psychosis group and R1209.36 spent in the secondary psychosis group.

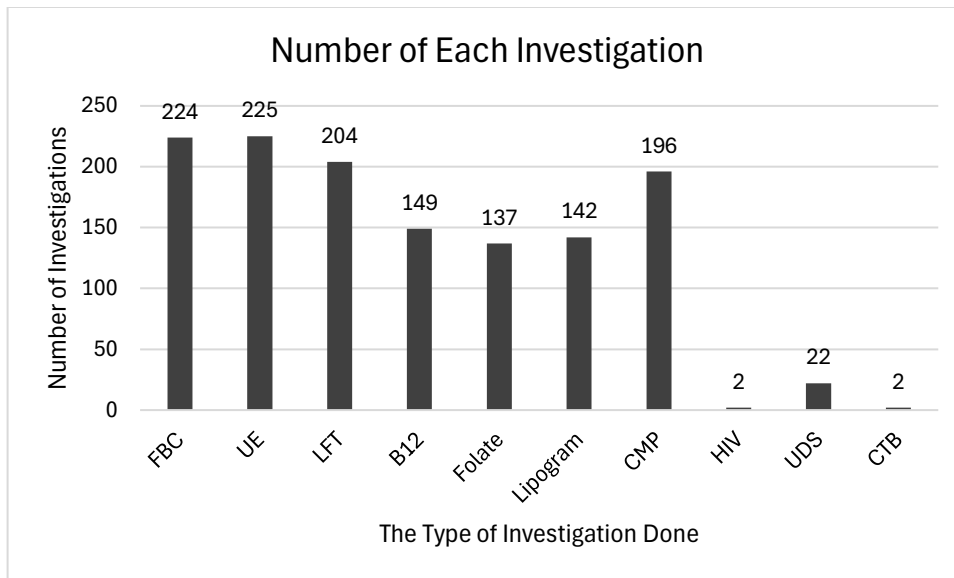


Figure 5: Number of each investigation done in the cohort

Discussion

According to research, it is a common occurrence for patients to present to an emergency department with symptoms of acute psychosis.^[6] From the various recommendations and findings emerging from these studies, there are differing protocols regarding how to determine whether the cause of the psychosis is primary or secondary without doing an array of investigations, which will have an impact on both patient management and financial implications for the institution.

In this study we identified 306 patients who presented with a symptom of psychosis and where the majority (n=166) were discharged with a primary psychiatric disorder. This finding contrasts with a recent study published in the Journal of Emergency Medicine.^[19] That study evaluated 156 patients over a six-month period who presented with a first presentation of psychosis at a South African tertiary hospital emergency department. Their results showed that 54.7% of patients had an underlying medical condition causing the symptom of psychosis.^[19] HIV was highlighted as being a major contributing factor in the underlying medical condition,^[19] which had also been noted in our study's population of secondary psychosis. A factor to consider in our study is the period in which the data was collected (i.e. during the Covid pandemic). There have been studies showing the increased incidence of psychiatric disorders during the Pandemic.^[20]

This study also showed a correlation between patient age and the eventual discharge diagnosis. We found that patients who were in the age group 18-30 years and who were substance users, were more likely to have a discharge diagnosis of primary psychosis. This finding is supported by various other studies that concluded a similar age group for patients who present with psychotic symptoms and noted that an age group of 15-35 years would be a risk factor to develop primary psychosis.^[21,19] Those in the age group of 31 – 50 years who also had a history of comorbidities, were more likely to be diagnosed with secondary psychosis. This was also found to be true in the study done by Etlouba Y et al.^[19]

Substance abuse was the second most common cause of psychotic symptoms in one study^[19] and other studies report on the significant correlation between psychosis and substance use.^[22] Thus, our findings are in keeping with what was found in the literature and on its own, substance use and age, have the potential to contribute to the high incidence of psychosis in this area. Many of the patients in this study who were diagnosed with primary psychosis were also diagnosed with substance abuse. It is difficult to comment on whether drug use is a comorbidity of a primary psychiatric disease or if substance abuse is the primary cause of the presenting symptom. This finding also highlights the burden of substance abuse in the community and poses the question about accessibility to illicit drugs in the community. Cannabis was found to be the most common drug used and was often used in conjunction with another drug. Studies particularly highlight the link between cannabis and psychosis.^[21,22] One theory mentioned is that there is an interplay between genetic and environmental factors and that cannabis alters the catechol-O-methyltransferase enzyme (COMT).^[21] COMT activity is reduced which leads to an increased risk of developing psychosis.^[21] More than 50% of our cohort were males of a young age and were using substances. Only 17 females used substances. A good clinical history, including a history of substance use, and physical examination, can help the clinician make a diagnosis without

having to do an array of investigations in this population. The investigations should be tailored, based on what is found in the history and on examination.

67.65% of this study's cohort were unemployed. Even though the employment status was found to be statistically insignificant, the unemployment rate of this study's cohort was still significantly higher than the overall unemployment rate in South Africa in 2021, which was 34.9%.^[23] The national statistics also showed a higher rate of unemployment in the age group of 25 to 34 years (40.5% unemployed) and the average age of our cohort was 32.6 years.^[23] A contributing factor to consider for the high unemployment rate in this study, would be that the timeline of this study was during the Covid-19 pandemic and lock down period for the country. As a result, many people were unable to work due to Covid restrictions. Studies have shown that there is a link between employment status and substance use.^[24] Unemployment has been linked to increased use of substances in the short term, as a coping strategy with the potential to develop dependency. This opens the potential to develop a cycle of unemployment and substance use.^[24] Besides the potential of turning to substances, unemployment can cause significant psychosocial stressors, leading to further mental distress.^[24]

The majority of our study's cohort were males (n=237; 77.45%) and the average age was 32.6 years. The gender in this study was found to be non-significant statistically, but data from other studies, for example, research by C Brasso, et al.^[24] identified being male as a risk factor associated with the development of psychosis.

Our female population was only 22.55% of the cohort, thus the data was limited and makes it difficult to determine on initial presentation what the cause of psychosis is likely to be.

When comparing the data of this study to others, we found that the prevalence of secondary psychosis was much higher in Tshepong Hospital.^[3,6,25] 15.03% of our studies cohort had a secondary cause for their psychosis upon discharge, whereas a study done by Perälä J, et al. showed a 3% lifetime prevalence of psychosis, where only 0.21% of the 3% (i.e. 7% of their cohort) were due to a secondary cause of psychosis.^[6] Another study showed only 5% had a secondary cause of psychosis.^[25] However, the ratio of primary to secondary psychosis followed the same pattern in this study when compared to others (i.e. more than 50% had a primary psychiatric diagnosis upon discharge).^[3,6] Respectively, the one study showed 93% of the lifetime prevalence of psychosis is due to primary psychosis^[3] and the other study showed 92.7% had a primary cause of their psychosis.^[6]

Although none of the patients in this study had been diagnosed with Covid-19 infection, Covid-19 has been shown to cause psychosis via pathophysiological mechanisms.^[26] However, we need to take into consideration the impact that the disease had on the community and how this impacted on the mental health of the population. Stressful events such as lack of income generating opportunities, job retrenchment, psychosocial stressors pertaining to being quarantined, and loss of family members and friends due to death, could be contributing factors.^[26] Such stressful events can have a direct mechanism of action on molecular targets of psychosis in the brain, i.e., the dopaminergic pathway.^[26]

HIV was noted to be the most common comorbidity in both groups of patients. It is well documented that there is a high burden of HIV disease in South Africa^[27] and HIV on its own could be a cause of psychosis.^[7] Studies also show that the prevalence of HIV is higher in rural areas compared to urban areas.^[27] This makes it very difficult to distinguish the primary etiology of the symptoms and in most cases, there is a combination of contributing factors.

With regards to investigating the patient who presents with a symptom of psychosis, based on the findings of this study as well as the supporting literature, our viewpoint is that certain investigations which are being done in the study hospital, are not routinely needed.^[16,17] These investigations include a lipogram, vitamin B12 and folate levels. Dyslipidemia as a component of metabolic syndrome, can be a comorbidity of primary psychosis, but not the cause.^[7,9] As studies have shown a link between metabolic syndrome and secondary psychosis, we must consider the possibility of vascular dementia.^[7] However, the progression of disease will be different when comparing someone with vascular dementia and a primary cause of psychosis. Although deficiencies in vitamin B12 and folate can cause symptoms of psychosis, psychosis is not a common finding in these deficiencies.^[28] The most common findings clinically are a history of cognitive decline, neuropathy, anemia, and jaundice.^[28] All of these findings can be determined by taking a history and examining the patient. Both the study done by The American College of Emergency Physicians^[2] and the study done in Cape Town^[16] emphasized the importance of the history and physical examination and how this should guide the physician to do the appropriate laboratory investigations. Amin and Wang's study investigated patients who had a background of psychiatric illness and who presented to an emergency department with an acute psychotic episode.^[29] Their results confirmed that a good history and physical examination are effective screening methods for possible abnormal or normal laboratory investigations.^[29] A retrospective study by Feldman and Chen evaluated all the routine investigations performed on a cohort of admitted psychiatric patients. They identified 809 tests of which only 4 test results lead to a change in the treatment plan.^[30]

The cost of investigations in the two discharge groups were similar. R 1135.55 was spent in the primary psychosis group and R1209.36 spent in the secondary psychosis group. The total cost of our cohort was R283 209,90 for investigations done in the emergency department over a one-year period. 142 patients had a lipogram done on presentation with a total cost of R35 423,32. Vitamin B12 testing accounted for R18 116, 91 and folate testing amounted to R16 598, 92. The number of patients who were diagnosed with dyslipidemia, vitamin B12 and folate deficiency were negligible in this study and were included in the group of "other" comorbidities. Even though only 60 patients had a known diagnosis of HIV, only 2 additional patients were tested for HIV. The cost of an HIV rapid test is R48,12^[18] which is approximately a third of the price of a folate test (R121,16).^[18] With the high burden of HIV and HIV as a potential cause of psychosis, as well as the high proportion of patients using cannabis, we recommend that money rather be spent on HIV testing and urine drug screens instead of folate, vitamin B12 and lipogram testing in the acute setting. A possible reason for the non-directed set of investigations could be that junior doctors without much experience of treating a psychotic patient are the doctors evaluating the patient upon first contact. Other possible reasons include using laboratory tests to compensate for inadequate

clinical assessments, to meet patient expectations or for fear of missing a particular diagnosis, i.e., defensive medicine.

Limitations and strengths

These results are from one hospital in a particular catchment area within South Africa. As a result, this may not reflect what happens in hospitals elsewhere in South Africa. As this is a retrospective study, and the records were not designed for this study, the available data were not always complete and, in some circumstances, identified files could not be traced and had to be excluded. This study did not take into consideration the investigations that were conducted on the patient once they had left the admission ward as well as rapid or point of care tests that could not be traced via the National Health Laboratory Service. The results of the laboratory investigations were not analysed in any detail. It was assumed by the author that a laboratory result was insignificant if it did not impact on the discharge diagnosis. It is recommended that future studies analyse the laboratory results in those who present with secondary psychosis.

This study did not take into consideration the specific psychiatric disease or type of medical condition diagnosed as this was not an objective of this study. It is recommended that this be considered in any future similar studies. The study was inexpensive to execute due to its retrospective nature. It also allowed the author to capture various types of data simultaneously in an unbiased manner. The method of this study is such that it is also easy to replicate.

Conclusion

This study particularly highlighted the burden of substance abuse and HIV in a rural community and how it influences the burden of disease in a particular area of South Africa with regards to investigating and treating a symptom of psychosis. Given austerity measures and budgetary constraints in the South African health sector, the total costs of these investigations can be a drain on both human as well as on economic resources. Based on the findings of this study, we can recommend that ,1) a screening questionnaire be implemented in the emergency department particularly for the admission of psychotic patients. Factors to consider when drafting such a questionnaire would be the prevalence of diseases in the community (e.g., HIV and substance abuse in this population), demographics (young male versus female) and employment status. 2) Junior staff in the emergency department be adequately supervised. 3) Clinical skills and assessments by the medical team in the emergency department be improved, thus, resulting in targeted laboratory investigations. 4) A South African guideline on investigating psychosis that is tailored to local aetiologies, be drafted.

Furthermore, we looked at the cost of investigations done on admission, which is a small proportion of the total hospitalisation costs. Thus, the health economics of alcohol, cannabis and other substances related to hospital admissions should be calculated to understand what effect it has on the healthcare spend budget, and whether funds could be better spent on social upliftment programs to improve control of the financial impact of SIPD. Presently, this study is the only one of its kind in South Africa. We therefore recommend that this study be duplicated at multiple centres across the province or country to help draft a unified guideline which is both complete and financially aware for the management and work up of the acutely psychotic patient upon admission.

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Conflict of interest

None

Author contributions

Conceptualisation of the topic, methodology, data collection, protocol and draft writing

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ADDENDUM

Table 1 Socio-demographic and clinical characteristics of the study population (*N*=306)

Variable	Frequency n (%)
Age groups (years)	
18-30	133(43.46)
31-50	86(28.10)
> 50	87(28.43)
Race	
Black	239(78.14)
Caucasian	6(1.96)
Coloured	7(2.29)
Unknown	54(17.65)
Employment status	
Unemployed	207(67.65)
Employed	27(8.82)
Student/Scholar	12(3.92)
Unknown	60(19.61)
Gender	
male	237(77.45)
female	69(22.55)
Substance use	
Yes	156(50.98)
No	85(27.78)
Unknown	65(21.24)
Past History of Medical Co-morbidities	
Yes	98(32.02)
No	149(48.69)
Unknown	59(19.28)
Past History of Psychiatric Illness	
Yes	75(24.52)
No	169(55.23)
Unknown	62(20.26)

Table 2: Socio-demographic and clinical characteristics of the group who were discharged with a diagnosis of primary psychosis versus the group who were discharged with secondary psychosis.

Variable	Primary Psychosis discharge diagnosis n (%)	Secondary Psychosis discharge diagnosis n (%)	p-value
Age groups (years), n=211			
18-30	97(58.79)	13 (28.26)	<0.001
31-50	55(33.33)	19 (41.30)	
> 50	13(7.88)	14 (30.43)	
Race, n=212			
Black	155(93.37)	44 (95.65)	0.391
Caucasian	6(3.61)	0 (0)	
Coloured	5(3.01)	2 (4.35)	
Employment status, n=212			
Unemployed	145(87.35)	35 (76.09)	0.053
Employed	11(6.63)	8 (17.39)	
Student/Scholar	8(4.82)	1 (2.17)	
Other	2(1.20)	2(4.35)	
Gender, n=212	N = 166	N = 46	
Male	132(79.52)	32 (69.57)	0.154
Female	34(20.48)	14 (30.43)	
Substance use, n=211			
Yes	121(72.89)	19 (41.30)	<0.001
No	44(26.51)	27 (58.70)	
Medical co-morbidities, n=212	N=166	N=46	
Yes	49(29.52)	36 (78.26)	<0.001
No	117(70.48)	10 (21.74)	
History of psychiatric illness, n=212			
Yes	60(36.14)	12 (26.09)	0.202
No	106(6.86)	34(73.91)	