PATTERNS OF PSYCHIATRIC MORBIDITY AMONG PATIENTS IN NDERA NEUROPSYCHIATRY HOSPITAL KIGALI -RWANDA

A DISSERTATION SUBMITTED TO UNIVERSITY OF NAIROBI IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF THE DEGREE OF MASTER OF MEDICINE IN PSYCHIATRY OF THE UNIVERSITY OF NAIROBI

BY

MUDENGE CHARLES MBCHB (NUR)

DEPARTMENT OF PSYCHIATRY

SEPTEMBER 2009

UaswMy <* NAROBI library

111 III Il III]
0537631 4

UNIVERSITY OF NAIROBI
MEDICAL LIBflARY

DECLARATION

!, Dr Mudenge Charles, do hereby declare that this dissertation is my original work carried out in part-fulfillment of the requirement of the award for the Degree of Master of Medicine in Psychiatry (MMed.Psych.) of University of Nairobi, and further, that I have not presented the same for the award of any other degree or to any other university.

Author Signature Date

Dr Mudenge Charles

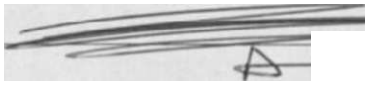
SUPERVISORS' APPROVAL

This dissertation has been submitted for examination with our approval as the University supervisors.

1 Dr Mburu John

MBCHB Nrb, MMed Psych Nrb

Lecturer in Psychiatry, University of Nairobi.

2. Prof Ndetei D.M. 

MB.CHB. (Nrb), D.P.M (Lond), M.R.C. Psych. (UK), FRC. Psych. (UK),

M.D. (Nrb), Certificate of Psychotherapy (London)

Professor of Psychiatry,

University of Nairobi.

ACKNOWLEDGEMENT

I would like to express my deep sense of gratitude to my supervisors; Dr. Mburu John and Prof Ndetei D M for their tireless efforts and the time they devoted during concept development, proposal writing and up to the completion of this study. Many thanks go to Dr Lincoln I.Khasakhala of African Mental Foundation, for his assistance and his advice in data analysis and in the presentation of the results of this study. I am deeply indebted to the Government of Rwanda, which offered me the scholarship. I appreciate the assistance of my Lectures in the department of Psychiatry. I also owe much to my colleague in the Department of psychiatry.

Many thanks also go to all my family members for providing moral support and all other necessary assistance.

I express my sincere gratitude to Brother Nkubiri Charles, The Director General Ndera Neuropsychiatric Hospital for facilitating the completion of this study. I wish to thank the follow ing Clinical staff in Ndera for the assistance and cooperation during my data collection; Dr Gasinzigwa Raphael, Dr Rugondihene Chantal, Dr Butoto Xavier, Dr Bizoza and Dr Rukundo Arthur. Finally special recognition go to Dr Kamugisha Julius, ICAP-Rwanda, Dr Ruhirwa Rodoviko, MDRT-Rwanda for the support they rendered in this study.

God bless you all.

DEDICATION

To my wife Liliane and daughter Keziah for their love, support, and understanding while carrying out this work.

Finally to all Individuals and Families who are affected by mental illness.

TABLE OF CONTENTS

LIST OF TABLES

U S T O F F I G l RES

1.1ST OF ABBREV IATION AND ACRONYMS

1.	AIDS	Acquired Immunodeficiency Syndrome
2.	ADHD	Attention Deficit Hyperactivity Disorder
3.	APA	American Psychiatric Association
4.	ASD	Autism Spectrum Disorder
5.	CIDI	Composite International Diagnostic Interview
6.	DSM-IVTR	Diagnostic and Statistical Manual ($4^{!!:}$ Edition)
7.	ECA	Epidemiological Catchment Area
8.	HIV	Human Immune Virus
9.	ICD-10	International Classification of Disease($10^{\cdot h}$ Edition)
10.	K.NH	Kenyatta National Hospital
11.	NCS	National Co morbidity Survey
12.	NP	Neuro-Psychiatry
13.	NUR	National University of Rwanda
14.	MDD	Major Depressive Disorder
15.	PDD	Pervasive Developmental Disorder
16	PTSD	Post Traumatic Stress Disorder
	\l.p	Probability Value
18.	SCID	Structured Clinical Interview for DSM - IV
19.	SPSS	Statistical Package for Social Sciences
21.	US	United States of America
22.	x2	Chi square statistics
23.	WHO	World Health Organization

ABSTRACT

Introduction: According to the World Health Organization (WHO), mental health is defined as an essential and integral part of health as a whole.

The 1994 war and Genocide, which took place in Rwanda, left many people physically and psychologically traumatized. This led to an increment in psychiatric disorders within the country. However, few studies have been done to assess the prevalence of psychiatric morbidity in the country.

Objectives: To determine the socio-demographic variables of mentally ill patients, determine the source of referral of the patients, determine the duration of hospital stay, to determine patterns of psychiatric morbidity and the assigned clinical diagnosis, to determine relationship between socio-demographic variables with psychiatric morbidity.

Methods: Study design was Cross-section descriptive study.

Settings: The study sample came from Ndera Neuropsychiatric Hospital Kigali Rwanda.

Systematic and consecutive sampling by choosing every 3"[1] patients was employed, 384 patients meeting the inclusion criteria were interviewed using Socio-demographic questionnaires and SC1D-I for DSM-IV TR diagnosis. Data was analyzed using the Statistical package for Social Sciences (SPSS) version 12

Results: Three hundred and eighty four patients participated in the study. And 58% percent were males. Majority of these patients were aged between 21 and 30 years. And 51% Fifty one percent were single. The highest level of education was primary (44%). Majority of the patients were unemployed earning less ten US dollars per month. In this study population, majority were

Protestants comprising of (45%). As regards to the province of origin, majority of the patients came from Kigali town (46%). Forty three percent had a family history of mental illness. Night five percent were admitted involuntarily and 70.3% were referred by relatives. More than 46% of the patients had been admitted more than two times and majority stayed in the hospital for more than two weeks (35%). Schizophrenia, mania, major depression, brief psychosis, cannabis, acute psychosis, Post-traumatic stress disorder and alcoholism in order of priority, were the most commonly assigned clinical diagnosis. Twenty eight percent of patients had no defined clinical diagnosis. Structured clinical interview for DSM-IV Axis I disorders clinical version (SCID-I) showed that Schizophrenia was the most frequent diagnosis (39.3%), followed by current manic episode (38.5%,) Depressive episode (8%), Substance abuse (6.7%) and Post-traumatic stress disorder (5.2%) , least being Acute stress disorder and generalized anxiety disorder (1.3%) and (0.7%) respectively.

There was a difference between assigned clinical diagnosis and structured clinical interview for DSM-IV diagnosis where (SCID-I) picked more Psychiatric morbidity compared with assigned clinical diagnosis. There was some variation in the number of patients assigned clinical diagnosed of current manic episode and SCID-I diagnosis accounting for 83 while that of schizophrenia was 51 patients The SCID-I is therefore more precise in making diagnosis.

Relationship between severe Psychiatric disorder and Socio-demographic variables

Schizophrenia and Gender; (males, n=93, 61.5%, p = 0.0178, x^2=1.456), Marital status (unmarried, n=99, 65.5%, p =0.001, x^2=1.456), level of education (primary, n=81, 53.6%, p=0.046, x^2=10.411) and Occupation (informal, n=135, 89.4%, p = 0.002, x^2=I 1.801)

Current manic episode Gender; (males, n=85, 56.2% p= 0.014, x^2= 0.128), Marital status (unmarried. n=98, 66.2%, P= 0.014, x^2=8.826), level of education (primary. n=83, 56.0%, p=0.049. X^2=4.134)

Occupation; (informal, n=126, 85.1%, p =0.001, x^2=8.542). Income per month in USD (below 40 n=107, 72.2%, p= 0.020, x^2=9.531)

Depressive episode; Gender (female n=24, 77.4%, p = 0.036, x^2=17.118), Marital status (females, n=21, 67.7%, p=0.042, x^2 =6.432), Income per month (P = 0.002), Occupation (informal n=26, 83.8%, P =0.036, x^2 =19568) and province (Kigali, n=11, 35.4%, p = 0.046, x^2=4.082).

PTSD; Gender (female, n=17, 65%, p = 0.025, x^2 =0.528), Marital status (unmarried, n=I7, 85% p = 0.032, x^2 =4.886) and occupation (informal n=15, 75%, p = 0.04, x^2 =3.533)

Conclusions: The study revealed different types and patterns of Psychiatric morbidity in Ndera Neuropsychiatric Hospital, Kigali-Rwanda. This confirms the alternative hypothesis, which states that there are variations in patterns of different Psychiatric disorders among patients in Ndera Neuropsychiatric Hospital.

SCID-I diagnosis picked more Psychiatric disorders s compared to assigned clinical diagnosis raising the question of subjective Clinician impression. Majority of the patients were admitted involuntary and were referred by relatives. The following Socio-demographic variables; Gender, Marital status, occupation, Income per month, and Level of education and province of residence were statistically significant and were related to a diagnosis of severe psychiatric disorder with P value <0.05.

Recommendations: -There is need to; train hospital physicians, psychologists, and nurses on how to use specific structured diagnostic instruments such as the SCID-I which is a precise diagnostic tool for psychiatric disorders and also to strengthen family support in caring for mentally ill patients in the community.

-A further study to determine psychiatric morbidity in general population is recommended as a future project. Conduct a study on how best the low levels of substance abuse can be maintained.

Study limitations: -The first limitation was language; it was challenging to translate some scientific words to fit the local dialect during the interviews.

-The interview were based on information at the time of admission and therefore some patients could not recall all the details, regarding the past events.

CHAPTER ONE: INTRODUCTION

1.1. Background

According to the World Health Organization (WHO), mental health is defined as an essential and integral part of health as a whole [1],World Health Organization (WHO) estimated that about 450 million people worldwide currently suffer from some form of mental or behavioral disorder [2]. Numerous large-scale surveys of the Prevalence of mental disorders in adults within the general population have been carried out since the 1980s based on self-reported symptoms assessed by standardized structured interviews, usually carried out over the phone. Mental disorders have been found to be common, with over a third of people in most countries reporting sufficient criteria at some point in their life [3]. World Health Organization (WHO) completed surveys on 14 countries based on ICD-10 and DSM-IV criteria and came out with the following results: Anxiety disorders are the most common in all (2.4% to 18.2%) and mood disorders next most common in all (0.8% to 9.6%), while substance disorders (0.1%-6.4%) and impulse-control disorders (0.0%-6.8%) were consistently less prevalent. The United States, Colombia, the Netherlands and Ukraine tended to have higher prevalence estimates across most classes of mental disorders, while Nigeria, Shanghai and Italy were consistently low, and prevalence was lower in Asian countries in general [4]. Worldwide, community-based epidemiological studies have estimated that the rates of lifetime prevalence of mental disorders among adults range from 12.2% to 48.6% and 12-month prevalence rates range from 8.4% to 29.1% [5].

1.2. Specific Categories of Mental Disorders

There are currently two widely established systems that classify mental disorders, the International Classification of diseases (ICD-10), produced by the World Health Organization (WHO), and the Diagnostic and statistical Manual of Mental Disorders (DSM-IV) produced by the American Psychiatric Association (APA) [6],

There are different categories of mental disorders: Anxiety disorders which are usually intense or generalized over a prolonged period of time. Commonly recognized types of anxiety disorders include; specific phobia, generalized anxiety disorder, social phobia anxiety disorder, agoraphobia, obsessive-compulsive disorders and post traumatic stress disorder. Relatively long lasting affective states can also become disordered. Mood disorder involving unusually intense

and sustained sadness, melancholia or despair is known as Clinical depression (or Major depression), and may generally be described as Emotional Dysregulation. Milder but prolonged depression can be diagnosed as Dysthymia. Bipolar disorders involve abnormally high mood states, known as Mania or Hypomania, alternating with normal or depressed mood. Whether unipolar and bipolar mood phenomena represent distinct categories of disorders or whether they usually mix and merge together along a dimension or spectrum of mood is under debate in the scientific literature [7],

Schizophrenia is a severe and persistent debilitating psychiatric disorder. The hallmark symptoms of schizophrenia are the experiences of hallucinations, often of the auditory type, as well as delusions. However, impaired information processing is probably the most harmful symptom. Patients with schizophrenia have lower rates of employment, marriage, and independent living than other people. The causes of schizophrenia are not known. However, at least 2 groups of risk factors, genetic and perinatal, are widely thought to exist. A genetic factor probably does exist because the risk of schizophrenia is elevated in biological relatives of patients who are schizophrenic but not in adopted relatives. The risk of schizophrenia in first-degree relatives of people with schizophrenia is 10%. If both parents are schizophrenic, the risk of schizophrenia in their child is 40%. Concordance for schizophrenia is about 10% for dizygotic twins and 40-50% for monozygotic twins. The prevalence of schizophrenia is approximately 1% worldwide [8].

Other disorders may involve other attributes of human functioning. Eating practices can be disordered, at least in relatively rich industrialized areas, with either compulsive over-eating or under-eating. Types of this disorder include Anorexia-nervosa and Bulimia nervosa, or Binge eating disorder [9],

Sleep disorders are among the most common clinical problems encountered in medicine including psychiatry. It is divided into three general groups; primary, secondary to a mental disorder, and other disorders, namely those related to a general medical condition or substance abuse. Primary sleep disorders are presumed to result from an endogenous disturbance in sleep-wake generating or timing mechanisms, often complicated by behavioral conditioning. These disorders are further subdivided into parasomnias and dyssomnias. Parasomnias include

nightmares disorder, sleep terrors disorder, and sleepwalking disorder. Dyssomnias are characterized by abnormalities in the amount, quality, or timing of sleep. These include primary insomnia and hypersomnia, narcolepsy, breathing-related sleep disorder (sleep apnea), and circadian rhythm sleep disorder. Primary insomnia is the general term for difficulty in initiating or maintaining sleep [10].

Sexual disorders includes three major types; Dysfunctions, paraphilia, and gender identity disorders. Sexual dysfunctions prevent or reduce an individual's sexual enjoyment of normal sexual activities. Paraphilia refers to sexual behaviors in which unusual objects or scenarios are necessary to achieve sexual excitement. Fetishism, this is where a person is sexually aroused by a nonliving object. Transvestism is where a person achieves sexual excitement by cross-dressing. Sexual sadists are those who derive sexual excitement from the pain of others.

Masochist is applied to those who derive sexual excitement through their own pain. Other types of paraphilia include exhibitionism, voyeurism, and pedophilia.

Gender identity disorder is defined by four or more of the following characteristics, desire to be the other sex, preference for cross-sex roles in play or preference for cross-dressing, persistent fantasies of being the other sex, an intense desire to participate in stereotypical games and pastimes of the other sex and a strong preference for playmates of the other sex.

Boys have an aversion to their penis or testicles and they have a belief that their genitals will disappear. An aversion to rough and tumble play, and a rejection of male toys is also evident. Girls have a rejection of urinating in the sitting position, have an assertion that they will grow a penis, an assertion that they don't want to grow breasts or menstruate and an aversion toward normative feminine clothing [11].

People who are abnormally unable to resist urges, or impulses, to perform acts that could be harmful to themselves or others, may be classified as having an impulse control disorder, these disorders are Tics disorder such as; Tourettes Syndrome, Kleptomania (stealing) and Pyromania fire-setting) [12].

Substance-use disorders include; addictive gambling. The inability to sufficiently adjust to life circumstances may be classified as Adjustment disorders. The type of adjustment disorder is

usually reserved for problems beginning within three months of the event or situation and ending within six months after the stressor stops or is eliminated. People who suffer severe disturbances of their self-identity, memory and general awareness of themselves and their surroundings may be classified as having Dissociative identity disorders, such as Depersonalization disorder or derealization disorder. Disorders appearing to originate in the body, but thought to be mental, are known as somatoform disorders. These include somatization disorder. There are also disorders of the perception of the body, including body dysmorphic disorders. Neurasthenia is a type of disorder involving somatic complaints as well as fatigue and low spirits/depression, which is officially recognized by the ICD-10 but not by DSM-IV [13].

A factitious disorder is the term used to describe all persons who intentionally feign illness in order to assume the sick role. Munchausen syndrome is not included as a discrete mental disorder in the World Health Organization (ICD-10) or in the American Psychiatric Association (DSM-IV-TR). In both systems, the official diagnosis in these cases is a factitious disorder [14].

Delirium is marked by short term confusion and changes in cognition. There are four causes; general medical conditions including infections, substance induced deriliums from cocaine, opioids, phencyclidine (pep), head trauma or a kidney disease and delirium not otherwise specified.

Dementia is marked by severe impairment in memory, Judgment, orientation and cognition. There are six causes; Dementia of Alzheimer's type, which usually occurs in persons, aged 65 years and above is manifested by progressive intellectual deterioration and dementia, delusions, hallucinations and depression. Vascular dementia is caused by vessel thrombosis or Hemorrhage, and also dementia caused by other medical conditions like Human Immunodeficiency Virus (HIV) disease, head trauma, picks disease, Creutzfeldt- Jakobs disease which is caused by slow growing transmittable virus and substance abuse caused by toxins or medications including gasoline fumes or atropine.

Amnestic disorder is markedly by memory impairments and forgetfulness. The main causes are medical conditions like hypoxia, toxins or medications including Marijuana or Diazepam [15].

Some disorders are thought to usually first occur in the context of early childhood development, although they may continue into adulthood. There are different types of specific development disorder which may either target learning skills, motor skills or communication skills. Disorders which appears more generalized may be classified as Pervasive developmental disorders (PDD) also known as Autism spectrum disorders (ASD). These include Autism, Asperger's, Rett' s syndrome. Childhood disintegrative disorder and other types of pervasive developmental disorders (PDD) whose Exact diagnosis may not be specified. Other disorders mainly or first occurring in childhood include; reaction attachment disorder, separation anxiety disorder, oppositional disorders and attention deficit Hyperactivity disorder [16].

Personality disorder is an enduring pattern of inner experience and behavior that differs markedly from the expectations of the individual's culture, is pervasive and inflexible, has an onset in adolescence or early adulthood, is stable over time, and leads to distress or impairment. Personality disorders are a long-standing and maladaptive pattern of perceiving and responding to other people and to stressful circumstances.

Personality disorders are grouped into 3 clusters (A, B& C), that are defined in the DSM-IV; Cluster A consisted of Paranoid, Schizoid and Schizotypal Personality disorders, while Cluster B has the following: Antisocial, Borderline, Histrionic and narcissistic personality disorders. Finally Cluster C which comprise of Avoidant, Dependent and Obsessive-compulsive personality disorder [17].

Mental retardation is a state of developmental deficit beginning in childhood, which results in significant limitation of intellect or cognition and poor adaptation to the demands of everyday life. As noted, intellectual disability is not a disease in itself, but is the developmental consequence of some pathogenic process. It refers to significantly sub average intellectual functioning with an intelligence quotient (IQ) of approximately 70 or below. It is characterized by concurrent deficits or impairments in adaptive functioning in at least 2 of the following areas; communication, self-care, home living, social/interpersonal skills, use of community resources, self-direction, functional academic skills, work, leisure, health or safety. The age of onset is below 18 years. Although mental retardation is classified as an axis II disorder in DSM-IV. it is

not considered a mental illness. It is a system of identifying groups of people who need social support and special educational services to carry out tasks of everyday living [18].

1.3. Statement of the problem

What is the Pattern of Psychiatric morbidity among patients in Ndera NP-Hospital?

1.4. Hypothesis

Null Hypothesis <$H_{„}$)

There are no variations in patterns of different Psychiatric disorders among patients in Ndera NP-Hospital.

Alternative Hypothesis (H_A)

There are variations in patterns of different Psychiatric disorders among patients in Ndera NP-Hospital.

1.5. Aim:

To determine the patterns of psychiatric morbidity among the patients in Ndera NP-Hospital Kigali- Rwanda.

1.6. Specific objectives:

1. To determine the socio-demographic variables among patients in Ndera NP-Hospital.
2. To determine the source of referrals among patients in Ndera NP-Hospital.
3. To determine number of admissions among patients in Ndera NP-Hospital.
4. To determine the duration of admission among patients in Ndera NP-Hospital.
5. To determine patterns of psychiatric morbidity and assigned clinical diagnosis among patients in Ndera NP-Hospital.

6. To determine the relationship between socio-demographic variables with psychiatric morbidity among patients in Ndera NP-Hospital.

1.7.Justification

There have been relatively few studies carried out in Rwanda on patterns of psychiatric morbidity especially since the 1994 war and genocide. One study on exposure to trauma and the prevalence of psychiatric disorders by Hagengimana, completed a door-to-door community survey in 1996. By interviewing the household members in various neighbourhoods in Kigali and several outlying towns, the researcher collected data on a sample of 157 citizens between the ages of 8 and 60 Years. Each subject completed the fCinyarwanda translations of the Harvard Trauma Questionnaire and the Standardized Psychiatric Interview administered by the investigator as an interview.

Fifty percent (79 out of 157) met DSM-IV criteria for a psychiatric disorder. The most common diagnosis were acute grief reaction (25%), depression (22%) and PTSD (20%) [19].

A study by Bolton et al, studied the prevalence of major depressive disorder among Rwandese nationals, five years after the 1994 genocide civil war. They interviewed a community-based random sample of adults in a rural part of Rwanda using the Hopkins Symptom Checklist and a locally developed Functional Impairment Instrument. Three hundred sixty-eight adults were interviewed, of whom 15.5% had major depression [20].

The researcher has not come across any published studies done in Ndera Neuropsychiatric Hospital Kigali- Rwanda that focused on the specific diagnosis and patterns of Psychiatric morbidity. Since epidemiological study is very difficult and expensive to conduct with limited resources, a hospital based study was conducted in the National Referral and Teaching Hospital in Rwanda.

The objective of the study was to determine the socio-demographic variables and the patterns of different diagnostic psychiatric morbidity among patients in Ndera Neuropsychiatric Hospital.

The study also aimed at establish, the magnitude of Psychiatric morbidity among patients in Ndera Neuropsychiatric Hospital and compare the results to those found in other studies done

elsewhere and possibly recommend effective Mental health services in terms of assessment, treatment, rehabilitation and re-integration of these patients in the day to day life.

CHAPTER TWO: LITERATURE REVIEW

A review of community based epidemiological survey in the East African region reveal that psychiatric morbidity are common for example, a research conducted in Rwanda on the exposure of study subjects to trauma and the prevalence of psychiatric disorders by using a door-to-door community survey in 1996 showed that (55%) 79 out of 157 met DSM-IV criteria for a psychiatric disorder. The most common diagnosis were acute grief reaction (25%), depression (22%) and PTSD (20%) [19].

Bolton et al did a study on the prevalence of major depressive disorder among Rwandans 5 years after the 1994 genocidal civil war. They interviewed a community-based random sample of adults in a rural part of Rwanda using the Hopkins Symptom Checklist and a locally developed Functional Impairment Instrument. Three hundred sixty-eight adults were interviewed, of whom 15.5% had major depression [20].

East Africa is home to approximately 1.5 million refugees (http://www.unhcr.org), and survivors of myriad natural and man-made disasters. Somalia, Ethiopia, Sudan, Rwanda and Congo are the neighbors who are currently in armed conflict and provide the region with a large concentration of refugees and internally displaced persons. Conflicts, including wars and civil strife, result in an increase in mental problems. These situations place a heavy burden on the already overstretched health and other social services of the region. According to the WHO (2001), between a third and a half of those affected suffer mental distress, including post-traumatic stress disorder (PTSD), depressive and anxiety disorders [21].

Patrick Vink et al conducted an intensive survey on 2,585 adults in villages and camps for internally displaced persons in four districts of northern Uganda in April and May, 2005. They observe that about three-quarters of the respondents (74.3%) met PTSD symptom criteria and almost half (44.5%) met depression symptom criteria [22],

Ovuga et al in a study to determine the prevalence of depression in two districts in Uganda, translated versions in Madi and Lusoga of the 13-item Beck Depression Inventory (BDI) were administered to a systematic sample of adult residents in the Adjumani and Bugiri Districts of Uganda, it was observed that the overall prevalence of clinically significant depression (BDI score of 20-39) was 17.4% [23].

Kabede et al, studied the socio-demographic correlates of bipolar disorder in Butajira, rural Ethiopia. The lifetime prevalence of bipolar disorder in this population was 0.5% for men and 0.4%) for women. Those aged between 25 and 34 years had a 45% higher risk than those aged below 25 years. Residence and educational level were not associated with the occurrence of the disorder The association of marital status with bipolar disorder was modified by age and sex. Among males, the odds of bipolar disorder among the married, was 3.6 times higher than those who had never married. Among the age group of 15 to 24 years, those married had a 84% higher risk of disease, while those previously married had a 55% increase. On the other hand, the association between marital status and bipolar disorder is reversed in older age groups, with those who have never married exhibiting an increased risk to the disorder compared to those who were married. This study also showed that age, sex and marital status are associated with bipolar disorder and these variables interact with each other [24],

Rizwan et al did a study on patients' psychiatric morbidity at Pakistan Institute of Medical Sciences (PIMS), using ICD-10. One hundred and thirteen patients participated in the study. The researchers concluded that depression was the most common psychiatric disorder affecting the patients with a prevalence of 18.7%. This varied from Anxiety disorders which had a prevalence of 16.7%, Dissociative (Conversion) disorder whose prevalence was 15.6%, post traumatic stress disorder at 0.9%, Manic Depressive Psychosis at 11.6%, schizophrenia with a prevalence of 8.04% and drug dependence at 8% [25]

Ndosi et al did a study on the nature of puerperal psychosis at Muhimbili National Hospital Dar es Salaam, Tanzania. The results indicated that sixty nine mothers (80.2%) suffered from acute organic brain reactions, 7(8.1%) schizophrenia, 4(4.7%) paranoid reactions, 4(4.7%) affective psychosis and 2 (2.3%) schizophreniform psychosis [26].

Flisher et al carried out a study on the prevalence of selected mental disorders in the Western Cape. South Africa. They observed that the prevalence of these combined disorders was 25.0% for adults and 17.0% for children and adolescents ***[21].***

Stein et al conducted a study on the lifetime prevalence of psychiatric disorders in South Africa. A nationally representative household survey was conducted between 2002 and 2004 using the

World Health Organization Composite International Diagnostic Interview (CIDI) to generate diagnosis. Researchers identified the following results: Lifetime prevalence of DSM-IV/CIDI disorders was determined for anxiety disorders (15.8%), mood disorders (9.8%), substance use disorders (13.4%) and any other disorder (30.3%) [28].

Some researchers also studied the role of age of onset on the course of schizophrenia. The interaction of education and onset of schizophrenia supports the moderation model. This suggests that less education corresponds with longer initial and aggregate lengths of hospital stay if an earlier age of onset occurs [29].

Karam et al did a study on a nationally representative sample of the Lebanese population using a sample size of 2,857 adults. Respondents were interviewed using the fully structured WHO Composite International Diagnostic Interview (CDI) and Statistical Manual of Mental Disorders fourth edition (DSM-IV). The prevalence for depressive disorder was 25.8%, Anxiety disorder (16.7%), mood disorder (12.6%), impulse control disorder (4.4%) and substance abuse disorders (2.2%) [30].

A study by Isohanne et al in 2001 focused on the education consequences of mental disorders in a hospital. They examined the impact of mental disorders treated in hospital on patients between 16 and 29 years on educational attainment for up to 31 years in Northern Finland. People discharged due to mental illness were grouped by DSM-III-R diagnosis of schizophrenia, other psychoses and non-psychotic disorders and were compared with those having no such hospital treatments. These researchers observed that patients diagnosed with early onset schizophrenia completed secondary education, but none completed the tertiary level. Failure to complete higher education may contribute to the social exclusion of the mentally ill through reduced opportunities in later occupational life and failure to accumulate social capital [31].

Mclaughlin et al, studied the effect of delays in treatment for mental disorders and health insurance coverage and they observed that lower levels of employment, educational attainment and income are positively correlated with both mental illness and the lack of health insurance coverage. Lower levels of insurance coverage were negatively correlated with utilization of

primary care, late detection and treatment of mental illness which are positively correlated with psychiatric illness [32].

Kessler et a1, studied life time and 12 month prevalence of DSM-III TR psychiatric disorders in United states. From this study, they concluded that mental illness is distinct from many other chronic illnesses in that its onset often occurs during late adolescence or young adulthood. The likelihood of having a disorder and the severity of illness correlates with age. Both prevalence and severity are greater for younger individuals especially those aged 25 to 34 years [33].

Spijker et al, conducted a survey to study the incidence of major depression in the general population. They discovered that people of lower socio-economic status, however measured, are disadvantaged. There were higher frequencies of the conditions now called the common mental disorders. These were mostly non-psychotic depression and anxiety, existing either separately or together. In European and similarly developed populations, relatively high frequencies are associated with poor education, material disadvantages and unemployment. Their large contribution to morbidity and disability, and the social consequences in working age adults would justify substantial priority being given to addressing mental health inequalities, and deprivation in general, within national and European social and economic policy [34],

TunaLergo et al, reviewed several studies on patterns of psychiatric illness in Kaduna psychiatric facilities. In one study by Ichue (1981) on first Admissions to a University Teaching Hospital in a three-year. It was reported 778 cases of psychiatric illnesses. Researchers observed a predominance of male patients (55.3%) over female patients (44.7%). Patients of both sexes under the age of 30 years constituted the majority with 64.2%. Three point one percent of the patients were aged under 15 years, while 32.7% were 30 years and above. With regard to the educational attainment of the patients, 51.5% did not go beyond primary education; and 54.2 % had not been married before [35],

Cicek et al evaluated six hundred patients hospitalized at the psychiatric unit of a teaching hospital. The researchers observed that 49% of the patients who were hospitalized to receive therapy were female. The mean age of the patients was 36.46 +12.75. In terms of marital status, majority was married and in terms of occupational distribution, housewives were predominant.

The mean duration of stay of the patients at the clinic was 31.9 + 27.3 days. In terms of DSM-IV-R diagnosis of the patients, the most common diagnoses were; mood disorders (33%), psychotic disorders (25.6%) and anxiety disorders (19%) [36].

Abiodun et al studied the pathways to mental hospital care in Nigeria. A total of 238 patients who attended a mental health service in Ilorin, Nigeria, were interviewed over a one-month period to assess the routes they took to psychiatric care. Ninety-five patients reported that they had first contacted traditional or religious healers when they became mentally ill. Patients who contacted such healers included significantly more males, were predominantly Muslims and very few of these patients had any professional occupations. Family members played important roles in patients' decisions about the type of practitioner to consult [37],

A study by Carranza et al, on psychiatric morbidity of overseas patients in inner London concluded that police involvement in the referral process is a significant predictor of admission to psychiatric hospitals. Relatives referred 23% of the total patient cases, while 42% were referred by the police involuntarily and 35% voluntarily [38].

Frankalin et al, assessed the cultural response to mental health illness in Senegal. Patient records from the Thiaroye Psychiatric Hospital in Senegal were studied to see if analysis of patterns of persons accompanying patients to the hospital could help to portray the community's response to mental illness. A systematic sample of 935 records of initial outpatients' visits was examined. Patterns of patient companionship were found to strongly correlate with patient socio-demographic and clinical characteristics [39].

Munk-jorgensen et al reviewed hospitalization patterns in schizophrenic patients. All first admitted patients in 1972 aged 15 years or more who were diagnosed as schizophrenic at least once from 1972 until September 1983 (n= 53) were followed-up for an average 13 years after first admission. Hospitalization decreased from a mean of 8.2 months for the first admission to 1.7 months for the tenth or later admission. The readmission risk increased as a function of the number of previous admissions. Patients with income from occupation or from grants for education had shorter duration of first in-patient period. If the patients were diagnosed as schizophrenics during the first hospitalization, the risk for prolonged duration of the first

inpatient period was increased but the readmission risk diminished. Furthermore, readmission risk after the first discharge was diminished by the patients' own income and by outpatient treatment and increased by low social status [40],

Niehaus et al, study examined the effect of this policy and length of hospital stay (LOS) on readmission rates in one psychiatric hospital in South Africa. Four hundred and thirty eight adult male patients admitted to Stikland Psychiatric Hospital during 2004, were retrospectively examined. Each patient's clinical course was then analyzed for the period between January 1st, 2004, and August 31st, 2006. Although shorter LOS was associated with decreased readmission rates, the effect of crisis discharges was far more powerful. Patients discharged normally had a far lower risk of readmission than those discharged due to bed pressures i.e. crisis discharge [41].

Prit et al, conducted a study on the patterns of care in patients discharged from acute psychiatric in patients' facility. One thousand three hundred and thirty patients discharged from public and private inpatient facilities in Italy were assessed with a standardized methodology during an index period in the year 2004. Approximately half of the sample had schizophrenia or bipolar disorder. However, increasing age and gender contributed to a long stay in the facility (>60 days) [42].

Lukoye et al assessed posttraumatic stress among mau mau concentration camp survivors. All subject with relatives on treatment for mental illness had PTSD, and there was a statistically significant association between family history of mental illness and PTSD ($P < 0.05$) [43].

Abebaw et al, conducted a descriptive analysis of admissions to Amanuel psychiatric hospital The researchers observed that most patients were admitted for the first time (61.1%), and were predominantly male (72.4%), aged 30 years and under (69%), single (70.2%) and unemployed (54%). The age of patients ranged from 12 to 90 years with a median age of 27. Patients under the age of 16 constituted 1.8% of admissions while those above 60 years of age constituted 0.7%. Most patients camc from Addis Ababa. As regards to diagnosis, Schizophrenia was the most common discharge diagnosis (56.1%), followed by bipolar disorder (20.6%). 35.4% of patients had abused substances, mostly khat (locally known as chaat). No patient was admitted with

anxiety disorders, and only 12 patients (0.8%) had a discharge diagnosis of dysthymic disorder [44],

Ndetei et al, conducted a study on the pattern of co-morbidities and correlations between psychiatric disorders in inpatients of lMathan Hospital. Researchers used Structured Clinical Interview the diagnosis and statistical manual IV Axis I disorders (SCID-I). Six hundred and ninety-one patients participated in the study and sixty-three percent were male. More than three quarters (78%) of the patients were aged between 21 and 45 years. More than half (59.5%) of the males and slightly less than half (49.4%) of the females were single. All the patients were predominantly of the Christian faith. Over 85% were dependents of another family member and the rest were heads of households who supported their own families. Prevalence of schizophrenia was 51%, bipolar I disorder (42.3%), Substance abuse disorder (34.4%) and major depressive illness (24.6%). 7.4% of the total study cases, had PTSD and all other anxiety disorders were highly prevalent. Schizophrenia, bipolar disorders, psychosis, substance abuse psychosis and schizoaffective were the most common hospital diagnosis [45],

Pilly et al studied the relationship between demographic factors and patient readmission in therapeutic communities. Owing to apartheid, very few black clinical psychologists had been trained. Translators frequently had to be used in the therapeutic context. Nevertheless, various therapeutic groups have been conducted. Demographic and clinical data for a 3 years period are presented, showing most of the patients to be male, unmarried and around 30 years of age. Schizophrenic was the most common diagnosis and exhibited a readmission rate of 22.1% [46].

Thompson et al conducted a study on the annual admission rate in England. There were marked regional variations and the admission rates were higher in males than in females. Depression and anxiety together and were the most common reason for admission (29.6%). Length of stay exceeded 90 days in 9.2% of admissions or 0.9% of one year. London had the highest rate for these long periods of stay but the second lowest rate of admission overall [47].

A study by Fitzpatrick et al, on acute mental health admissions in inner London, concluded a higher rate for psychosis (around 50%), with depression, neurosis and substance misuse each accounting for a much smaller percentage (between 4% and 13%) [48].

ESMEDA project in 2004 reviewed the prevalence of mental disorders in Europe. A cross-European study found that approximately one in four people reported met the criteria of mental disorders at some point in their life for one of the DSM-IV disorders assessed. These disorders included; mood disorders (13.9%), anxiety disorders (13.6%) or alcohol disorder (5.2%). Approximately one in ten patients met the criteria within a 12-month period. Women and younger people of either gender showed more cases of disorder [49].

In 2005 Wittchan et al assessed the influence of staff size on mental disorders. A review of 27 studies was carried out and the finding was, 27% of adult Europeans are or have been affected by at least one mental disorder in the past 12 months. It was also found that the most frequent disorders were anxiety disorders, depressive, somatoform and substance dependence disorders [50].

Somers et al conducted a study on the prevalence and the incidence of anxiety disorder. A review that pooled surveys from different countries up to 2004, found an overall average prevalence estimates for any anxiety disorder of 10.6%. This review concluded that the rates for individual disorders varied widely. Women had generally higher prevalence rates than men, but the magnitude of the difference varied [51].

Waraich et al studied the prevalence and incidence of mood disorders. A review that pooled surveys of mood disorders in different countries up to the year 2000 found 12-month prevalence rates of 4.1% for major depressive disorder (MDD), 2% for dysthymic disorder and 0.72% for bipolar 1 disorder. The average lifetime prevalence found was 6.7% for MDD (with a relatively low lifetime prevalence rate in higher-quality studies, compared to the rates typically highlighted of 5%-12% for men and 10%-25% for women), and rates of 3.6% for dysthymia and 0.8% for Bipolarl [52],

Researchers who investigated the life time prevalence and age of onset distribution of DSM-IV in National cormobidity used previously widely cited large-scale surveys in the United States. These were the Epidemiological Catchment Area (ECA) survey and subsequent National Co morbidity Survey (NCS). The NCS was replicated and updated between 2000 and 2003 and

indicated that, of those groups of disorders assessed, nearly half of Americans (46.4%) reported meeting the criteria for mental disorders at some point in their life for either; DSM-IV anxiety disorders (28.8%), mood disorders (20.8%), impulse-control disorders (24.8%) or substance use disorders (14.6%). Half of all lifetime cases had started by the age of 14 years and 3/4 by the age of 24 years [53].

Kessler et al conducted a study on prevalence, severity and co morbidity of 12 month DSM-IV. Around a quarter pf patients studied (26.2%) met the criteria for a mental disorder - anxiety disorders (18.1%), mood disorders (9.5%), impulse control disorders (8.9%) or substance use disorders (3.8%). A substantial minority (23%) met the criteria for more than two disorders [54],

Saha et al conducted a systematic review of schizophrenia. In 2005, researchers reviewed prior surveys in 46 countries on the prevalence of schizophrenic disorders, including a prior 10-country WHO survey. They found an average (median) figure of 0.4% for lifetime prevalence up to the point of assessment and 0.3% in the 12-month period prior to assessment. The prevalence of schizophrenia was consistently lower in poorer countries than in richer countries but the prevalence did not differ between urban/rural areas or men/women [55].

Bijil et al determined the prevalence of psychiatric disorders in the Dutch general population. This study included patients between 18 and 64 years. Psychiatric disorders were determined by using the CIDI. Researchers observed that mood disorders, anxiety disorders, eating disorders, schizophrenia and other non-affective psychoses, and substance use disorders were found to be common. No gender differences were found in overall morbidity. Depression, anxiety, and alcohol abuse and dependence were most prevalent, and there was a high degree of co morbidity between them. The prevalence rate encountered for schizophrenia was 0.4% [56].

CHAPTER THREE: METHODOLOGY

3.1. Study Design

The study was a cross-section and descriptive study.

3.2. Study Area

The study was conducted at the Ndera Neuropsychiatnc Hospital, Kigali-Rwanda. Rwanda is a landlocked country situated in central Africa. Rwanda has a land area of 26,388 square kilometers and a population of approximately 9,073,706. Rwanda is bordered by Uganda to the north, Tanzania to the east, Burundi to the south and the democratic republic of Congo to the west. The Republic of Rwanda comprises of four (4) Provinces and Kigali City (www. inteko.gov.rw - Official website of Rwanda Parliament).

Ndera Neuropsychiatric hospital is the only referral and Teaching Psychiatric Hospital in Rwanda situated in its capital city Kigali, 15 km from city center. It was founded in 1968 by the Community of Charity Brothers Congregation under the request of the Government of Rwanda and Roman Catholic Church and was inaugurated in 1972 with a bed capacity of 120. Between 1972 and 1994, the hospital functions increased remarkably. A branch was started in what used to be called Butare province, now referred to as southern province. A mobile team was formed to cater for patients in other parts of the country. The hospital created a unit responsible for receiving prison patients and then finally started sending personnel abroad for specialization in Psychiatry. In the 1994 war and Genocide, Ndera NP-Hospital like any other institution was not spared. Patients and personnel were killed and hospital infrastructure was destroyed.

Ndera NP-Hospital gets its financial support from Charity Brothers Community, while the Government of Rwanda also provides human resource support. It is involved in National policy of decentralization of Mental Health services, training, and supervision of other mental health services within the country. In terms of service provision, Ndera NP-Hospital treats an average of 176 in patients and 968 out patients per month (2006 Annual statistics).

Ndera NP-Hospital has two Governments employed Psychiatrists and one Neurologist. One of the Psychiatrists handles clinical work on full time basis while the other one is also involved in teaching. It has a unit of Neurology and HIV/AIDS Integration. There are no special service

units responsible for child or adolescent services, drug rehabilitation and Forensic units. The hospital admits disturbed patients usually with psychosis, who are causing disturbance in the community.

3.3.Study Population.

The study population consisted of outpatients in Ndera NP-Hospital, who were admitted at one time, stabilized and are on follow up

3.4.Inclusion Criteria

1. Those > 21 years of age.

2. Patients who were admitted and are on follow up in the outpatient clinic.

3. Those patients who had been admitted treated and have achieved mental stability to give the required consent.

3.5.Exclusion Criteria

1. Those < 21 years of age.

2. Those who had never been admitted.

3. The first time attendees, not on follow up.

4. Those had relapsed and were not competent enough to give the consent.

3.6.Sample size

The sample size was calculated using the formula:

$$n = \frac{z^2 p\ LLO)}{d^2}$$

Where n is the sample size

z is the Standard normal deviation set at 1.96 which corresponds to 95%

p is the hypothesized prevalence level of 0.5

q is 1-p

d is the degree of precision set at 0.05 (5%)

$$n = \frac{1.96^2 \times 0.5(1-0.5)}{0.05^2}$$

$$\frac{1.9208\ (1-0.5)}{0.0025}$$

$$\frac{1.9208-0.9604}{0.0025}$$

n=384

384 patients were assessed.

3.7.Sampling

Systematic and consecutive by choosing every 3rd patient in five working days per week that met the criteria and were willing to participate in the study were included in the study.

3.8.Study instruments

1. Socio-Demographic Data Questionnaire (Appendix B)

Questionnaire which captured identification data and relevant demographic variables like age, Sex, Religion, Marital status, Occupation, Province of residence and the highest level of Education and Income were administered.

2. Structured Clinical Interview for DSM-IV Axis I disorders Clinical Version (SCID-I). (Appendix C) Structured Clinical Interview for DSM-IV (SCID).

This is a diagnostic interview designed for use by mental health professionals. It diagnoses thirty-three of the most commonly occurring psychiatric disorders described in the fourth edition of the diagnostic and statistical manual (DSM-IV) of the American Psychiatric Association (1994). The SCID is a semi-structured interview that allows the experienced clinician to tailor

questions to fit the patient's understanding and to ask additional questions that clarify ambiguities. It allows the clinician to challenge existing inconsistencies and to make clinical judgments about the seriousness of symptoms. The main uses of the SCID are for diagnosis, evaluation, research, and the training of mental-health professionals.

SCID is reported in terms of Kappa, a statistic that corrects for chance agreement. Kappa values above 0.70 are considered to reflect good agreement. Values from 0.50 to 0.70 reflect fair agreement and below 0.50 indicate poor agreement. Many studies have been carried out to assess the reliability and Validity of this instrument and can be found at http://cpmcnet.columbia.edu/dept/scid/psychometric/scidI_validity.html.

Reliability for categorical constructs, such as the DSM-IV diagnosis is still being assessed. Kappas from different studies have yielded kappas ranging from 0.57 to 1.0. Kappa values for Major Depressive Disorder have been reported at 0.80, Dysthymic Disorder at 0.76, Alcohol Dependence/ Abuse 1, Other Subst Dependence/ Abuse 1, Panic Disorder 0.65, Social Phobia 0.63, OCD 0.57, GAD 0.63, PTSD 0.88, Any Eating Disorder at 0.77 (Spitzer et al 2005) [57], Validity assessment has been difficult due to the lack of a proper gold standard for diagnosis of psychiatric disorders.

3.9. Data Analysis and presentation

Descriptive and inferential analysis was done using the statistical package for social sciences (SPSS) version 12. The results are presented in narratives, Tables, and charts.

3.10. Ethical considerations

Written informed consent was sought from all research subjects before including them in the study.This followed a full and detailed explanation of the study.

It was explained that participation in the study was voluntary and that the information collected during the study would only be used for the purpose of the study.

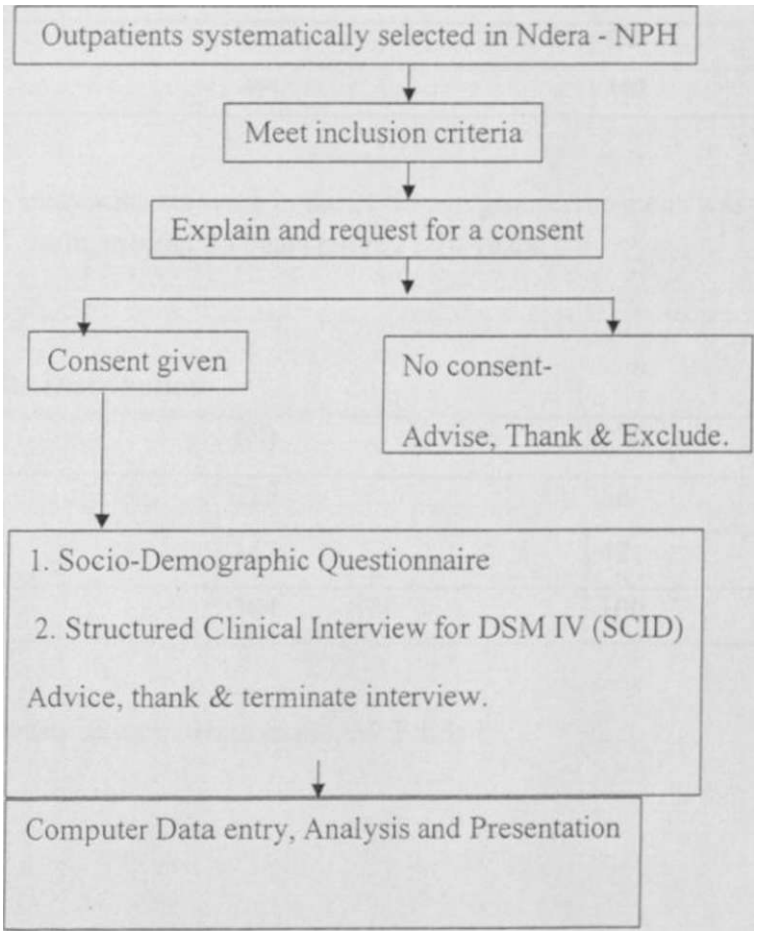
Study subjects were also explained to that there would be no material gain from the study. Study subjects were assured of confidentiality and subjects names were not used on any documents.

Medical advice and treatment was offered to all subjects whether or not they were included in the study. No invasive procedures were used.

Authority to carry out the study was given from the department of Psychiatry, University of Nairobi and approval was obtained from the ethics and research committee at K.NH, and the ministry of Health Kigali, Rwanda.

Permission to carry out the research was provided by the Director General Ndera Neuropsychiatric Hospital.

3.11.Flow chart of the study



CHAPTER FOUR: RESULTS

A total of 384 patients were interviewed over a period of 2 months (November 2008 to January 2009).

Table 1: Age group distribution

Age group (years)	**(N)**	(%)
21-30	**158**	**41.1**
31-40	**118**	**30.7**
41-50	**65**	**16.8**
51-60	**35**	**9**
61-70	**6**	**1.5**
>70	**2**	**0.5**
Toial	**384**	**100**

Majority of the study subjects were in the 21-30 age group. The mean was 35.4 years, S.D is 11.32, mode 21 years, median 33 years range 21-74 years.

Table 2: Gender Distribution

Gender	(N)	(%)
Males	222	58
Females	162	42
Total	384	100

Majority of the study subjects were males, M: F 1.3: 1

I able 3: Marital status, highest level of education, occupation, income, religion and province

Marital status	(N)	(*/.)
Single	195	51
Married	123	32
Separated	31	8
Divorced	8	2
widowed	23	6
cohabiting	4	1
Total	384	100
Highest level ol'education	(N)	(%)
No formal education	35	9.1
Puniary	168	43.8
Secondary	146	38.0
Tertiary/college'university	35	9.1
Total	384	100
Occupation	(N)	(%)
Student	37	9.6
Formal employment	35	9.1
Informal employment	126	32.8
Business	28	7.3
Unemployment	139	36.2
others	19	5
Total	384	100
Income per month in (US dollar)	(N)	(%)
< 10	200	52
10-40	65	17
41-180	96	25
181-545	19	5
>545	4	1
Iotal	384	100
Religion	(N)	(%)
[5]rotestants	173	45
"aiholics	146	38
>eventh day Adventist	42	11

Muslim	**19**	**5**
Others	**4**	**I**
Total	**384**	**100**
Province	**(N)**	(%)
Kigali town	**175**	**45.6**
Eastern	**95**	**24.7**
Virthern	**44**	**11.5**
Western	**27**	**7.0**
Southern	**43**	**112**
Total	**384**	**100**

Majority of the study subjects were single, of primary level education, unemployed and earning < 10 US dollars, Protestants and were from Kigali.

Table 4: Family history of mental illness, number of admissions and duration of hospitalization

Family history of mental illness	**(N)**	(%)
Yes	**180**	**47**
No	**204**	**53**
Total	**384**	**100**
Number of admissions	**(N)**	<%)
Once	**101**	**26**
Twice	**106**	**28**
More than two	**177**	**46**
Total	**384**	**100**
Duration of last hospitalization	**(N)**	(%)
1 week	**42**	**11**
2 **weeks**	**127**	**33**
3 **weeks**	**84**	**22**
1 month	**96**	**25**
2 **month**	**23**	**6**
Vlore than 2 month	**12**	**3**
fotal	**384**	**100**

Majority of the patients had more than two admissions, more than two week duration of idmission and almost half of the study subjects had a family history of mental illness.

Table 5: Mode of admission and Referral

\lode of admission	Referral	(N)	<%)
Involuntary	- Relatives	270	70.3
	- Husband	30	8
	-Wife	28	7.3
	-Police	19	5
	-Others	17	4
Voluntary		20	5
Total		384	100

Majority of the study subjects were admitted involuntarily and most were referred by relatives

Table 6: Assigned clinical diagnosis

Clinical diagnosis	(N)	(%)
Schizophrenia	100	26
Mania	65	16.9
Major Depression	29	7.5
Brief psychosis	21	5.5
Cannabis abuse	16	4.2
Acute psychosis	15	3.9
Posttraumatic stress disorder	13	3.4
Alcoholism	5	1.3
Hypo mania	4	1
Anxiety disorder	3	0.8
Schizoaffective	2	0.5
Obsessive compulsive disorder	1	0.3
Somatoform disorder	I	0.3
Puerperal psychosis	1	0.3
Not defined	108	28
Total	384	100

Majority of the patients had schizophrenia, mania but 28% had no defined diagnosis

T;ihle 7: Structured Clinical Interview (SCID-1) DSM-IV diagnosis

Psychiatric disorder	(N)	(%)
Schizophrenia	151	39.3
Current manic episode	148	38.5
Current depressive episode	31	8
Post traumatic stress disorder	20	5.2
Substance Abuse Disorders		
-Alcohol dependence	9	2.3
-Cannabis	17	4.4
Acute stress disorder	5	1.3
Generalized anxiety disorder	3	0.7
Total	384	100

Majority of the patients had Schizophrenia and current manic episode. For the purposes of the study, the first prominent diagnosis was recorded; hence no co morbidities are shown here.

Table 8: Relationship between socio-demographic characteristics and schizophrenia (N=151)

Socio- demographic Characteristics	Frequency	Statistical tests
Gender	Male 93 Female 58 n =151	*P = 0.0178 X^1 = 1 456 df =7
Mantal status	Unmarried 99 Mamed 52 n=151	*P = 0.001 X^1 = 7.561 df =4
Level of education	Primary 81 Above primary 70 n=151	*P = 0.046 X^1 = 10.411 df =4
Occupanon	Informal 135 Formal 16 n=151	*P = 0.002 X^2 = 11.801 df =4
Income per month in US dollar	Below 40 104 Above 40 47 n= 151	P = 0.348 X^1 =9.325 df =4
Religion	Catholic 56 Protestant 72 Muslim Seventh day 18 Others 4 n =151	P = 0.424 X^1 = 4.796 df = 7
Province	Kigali 70 Eastern 35 Northern 23 Western 10 Southern 13 n= 151	P =0.453 A* = 4.920 df = 7

Note: Marital status (Married included cohabiting, Unmarried included; single, divorced. separated, widowed. Level of education (Primary included non-formal education and primary education, above primary; secondary, tertiary education college) occupation (Informal included student, unemployed, informal employment, business person. Formal: formal employment) Income per month (below 40 l'S dollars include less than 10 US dollar, 10-40 US dollars. Above 40 US dollars include 41-181 US dollars and above 585 US dollars)

Table 9: Relationship between social demographic characteristics and current manic episode (N=148)

Socio-demographic Characteristics	Frequency	Statistical tests
[1] Gender	Male 85 Female 63 n = 148	*P =0.014 $X^{1'}$ 0.128 df =4
Marital status	Unmanned 98 Married 50 n= 148	*P = 0.014 X^{1} = 8.826 df =4
Level of education	Primary 83 Above primary 65 n== 148	*P = 0.049 X^{1} =4.134 df =2
Occupation	Informal 126 Formal 22 n=148	*P = 0.001 X^{1} = 8.542 df =4
Income per month in USD	Below 40 107 Above 40 41 n=14S	*P= 0.020 X^{1} =9.531 df =4
Religion	Catholic 53 Protestant 65 Muslim II Seventh day 17 Others 2 n =148	P = 0.074 X^{1} = 4.770 df = 7
Province	Kigali 66 Eastern 41 Northern 14 Western 6 Southern 21 n=148	P =0.0882 X^{1} =5.818 df = 7

Note: Marital status (Married included cohabiting, Unmarried included; single, divorced, separated, widowed. Level of education (Primary include non-formal education and primary education, above primary; secondary, tertiary education/college) occupation (Informal included student, unemployed, informal employment, business person. Formal: formal employment) Income per month (below 40 US dollars include less than 10 US dollar, 10-40 US dollars. Above 40 US dollars include 41-181 US dollars and above 585 US dollars)

Table 10: Social demographic characteristics and depressive episodes (N=3I)

Socio-demographic Characteristics		Statistical tests
Gender	Male 7 Female 24 n =31	*P = 0.036 X^{*} - 17.118 df =4
Marital status	Unmarried 21 Married 10 n=31	*P= 0.042 X^{1} =6 432 df =4
Level of education	Primary 13 Above primary 18 n=31	P= 0.092 X^{1} =10.267 df =4
Occupation	Informal 26 Formal 5 n=31	*P=0.036 Jt^{4} = 19.568 df =4
Income per month in USD	Below 40 23 Above 40 8 n= 31	*P= 0.002 X^{2} =12.621 df =2
Religion	Catholic 15 Protestant 11 Muslim 0 Seventh day 4 Others 1 n =31	P =0.150 X^{1} = 4.230 df = 7
Province	Kigali 11 Eastern 9 Northern 2 Western 3 Southern 6 n=31	*P = 0.046 X^{2} =4.082 df= 7

Note: Marital status (Married included cohabiting, Unmarried included; single, divorced, separated, widowed. Level of education (Primary include non-formal education and primary education, above primary; secondary, tertiary education/college) occupation (Informal included student, unemployed, informal employment, business person. Formal; formal employment) Income per month (below 40 US dollars include less than 10 US dollar, 10-40 US dollars. Above 40 US dollars include 41-181 US dollars and above 585 US dollars)

Table 11: Relationship between socio-demographic characteristics and PTSD (N'=20)

Socio-demographic Characteristics	Frequency	Statistical tests
Gender	Male 7 Female 13 n =20	*P = 0.025 t X^1 =0 .528 df =4
Marital status	Unmarried 17 Married 3 n=20	*P= 0.032 X^1 =4.886 df =4
Level of education	Primary 11 Above primary 9 n= 20	P = 0.346 X^1 = 5.749 df =4
Occupation	Informal 15 Formal 5 n=20	*P =0 .041 X^1 = 5.533 df =4
Income per month	Below 40 11 Above 40 9 n= 20	P = 0.346 A^2 =5.462 df = 4
Religion	Catholic 6 Protestant 10 Muslim 1 Seventh day 2 Others 1 n =20	P = 0.144 X^1 = 3.726 df= 7
Province	Kigali 8 Eastern 7 Northern 2 Western 2 Southern 1 n= 20	P=0.517 A^{r2} =2.069 df = 7

Note: Marital status (Married included cohabiting, Unmarried included; single, divorced, separated, widowed. Level of education (Primary included non-formal education and primary education, above primary; secondary, tertiary education/college) occupation (Informal included student, unemployed, informal employment, business person. Formal; formal employment) Income per month (below 40 US dollars include less than 10 US dollar. 10-40 US dollars. Above 40 US dollars include 41-181 US dollars and above 585 US dollars)

Table 12: Summary of Cross tabulation between socio-demographic characteristics and psychiatric disorders

Socio-demographic characteristic	Depression episode	Current maniac episodes	Schizophrenia	PTSD
Gender	*P = 0.036 X^2 = 17.118 Female (77.4%)	*P = 0.014 X^2 = 0.128 Male (56.2%)	*P -0.0178 X^1 = 1.456 Male (61.5)	*P = 0.025 X^2 - 0 .528 Female (65%)
Marital status	" P = 0.042 X^2 = 6.432 Unmarried (67.7%)	"P = 0.014 X^1 = 8.826 Unmarried (66.2%)	*P= 0.001 X^2 = 7.561 Unmarried (65.5%)	*P= 0.032 X^2 =4.886 Unmarried (85%)
Level of education	P = 0.092 A^{-2} = 10.267	*P = 0.049 X^2 =4.134 Primary (56%)	*P= 0.046 X^2 = 10.411 Primary (53.6%)	P= 0.346 X^2 = 5.749
Occupation	*P = 0.036 X^1 =9.568 Informal (83.8%)	*P = 0.001 X^2 = 8.542 Informal (85.1%)	*P = 0.002 X^2 = 11.801 Informal (89.4%)	*P = 0.041 X^2 =5.533 Informal (75%)
Income per month in USD	*P = 0.002 X^2 =12.621 Below 40 (74.1%)	*P= 0.020 X^2 =9.531 Below 40 (72.2%)	»P = 0.348 X^2 =9.325	P = 0.346 X^2 -5.462
Religion	P =0.150 X^1 =4.230	P = 0.074 X^1 = 4.770	P = 0.424 X^2 = 4.796	P =0.144 X^2 = 3.726
Province	*P = 0.046 X^2 =4.082 Kigali (35.4%)	P =0.082 X^1 =5.818	P=0.453 A^4 = 4.920	P=0.517 A^{*2}= 2 069

•Statistically significant when $p < 0.05$

Table 13: Relationship between duration of last admission and psychiatric disorder

Disorders	Duration of previous admission							
	1 week	2 week	3 weeks	1 month	2 month	More than 2 months	Toral	Statistical tests
Current manic	16	55	28	41	7	1	148	*P =0.031 X*" 4.568 df 5
Depressive episodes	6	9	10	3	2	1	31	P= 0.051 X^2"9.290 df5
Schizophrenia	18	56	33	35	5	4	151	*P =0.002 $X^2$2.33 5 Df 5
PTSD	4	10	3	2	0	1	20	P= 0 421 X*6.197 Df 5

Cross tabulation between duration of previous admission and psychiatric disorder shows a significant relationship in two psychiatric disorders, and most patients took duration of three weeks and below.

^Statistically significant when $p < 0.05$

Table 14: Relationship between family history of medical illness and psychiatry disorders

Disorder	Family History of medical illness		Total	
	Yes	No		
Schizophrenia	73	78	151	P= 0.078 X^J-3.472 dfl
Current manic episode	80	68	148	•P =0.040 X^2=2.580 dfl
Depressive episode	9	22	31	P= 0.067 X2=0.146 dfl
Post traumatic stress	7	13	20	P= 0.426 X^J= 1.247 dfl

'Statistically significant when $p < 0.05$

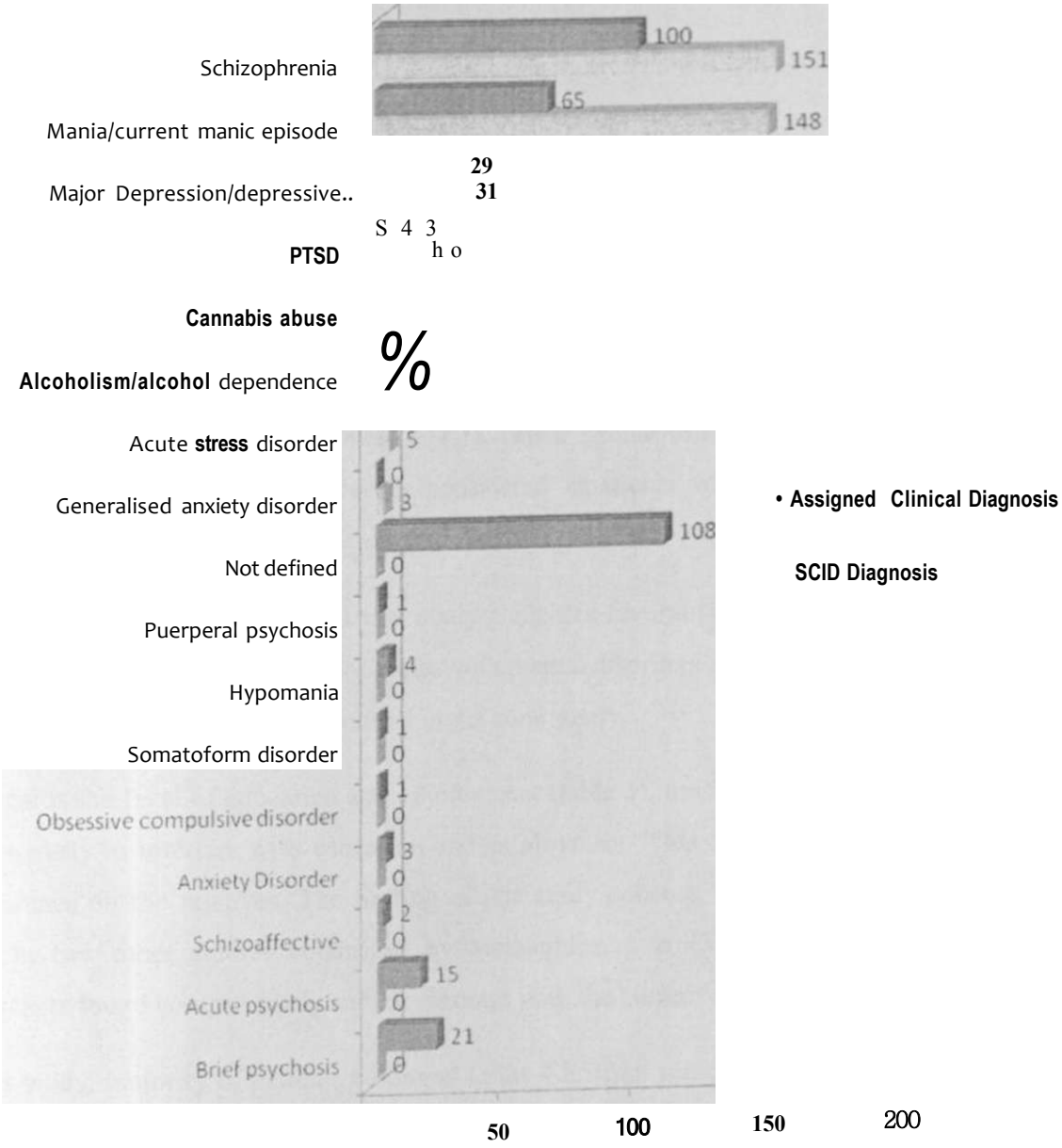
Table 15.Comparative table between Assigned clinical diagnosis and SC ID-I DSM-IV diagnosis

Assigned Clinical diagnosis	(N)	SCID-1 DSM-IV Diagnosis	(N)	Difference
Schizophrenia	100	Schizophrenia	151	51
Mania	65	Mania/Current manic episode	148	83
Major depression	29	Major depression/Depressive episode	31	4
Brief psychotic disorder	21	-	-	
Cannabis abuse	16	Cannabis abuse	17	1
Alcohol	5	Alcohol/Alcohol dependency	9	4
Posttraumatic stress disorder	13	Posttraumatic stress disorder	20	7
Acute psychosis	15	-	9	4
Acute stress disorder		Acute stress disorder	5	
Hypomania	4	-		
Anxiety disorder	3	Anxiety disorder	3	
Schizoaffective	2	-	-	
Obsessive compulsive disorder	1	-		
somatoform disorder	1	-		
Puerperal psychosis	1	-		
Not defined	108	-		
Total	384		384	154(40.1%)

SCID-1 DSM-IV diagnosis picked 40.1% of diagnosis which were missed in Assigned Clinical diagnosis

UNIVERSITY OF NAmow
y MEDICAL LIBRARY

fjoUre 1: Histogram showing relationship between assigned clinical diagnosis and SC ID-I DSM -IV diagnosis



CHAPTER FIVE: DISCUSSION

The main objective of the study was to determine the patterns of psychiatric morbidity among the patients in Ndera Neuropsychiatnc Hospital Kigali- Rwanda.

Study limitations

The first limitation was language; It was challenging to translate some scientific words to fit in local language dialect during the interviews.

The interview was based on information at the time of admission and therefore some patients could not recall all the details required.

Socio-demographic distribution

The observation drawn form the study was that majority of the patients were young (41.1%), male (58%) and single (51%) (Tables: 1, 2,3). This is similar to the data collected by Abebaw et al, although in this study researchers considered inpatients where as this study considered outpatients [44],

The gender distribution pattern of this study compares favorably with a similar study done by Tunelergo et al [35]. They are more males with mental disorders and the reason is that males are more aggressive and cannot be tolerated in the community.

As regards the level of education and employment (table 3), mental illness which starts early in life, is likely to interfere with education and employment. This leads to high level of financial dependence on the relatives. The finding of this study concurs with a study by Isohanni et al [31], In two other studies conducted by Mclaughlin et al [32] and Tunelergo et al [35], researchers found comparatively similar findings with the current study.

In this study, majority of patients belonged to the Christian religion, 94% (table 3). The author attributes this finding to the fact that majority of people in Rwanda are Christians (90%), (International Religious Freedom Report 2007). In contrast to this study, another study Tunalergo et al [35], predominantly featured Muslim patients. This was because the study was carried out in northern Nigeria where majority of people are Muslims. Although religion did not show statististical significance with psychiatric disorders. As regards the province of origin

(table 3). The majority of the patients came from Kigali catchment area where the hospital is situated. This was possibly due to improved awareness to mental health services and proximity to the hospital compared to the other provinces in Rwanda. The overall low number of patients seeking care in the hospital could be attributed to inaccessibility, lack of awareness, poverty and cultural beliefs. The findings of this study are similar to those from a study carried out by Abebaw et al [44],

Referral and mode of admission

The fact that majority (70.3%) of the patients were brought by the relatives shows that the social support system is strong. Psychotic disorders are severe mental problems that require inpatient care and psychosocial support which is provided by relatives. This support requires the involvement of family members and the community in management of mentally ill patients. The study findings are in agreement with other studies by Abiodun et al [37] and Franklin et al [39], A study by Carranza et al [38], indicated a variation in the depicted trends as shown in the current study.

Family History of Mental illness

This study found significant family history of mental illness in patients with current manic episodes, which compares with a study by Lukoye A et al [43] that showed persons with Posttraumatic stress disorder had relatives with mental illness. A family which has members with mental disorders is dysfunctional and the mental disorder interferes with communication and psychosocial support. In addition, family members cannot earn a living resulting to poverty and somatization.

Similarities as regards mental illness and family history of mental illness were evident but the setting were different, because the current study area was a psychiatric hospital.

Duration of Prev ious admission

The duration of admission in the hospital was told to be associated with a lower level of education as shown by findings in similar studies by Cicek et al [36], Rabinowitz et al [25]. Patients who are educated tend seek treatment early before the illness worsens and this gives a more favorable outcome on treatment.

Structured Clinical interview (SCTD-1) for DS\I-1\ Diagnosis

Studies by Abebaw et al [44], Ndetei DM et al [45] found similar trend of patterns of psychiatric morbidity with current study but differed on levels of substance abuse. The current study has relatively lower levels of substance abuse. This is probably due to lack access to the substances. In addition the study area was a small city as compared to the other two studies. Studies done by Thompson et al [47] and Wittchen et al [50], found pattern trend of psychiatric morbidity majority were non-psychotic disorders. The author attributes these findings to the higher level of education and better socio-economic status of the populations studied. Both of these studies focused on populations drawn from developed countries. These populations consist of people who are aware of Psychiatric symptoms and seek help adequately unlike in developing countries where psychiatric patients are recognized by destructive behavior and disturbances in the community. In addition to that, Mental illness in developing countries is associated with a lot of social stigma.

CHAPTER SIX: CONCLUSIONS AND RECOMMENDATIONS

The author found different patterns of Psychiatric morbidity in Ndera Neuropsychiatry Hospital. Kigali-Rwanda. This confirms the Alternative Hypothesis, which states there are variations in patterns of different psychiatric disorders among patients in Ndera Neuropsychiatry Hospital.

SCID-I diagnosis picked more Psychiatric disorder as compared to assigned clinical diagnosis.

Majority of the patients were admitted involuntary and were referred by relatives.

The following Socio-demographic variables; Gender, Marital status, occupation, Income per month, and Level of education were significantly associated to the major psychiatric disorder with P value < 0.05

The author identi fied the need to train hospital physicians, psychologists and nurses on how to use SCID-I in making diagnosis. This is because SCID-I is able to diagnose precisely more psychiatric disorders. There is also need to focus on interventions, which strengthen family support in caring for mental ill patients. The author also recommends a study on psychiatric morbidity in general population as well as a similar follow up study to determine variations or consistency in patterns of psychiatric morbidity among inpatients in Ndera NP-Hospital.

REFERENCES

1. N'detei D.M et al. The African Text book of Clinical Psychiatry and Mental Health .Nairobi AMREF, 2006: 3-4.

2. World Health Organization. The World Health Report 2001. Mental health: new understanding, new hope. Geneva: Available from htt://www.who.int.who 2001.

3. WHO International Consortium in Psychiatric Epidemiology. Cross-national comparisons of the prevalence and correlates of mental disorders Bulletin of the World Health Organization 2000;78 (4):

4. WHO World Mental Health Survey Consortium. Prevalence, severity, and unmet needs for treatment of mental disorders in the world health organization. JAMA 2004; 291(21):2581-90.

5. WHO International Consortium in Psychiatric Epidemiology. Cross-national comparisons of the prevalences and correlates of mental disorders. Bulletin of the World Health Organization 2000; 78:413-25.

6. Akiskal, HS. & Benazzi, F. The DSM-IV and ICD-10 categories of recurrent major depression and bipolar II disorders. Journal of Affective Disorders 2006;92(l):45-54.

7. United States Department of Health & Human Services. Overview of mental Illness. Retrieved 2007. Available at: emeraldinsight.com

8. American Psychiatric Association: Diagnostic and Statistical Manual of Mental Disorders (DSM-IV). 4th ed. Washington, DC: American Psychiatric Press; 1994.

9. Barbara Fadem. Board review series of Behavioral Science. 4th edition. USA: Lippincott Williams& Wilkins, 2005:135-136.

10. Ford DE, Kamerow DB. Epidemiologic study of sleep disturbances and psychiatric disorders. JAMA 1989; 262(11): 1479-84.

11. Abel G, Greenberg D, Bradford J. Understanding Assessment and Treatment of Paraphilias. Port Washington, NY 1996; 16

12. Nancy C.Andreasen, Donald W. Black. Introductory Textbook of Psychiatry 3" edition.Washington, DC:American Psychiatric, 2001: 541-549.

13. Gamma A, Angst J, Ajdacic V, Eich D, Rossler W. The spectra of Neurasthenia and depression. Eur Arch Psychiatry Clin Neurosci. 2007; 257(2): 120-7.

14. Folks DG: Munchausen's syndrome and other factitious disorders. Neurol Clin May 1995; 13(2): 267-81.

15. Kaplan & Sadock's Synopsis of Psychiatry: Behavioral Science, Clinical Psychiatry. 9: edition. USA: Lippincott, Wiliam & Wilkins, 2002:319.

16. Joshua T. Thomhill IV. National Medical series for independent study. 5th edition. USA Lippincotte, Willium& Wilkins, 2008: 10-11.

17. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR). 4th ed. Washington, DC: American Psychiatric Association; 2000.

18. Borthwick-Duffy SA. Epidemiology and prevalence of psychopathology in people with mental retardation. J Consult Clin Psychol 1994; 62(1): 17-27.

19. Lawson R. Wulsin, Hagengimana A. Exposure to trauma and prevalence of psychiatric disorders in Rwanda. Psychiatric Times 1998; 15: 4.

20 Bolton Paul, Neugebauer Richard, Ndogoni Lincoln. Prevalence of depression in rural Rwanda based on symptom and functional criteria. Journal of nervous & mental disease 2002; 190(9):631-637.

21. Njenga F. Focus on Psychiatry in East Africa. British Journal of Psychiatry 2002; 181:353-359.

22. Patrick Vinck, Rates Of PTSD And Depression .Among Adults Displaced by War In Uganda. JAMA 2007; 298(5):543-554.

23. Ovuga Emilio , Jed Boardman and Danuta Wasserman. The prevalence of depression in two districts of Uganda. Social psychiatry and psychiatric Epidemiology January 2005.

24 Kebede D, Alem A, Shibre T, Negash A, Deyassa N, Beycro T. Socio-demographic correlates of bipolar disorder in Butajira, rural Ethiopia. East Afr Med J. 2005; 82(I):34-9.

25. Rizwan Taj, Sabah Akhter, Zahida Nazar, Saeed Farooq. In patients psychiatric morbidity Pakatin institute of medical science (PIMS) 2005; 2 (1): 34-36

26 Noah K Ndosi and MLW Mtawali. The Nature of Puerperal Psychosis at Muhimbili National Hospital: Its Physical Co-Morbidity, Associated Main Obstetric and Social Factors. African Journal of Reproductive Health 2002; 6(1): 41-49.

27. AJ Flisher, M Fick, A Railoun, C Lund, C Molteno, BA Robertson. The prevalence of mental disorders among children, adolescents and adults in the Western Cape. South Africa, African Journal of Psychiatry 2006; 9(3):

28. Dan J. Stein ,Soraya Seedat, Allen Herman. Lifetime prevalence of psychiatric disorders in South Africa. The British Journal of Psychiatry 2008; 192: 112-117.

29 Rabinowitz, SZ.Levin and H.Hatner. a population based elaboration of the roles of age onset on the course of schizophrenia. Schizophrenia research 2006; 96101.

30. Elie G. Karam , Zeina N. Mneimneh, Hani Dimassi, John A. Fayyad , Aimee N. Karam, Soumana C. Nasser, Somnath Chatterji, Ronald C. Kessler . Lifetime Prevalence of Mental Disorders in Lebanon, First Onset, Treatment, and Exposure to War, 2008.

31.1. Isohanni, P. B.Jones, J. Croudace, M. Isohanni. Educational consequences of mental disorders treated in hospital. Psychological Medicine (2001), 31:2:339

32. McLaughlin Catherine G. Delays in Treatment for Mental Disorders and Health Insurance. Coverage. Health Serv Res. 2004; 39(2): 221-224.

33. Kessler. R C; McGonagle, K A; Zhao, S; Nelson, C B; Hughes, M; Eshleman, S; Wittchen, H; Kendler, K. "Lifetime and 12-Month Prevalence of DSM-III-R Psychiatric Disorders in the United States: Results from the National Comorbidity Survey. Archives of General Psychiatry [PubMed] 1994;51(1):8-19.

34. Spijker J, Bijl RV, de Graaf R. Nolen WA. Survey and Incidence Study on determinants of poor 1-year outcome of DSM-III-TR major depression in the general population. Acta Psychiatrica Scandinavic 2001; 103:122-30.

35. Tuna Lergo et al. Patterns of psychiatric illness in Kaduna psychiatric facilities. Journal of Social Development in Africa. 1989; 4 (1) 47-59

36. Cicek Hocaoglu et al. Evaluation of patients hospitalized at psychiatric clinic of a training hospital over the last four years in Turkey. Pak J Med Sci 2006; 22. 1. 60-63

37. Abiodun OA. Pathways to mental health care in Nigeria. Psychiatr Serv. 1995; 46(8):823-6.

38. Fredy J Carranza, Alice M Parshall. Psychiatric morbidity of overseas patients in inner London . Annals of General Psychiatry 2005; 4:4

39. Franklin RR, Sarr D, Gueye M, Sylla O, Collignon R, Mock N. Cultural response to mental illness in Senegal. Statistical correlates. Soc Med. 1996; 42(3):339-52.

40. Munk-Jorgensen P, Mortensen PB, Machon RA. Hospitalization patterns in schizophrenia. Schizophr Res (Pubmed). 1991 ;4(1): 1 -9.

41. Niehaus DJ, Koen L, Galal U, Dhansay K, Oosthuizen PP, Emsley RA, Jordaan E. Crisis discharges and readmission risk in acute psychiatric male inpatients. BMC Psychiatry-. 2008; 8:44.

42. Preti A, Rucci P, Gigantesco A, Santone G, Picardi A, Miglio R. de Girolamo G. Patterns of care in patients discharged from acute psychiatric inpatient facilities.Soc Psychiatry Psychiatr Epidemiol. 2009.

43. Lukoye Atwoli. Posttraumatic stress disorder among Mau Mau concentration camp survivors in Kenya, In Department of Psychiatry M.Med Dissertation, University of Nairobi, Nairobi 2006.

44 Abebaw Fekadu, Menelik Desta, Atalay Alem, Martin Prince.Descriptive analysis of admissions to Amanuel Psychiatric Hospital in Ethiopia. Ethiop.J.Health Dev. 2007;21 (2): 173-178

45. Ndetei DM, Khasakhala L, Maru H, Pizzo M, Mutiso V, Ongecha-Owuor FA, Kokonya

DA. Clinical epidemiology in patients admitted at Mathan Psychiatric Hospital, Nairobi, Kenya. Soc Psychiatry and Psychiatr Epidemiol, 2008 ;43(9):736-42.

46. Pillay AL, du Plessis WF, Vawda NB, Pollock LR. Demographic and readmission data in a therapeutic community for black psychiatric patients in South Africa. N Z J Psychiatry. 1994; 28(4):684-8.

47. Andrew Thompson, Mary Shaw,Glynn Harrison, Davidson Ho, and David Gunnell. Patterns of hospital admission for adult psychiatric illness in England. The British Journal of Psychiatry 2004; 185: 334-341.

48. Fitzpatrick. N. K.., Thompson, C. J, Hemingway, H., et al. Acute mental health admissions in inner London. Psychiatric Bulletin 2003; 27, 7-11.

49 European Study of the Epidemiology of Mental Disorders (ESEMeD) Project. Prevalence of mental disorders in Europe. Acta psychiatric Scandinavia 2004; (420):21.

50. Wittchen, H.U. and Jacobi, F. Size and burden of mental disorders in Europe. European Neuropsychopharmacology 2005; 15(4): 357-76.

51. Somers JM, Goldner EM, Waraich P. Hsu L. Prevalence and incidence studies of anxiety disorders. Can J Psychiatry 2006;51(2):100-13.

52. Waraich P, Goldner EM, Somers JM, Hsu L. Prevalence and incidence studies of mood disorders. Can J Psychiatry 2004;49(2): 124-38.

53. Kessler RC, Berglund P, Demler O, Jin R, Menkangas ICR, Walters EE. Life time prevalence and age of onset distribution of DSM-IV disorders in National comorbidity survey replication Arch Gen Psychiatry 2005 ;62(6):593-602.

54 Kessler RC, Chiu WT, Demler O, Menkangas KR, Walters, EE. Prevalence severity and comorbidity of 12 -month DSM-IV disorders. Arch Gen Psychiatry 2005 ;62(6):617-27.

55. Saha S, chant D, Welham J, McGrath J. A systemic review of the prevalence of Schizophrenia. PubMed 2005; 2 (5): 141

56. Bjil RV, Ravellin A, VanZessen G. Prevalence of Psychiatric disorders in the general population. Soc psychiatry and psychiatr epidemiol 1998; 33 (12) :587-95.

57. M B.. Spitzer, R.L., Gibbon, M. and Williams, J.B.W. What is reliability of SCID-1?, htt: wrww.scid4.org/scidl_reliability 2005.

APPENDICES

\PPENDIX A1: Informed consent Explanation

To be read and questions answered in a language in which the subject is fluent.

(Kinyarwanda or English)

My names are Dr Mudenge Charles Post graduate student in Psychiatry in the University of Nairobi. As part of my Training, I am required to do a research project. My study aims is to find out the different types of mental disturbances that are common, their severity in Outpatients attending in Ndera NP-Hospital. This study will be carried out under the supervision of

Dr Mburu John and Prof D M. Ndetei who are both Lectures in the department of Psychiatry, University of Nairobi.

This is a Medical research study and you are required to understand the following general principles, which apply to all in medical research. Your agreement is entirely Voluntary, You may withdraw from the study at any time.

Refusal to participate will not lead to any penalty or benefit to which you are otherwise entitled.

After you read the explanation, please feel free to ask any questions that will allow you to understand clearly the nature of the study.

The procedure will involve me asking you questions concerning your illness history. I will also ask you questions about your feelings, Thoughts and Behavior. Some questions I will ask may be personal and may elicit emotional or psychological discomfort; you are free not to respond in case you feel uncomfortable. These will be in form of Questionnaires. No invasive procedure such as drawing of blood will be involved.

All information obtained from this study will remain confidential and your privacy will be upheld. Identification will be by number only, no names will be used in this study or in its future publications.

I hope that information generated by this study will be of benefit, leading to the implementation of better interventions and comprehensive care for mentally ill patients in Rwanda.

In case you have any questions pertaining to your role and rights as a research participant you are free and encouraged to seek clarification/ guidance from the ethics committee through the following contact.

Prof A.N Guantei Tel 2727300 ext 44355 KNH Nairobi.

a

\PPENDIX A2 : Consent Form

Research participant statement

I. the undersigned having been fully explained and understood the purpose, risks and benefits of the above study do hereby Voluntarily to participate in this study. The nature and purpose have been fully explained by Dr Mudenge Charles.

I, understand that all information gathered will be used for the purposes of this study only and my confidentiality will be upheld throughout.

Signature_____Date

Investigators statement

I confirm that I have fully explained to the above all the details pertaining to my study and I have given an opportunity to ask questions and all the questions have been satisfactory answered.

I will abide by the statements and spirit of this consent.

Signature_____Date_

Dr. Mudenge Charles

\PPEND1X B: Socio-demographic Questionnaire

Date

Serial number_

I Age in years

2. Sex Male Female (tick where appropriate)

3. Marital status.

i. Single ● 1

ii Married ●

iii. separated ●

iv. Divorced ●

v. Widowed ●

v. Cohabiting ●

4. Highest level of education.

i. No formal education ●

ii. Primary ●

iii. Secondary ●

iv. Tertiary (College/University ●

5. Occupation

i. Student ●

ii. Formal employment ●

i Informal employment

iv. Business person

v. Unemployed

v i More than 1 category

specify

Others specify

6 Income per month (in US dollars)

i. <10

ii. 10-40

iii. 41-180

iv. 181-545

v> 545

7. Religion

i. Catholics

ii. Protestants

iii. Muslims

iv. Seventh Day Adventists

v. Others specify

8. Province

i. Kigali town

si Eastern

i Northern

iv Western

v Southern

9. Family history of mental illness (Yes) |___| (No)

10. Previous admissions (Yes) j j^No)

If Yes,

Number of previous admissions

2

>2

Duration of Previous admissions

1 -7 days	1 week	
8-14 days	2 weeks	
15-21 days	3 weeks	
22-29 days	1 month	
30-60 days	2 month	
>61	>2 month	

11. Assigned Clinical diagnosis

12. a. Mode of admission

i. Voluntary

ii. Involuntary

b. Referred by

Husband

Wife

Relative

Others specify

iii. Emergency

Referred

a. Police

b. Local chief

c. Others specify

APPENDIX C: Structured clinical Interview for DS.M IV Axis -Disorder (SCID-I)

Structured Clinical Interview for the Diagnosis and Statistical Manual IV(SCID) screening module

Sou 1 want to ask you some more specific questions about problems you may have had. We will go into more details later.

1 = NO (N) *2* = SUBTHRESHOLD(S) 3 = YES(Y)

Responses 2 or 3 score means more probing needed. Go to the pages indicated in the brackets. The following sections are mandatory: 1, 2, 3, 8, 9, 20, and 21. All the same, try all sections.

SI Have there been any times in your life when you have had 5 or more drinks of alcohol
N on one occasion? (4,5) 1 2 3

52 Have you ever used drugs of addiction? (6) 12 3

53 Have you ever gotten hooked on any prescribed medication or taken more of it than you were supposed to? (Insert/give details at the back of the code sheet)

1 2 3

54 Have you ever had a panic attack; when you suddenly felt frightened or anxious

or suddenly developed a lot of physical symptoms? (12). 1 2 3

55 Were you ever afraid of going out of the house alone, being in crowds, standing in the line, traveling in taxis or buses? (13). 1 2 3

56 Is there anything that you have been afraid to do or felt uncomfortable doing in front of other people, like speaking, eating or writing? (14). 1 - 3

57 Are there any other things that you have been especially afraid of like flying, seeing blood, heights, closed places or certain kinds of animals/insects? (15 1 2 3

58 Have you ever been bothered by thoughts that did not make any sense and kept coming to you even when you tried not to have them? (16) 1 -

S9 Was there ever anything that you had to do over and over again, that you could not resist doing, like washing your hands again and again, counting up a certain number, or checking something several times to make sure you had it right? (16) 1 2 3

S10 Sometimes things happen to people that are extremely upsetting, like being in life threatening a situation like a major disaster, accidents or fire; being physically assaulted or raped; seeing another person killed or dead or badly hurt; or hearing about something horrible happening to someone close to you. At any time during your life, have any of these things happened to you? (17

1 2 3

SI 1 In the last six months, have you been particularly nervous or anxious? (18, 19)

1 2 3

512 Have you been sick a lot over the years? (20) 1 2 3

513 Have you ever had a time when you weighed much less than other people thought you ought to weigh? (1,2,3,8,9,21) 1 2 3

514 Have you often had times when your eating was out of control? (as S13 above)

1 2 3

515 Has there ever been a time when your mood was excessively high for several days or more? If yes, anyone of the following present? (10) 1 2 3

Were your thoughts racing? 1 -

Were you bursting with energy? 1 -

Did you think you had "special" power or abilities? 1

516 Have you ever had unusual experiences, for example, interference of your thoughts, that your thoughts could be read; that messages could be put in your mind; that the radio,

TV or newspaper was talking about you; that you were being spied on; or that you could hear voices that other people could not? (11) 1 2 3

\B: IF ANY OF THE ABOVE IS SCORED "2" OR "3", GO TO THE APPROPRIATE MODULE.

SCID MODULES.

1.DEPRESSIVE EPISODES

A1	Depressed mood for 2 or more weeks	**2**	
A2	Loss of interest in daily activities	**2**	
A3	Weight loss or gain	**2**	
A4	Weight loss or decreased appetite	**2**	
A5	Weight loss or increased appetite	**2**	
A6	Insomnia	**2**	
A7	Hypersomnia	**2**	
A8	Psychomotor agitation	**2**	
A9	Psychomotor retardation	**2**	
A10	Fatigue or loss of energy	**2**	3
A11	Feelings of worthlessness	**2**	3
A12	Feelings of inappropriate guilt	**2**	3
A13	Diminished ability to concentrate or think	**2**	3
AI4	Indecisiveness	**2**	3

A15 Recurrent thoughts of own death 1 2 3

A16 Suicidal ideation 1 2 3

A17 Specific plan for suicide 1 2 3

A18 Suicide attempt 1 2 3

A19 At least 5 of the primary symptoms above are coded "3"

and at least one of these is item A1 or A2 (Official only) 1 2 3

A20 Symptoms cause significant distress or impairment 1 2 3

A21 Not due to direct effect of substance or medical condition 1 2 3

A22 Not better accounted for by bereavement 1 2 3

A23 Major depressive episode (Official only) 1 2 3

2. DYSTHYMIC DISORDER.

A83 Depressed mood for the past 2 years 1 2 3

A84 Poor appetite or over-eating 1 2 3

A85 Insomnia or hypersomnia 1 ~ 3

A86 Low energy or fatigue 1 2 3

A87 Low self-esteem 1 2 3

A88 Poor concentration or difficulty in making decisions 1 2 3

A89 Hopelessness ' - -

A90 At least 2 symptoms above (A84-A89) are coded "3" (Official only) 1 2 3

A91 Symptoms have not been absent for more than 2 months 1 2 3

A92 No major depressive episode during first 2 years of disturbance 1 2 3

A93 Age of onset of current dysthymic disorder (Insert actual age in score sheet)

A94 Has never had a manic or hypo manic episode 1 2 3

A95 Does not occur during course of chronic psychotic disorder 1 2 3

A 96 Not due to direct effects of a substance or medical condition 1 2 3

A97 Symptoms cause significant distress or impairment 1 2 3

A98 Dysthymic disorder (Official only) [A83, A90, A91, A95, A96, and A97 are all code "3"] 1 2 3

3 DEPRESSIVE DISORDER NOT OTHERWISE SPECIFIED (NOS)

D"[7] Depressive symptoms that do not meet criteria for manic-depressive episode, Dysthymia, adjustment disorder, or not accounted for by bereavement 1 2 3

D8 Not due to direct effect of a substance or medical condition 1 2 3

D9 Depressive disorder not otherwise specified (NOS): - (Official) Rate 1, 2, 3,4 or 5

Post-psychotic depressive disorder of schizophrenia

Major depressive disorder superimposed on delusional disorder, psychotic disorder not otherwise specified, or active schizophrenia

Minor depressive disorder

Recurrent brief disorder

Other

D10 Depressive disorder not otherwise specified present in the last month

1= Yes 2 = No

4 SUBSTANCE USE DISORDERS:

ALCOHOL DEPENDENCE

AI Alcohol taken in large amounts or for long periods

A2 Persistent desire or unsuccessful efforts to cut down drinking

A3 Large amounts of time spent in activities obtaining alcohol

A4 Important activities given up or reduced

A5 Use continued despite physical or physiological problems

A6 Increased tolerance

A7 Withdrawal: at least two of

(a) Sweating or

(b) Racing heart,

(c) Hand shakes,

(d) Trouble sleeping,

(e) Feeling nauseated,

(f) Feeling agitated,

(g) Feeling anxious,

(h) Having a seizure,

(i) Seeing or,

(j) Hearing things that are not really there.

(k) If no withdrawal, then alcohol to relieve withdrawal.

A8 Onset and course:

When did your drinking problems first start? (Insert date in the scores)

How long did they go on for?(Insert in the score sheet)

A9 Treatment:

Did you see a doctor about your drinking problems?	1	2	3
Did you receive any treatment?	I	2	3

What treatment? (Insert in the score sheet)

Did you seek any other professional help?	1	2	3

What help? (Insert in the score sheet)

5. ALCOHOL ABUSE: At least one of the items A10-A13 coded "3" if present in the last 12 months period.	1	2	3
A10 Failure to fulfill role	1	2	3
Al 1 Physically hazardous	1	2	3
A12 Legal problems	1	2	3
A13 Social problems	1	~	3

6.DRUG DEPENDENCE.

Now I am going to ask you some specific questions about your use of..... (Drugs)

Have you ever taken any of these to get high, to sleep better, to lose weight, or to change your mood?

Sedatives/hypnotics / anxiolytics: Valium, Librium, barbiturates, Milltown, Ativan. Restonl, Seconal.

Cannabis: marijuana, hashish, bhang, tetrahydrocabbinol.

Stimulants: amphetamine / "speed", Crystal meth, Dexadrine. Ritalin/methylphenidate/'ice'.

Opioids heroin, morphine, opium. Methadone, Darvon, Demerol, Dilaudid, Pethidine, Codeine, Pentazocine, methaqualone, Madrax.

Cocaine, intranasal, intravenous, 'freebase', 'crack', and 'speedball'.

Hallucinogens: PCD, LSD, Mescaline, Peyote, PCP ('angle dust'), Ecstasy. MDMN, others.

Other drugs e.g. Khat, nicotine, glue, paint, inhalants, nitrous oxide ('laughing gas').

B1 Large amounts / longer periods 1 2 3

B2 Persistent desire / unsuccessful efforts to control/cut down 1 2 3

B3 Great deal of time spent obtaining/recovering 1 2 3

B4 Social, occupations, recreations given up or reduced 1 2 3

B5 Use despite physiological/physical problems 1 2 3

B6 Tolerance (either markedly increased amounts for desired effects, or markedly diminished effects) 1 2 3

B7 Withdrawal

(a) Ever had withdrawal symptoms when cut down or stopped drug? 1 2 3

(b) Ever taken more of drug to get rid of withdrawal symptoms? 1 2

LIST OF WITHDRAWAL SYMPTOMS

Sedatives hypnotics anxiolytics: two or more of the following developing within several hours to a few days after cessation (or reduction) after heavy or prolonged use

Autonomic hyperactivity	1	2	3
Increased hand tremor	1	2	3
Insomnia	1	2	3
Nausea and vomiting	1	2	3
Transient visual, tactile or auditory hallucinations or illusions	1	2	3
Psychomotor agitation	1	2	3
Anxiety	1	2	3
Grand mal seizures	1	2	3

(b) Stimulants:

< i) Cocaine: - dysphoric mood and two or more of the following physiological changes

Fatigue	1	2	3
Vivid unpleasant dreams	I	2	3
Insomnia or hypersomnia	1	2	3
Increased appetite	1	2	3
Psychomotor retardation or agitation	1	2	3

(ii) Opioids: - three or more of the following

1. Dysphoric mood	1	2	3
2. Nausea and vomiting		1	- -[1]
3. Lacrimation or rhinorrhoea		1	2 3

4. Muscle aches I

5. Sweating, piloerection I

6. Diarrhea 1

7. Yawning 1

8. Fever 1

9. Insomnia 1

7. DRUG ABUSE

B8 Recurrent useTailure to fulfill major roles / obligations 1

B9 Recurrent use in hazardous situations 1

BIO Recurrent use related to social problems I

B11 Recurrent use related to social problems 1

B12 Onset and course

(a) When did the drug problems first start? (Insert on the score sheet)

(b) When did they finally stop? (Insert on the score sheet).

B13 Treatment

(a) Did you see a doctor about the drug problems? 1

(b) Did you receive any treatment? 1

(c) What treatment? (Insert on the score sheet)

(d) Did you seek any other professional help? 1

|e) What help? (Insert on the score sheet)

How old were you when you first started taking drugs? (Insert on the score sheet)

8 RECENT MAJOR DEPRESSIVE EPISODE: AT LEAST FIVE ITEMS C1-C9 CODED "3". ONE OF THEM CI OR C2, IN SAME 2-WEEK PERIOD.

CI Depressed mood	1	j	
C2 Diminished interest/pleasure	1	2	
C3 Weight/appetite gain or loss	1	2	
C4 Sleep disturbance: insomnia or hypersomnia or early waking	1	2	
C5 Psychomotor agitation or retardation	1	2	
C6 Fatigue or loss of energy	1	2	
C7 Feeling of worthlessness or inappropriate guilt		12	
C8 Diminished ability to concentrate or indecisiveness	1	2	
C9 Recurrent thoughts of death, suicidal ideation	1	2	
CIO Episode not due to medical condition/medication/substance	1	2	3
CI 1 Episode not following bereavement	1	2	3

C12 Treatment (Insert on the score sheet)

C13 When did your depression start? (Insert on the score sheet)

C14 How long did it go on? (Insert on the score sheet)

9 PAST MAJOR DEPRESSIVE EPISODE

I would like to ask you about other times in your life when you have felt very low.

C15 Depressed mood	1	2	3
CI6 Diminished interest/pleasure	1	2	3

C i[7] Weighi/appetite gain or loss 2

CI8 Sleep disturbance: insomnia or hypersomnia or early waking 2

C19 Psychomotor agitation or retardation 2

C20 Fatigue or loss of energy 2

C21 Feeling of worthlessness or inappropriate guilt 2

C22 Diminished ability to concentrate or indecisiveness 2

C23 Recurrent thoughts of death, suicidal ideation, specific suicide plan, or suicide attempt(s) 1 2 3

C24 Episode not due to medical condition/medication/substance 1 2 3

C25 Episode not following bereavement 1 2 3

C26 Treatment (Insert on the score sheet)

C27 When did your depression start? (Insert on the score sheet)

C28 How long did it go on? (Insert on the score sheet)

10. MANIA: CURRENT MANIC EPISODE. AT LEAST D1 PLUS ANY THREE D2-D7 (OR FOUR IF MOOD IS IRRITABLE) IN A WEEKS TIME (OR LESS IF ADMISSION NEEDED).

Dl Persistently elevated expansive or irritable mood 1 2 3

D2 Inflated self-esteem or grandiosity 1 2 3

D3 Decreased need for sleep 1 2 3

D4 Flight of ideas/subjective experiences of racing thoughts 1 2 3

D5 Distractibility (attention too easily drawn to unimportant or irrelevant stimuli)

D6 Increase in goal directed activity (socially, at work, school or sexually) or

Psychomotor agitation 1

D7 (a) Excessive involvement in pleasurable activities that have high potential for

Painful experience 2

D7 (b) 3 Three or more of above (D1-D7): MANIC EPISODE (Official) 2

D8 Not due to a mixed episode 2

D9 Significant impairment in function 2

D10 Not due to medication, drug of abuse or medical condition 2

Dl I (a) Past episodes of mania 2

(b) How many? (Insert on the score sheet)

Dl2 Treatment (Insert on the core sheet)

11. SCHIZOPHRENIA:

El Delusions

1. Delusions of reference **2** 3

2. Persecutory delusions 2 3

3. Grandiose delusions **2** 3

4. Somatic delusions **2** 3

5. Delusions of control **2** 3

6. Bizarre delusions 2 3

- Thought insertion

S Thought broadcasting

9. Thought insertion

10. Other delusions (Insert on the score sheet)

E2 Hallucinations

1. Running commentary hallucinations

2. Third party hallucinations

3. Visual hallucinations

4. Tactile hallucinations

5. Commanding hallucinations that are obeyed

6. Other hallucinations (Insert on the score sheet)

E3 Disorganized speech

E4 Behavior

I Catatonic (motor immobility)

2. Excessive motor activity

3. Extreme negativism

4. Posturing or stereotyped movements

5. Grossly disorganized speech

6. Grossly inappropriate effect

E5 Negative symptoms

1. Affective flattening

2. Alogia 1

3. A volition '

E6 Social/ occupation dysfunction I

E7 Not schizoaffective or mood disorder I

E8 Previous treatment (Insert in the score sheet)

E9 If any two of E1-E5 are "3": SCHIZOPHRENIA 1

12. LIFE HISTORY OF PANIC DISORDER

Panic attack

F1 Suddenly felt frightened, or anxious or developed physical symptoms

F2 Attacks came out of the blue

F3 How many attacks? (Insert in the score sheet)

IF NONE STOP, HERE; IF PRESENT:

F4 Worry about implications?

F5 Concern about additional attacks? 2

F6 Significant changes in behavior 2

F7 Criterion panic attack 2

F8 Abrupt/peak in 10 minutes 2

F9 Autonomic symptoms:

(i)Heart race, pound or skip beat 2

(ii) Tremble /shake 2

(iii) Short of breath 2

(iv)Fcel choking 2

Have nausea, stomach upset or diarrhea 2

(vi) Feel dizzy, unsteady or faint 2

Feel unreal 2

Fear of going crazy or dying 2

Tingling/numbness in parts of the body 2

Flushes or chills 2

F10 Not due to substancc medical condition 1

F11 Life time panic disorder: Recurrent unexpected panics (at least two) with four or more autonomic symptoms 1 2 3

13. PANIC DISORDER WITH AGORAPHOBIA

F12 Situations

Away from home 2 3

Crowded places 2 3

Standing in a queue 2 3

Being on a bridge 2 3

Using public transport 2 3

F13 Endured with marked distress 2 3

LIFE TIME AGORAPHOBIA (NO HISTORY OF PANIC ATTACK)

F14 Agoraphobic symptom (being alone, in a crowd, in a queue public transport or other) 1 2

IF "NO". **STOP HERE.**

F! 5 Endured with marked distress 1 2 3

F16 Avoidance 1 2 3

F17 Not due to substance or medical condition 1 2 3

14. LIFETIME **SOCIAL PHOBIA**

Fl 8 Marked and persistent fear in social situations 1 2 3

IF "NO", **STOP HERE**

F19 Exposure to feared social situation almost invariably provokes anxiety 1 2

F20 Fear is excessive 1 2

F2I Avoidance 1 2

F22 Endured with marked distress I 2

F23 Interfered with normal routine 1 2

F24 Not due to substance or medical condition 1 2 3

15. LIFETIME **SPECIFIC PHOBIA**

F25 Marked and persistent fear of flying, seeing blood, heights, closed places, certain kind of animals or insects 1 2 3

IF "NO", STOP **HERE**

F26 Exposure to feared phobic stimulus almost invariably provokes anxiety 1 2 3

F27 Fear excessive 1 2 3

F28 Avoidance I 2 3

F29 Endured with marked distress 1 2 3

F30 Interference with normal routine 1 2 3

F31 Not due to substance or medical condition 1 2 3

16. LIFE TIME OBSESSIVE COMPULSIVE DISORDER (OCD)

F32 Obsessions: recurrent and persistent thoughts/impulses/images 1 2 3

IF "NO". STOP HERE

F33 Attempts to ignore or suppress such thoughts 1 2 3

F34 Thoughts/images/impulses recognized as coming from own mind I 2 3

F35 Compulsions: Repetitive behaviour e.g. washing, counting, checking I 2 3

F36 Behaviour aimed at preventing or reducing mental distress or preventing some dreaded event/situation 1 2 3

IF "NO" TO OBSESSIONS OR COMPULSIONS, STOP HERE.

F37 Excessive thoughts 1 2 3

F38 Marked distress/time consuming 1 2 3

F39 Not due to substance medical condition 1 2 3

17. LIFE TIME POST TRAUMATIC STRESS DISORDER (PTSD)

F106 Traumatic Event List: (Score for each one of them 0=not present; or l=present)

i. Been involved in a road or motor accident? 0

ii. Been attacked with a gun? 0

iii. Been attacked with a knife or a similar weapon? 0

iv.Any member of your family been attacked with a gun? 0

v.Any member of your family been attacked with a knife or a similar weapon? 0

vi.Ever been physically assaulted, causing you bodily harm? 0

vn.Been sexually assaulted/ raped? 0

viii.Your house been burned by fire? 0

ix Been caught up in a riot? 0

x Been robbed in armed robbery or mugged? 0

xi Your house/home been broken into by armed robbers? 0

xii. Been involved in a car- or matatu-jacking? 0

xiii.Been involved in a life-threatening flood? 0

xiv Been involved in tribal clashes? 0

xv Witnessed violence in the street, neighbourhood, or school? 0

xvi.Been robbed? 0

xvii.Seen family members injured, beaten, hurt or killed? 0

xviii.Been beaten or physically hurt, beaten or hurt? 0

xix.Been physically hurt or attacked by a non-family member? 0

xx.Others (specify/insert in the score sheet) 0

F107 (a) Experienced, witnessed, or was confronted with an event involving actual or threatened death, serious injury, or the physical integrity of self or others, e.g. a very seriousaccident or fire; being physically assaulted or raped; seeing another person killed, dead or badly injured

1 2 3"

(b) Hearing about something horrible that has happened to some one close to you

i

	1	2	3
IF "NO". STOP HERE.			
F108 Response: involved intense fear, helplessness or horror	I	2	3
FI09 Recurrent, intrusive and distressing recollections (including images, thoughts, perceptions)			
	1	2	3
F110 Recurrent distressing dreams	1	2	3
Fl 11 Re-living the experience	1	2	3
F112 Autonomic symptoms	1	2	3
F113 Intense psychological distress to cues	1	2	3
Fl 14 At least one of the above (F109-F113) coded "3" (Official)	1	2	3
IF NO SYMPTOM PRESENT, STOP HERE.			
Fl 15 Efforts to avoid thoughts, feelings, conversation about event	1	2	3
Fl 16 Efforts to activities, places or conversation about event	1	2	3
F117 Inability to recall an important aspect	1	2	3
F118 Diminished interest or participation in activities	1	2	3
F119 Detachment or estrangement from others	1	2	3
F120 Restricted range of affect	1	2	3
Fl 21 Sense of foreshortened future	1	2	3
F122 At least three of the above (Fl 15-F121) coded "3" (Official)	1	2	3
F123 Difficulty falling or staying asleep	1	2	3
Fl 24 Irritability or outbursts of anger	1	2	3

F125 Difficulty in concentrating	'	2	
FI26 Hypervigi lance	'	-	
F127 Exaggerated startle response	'	2	
F128 At least two of the above (F123-F127) coded "3" (Official)	1	2	
F129 Duration at least one month	1	-	
F130 Causes marked distress or significantly interferes	1	2	
F131 Post -Traumatic Stress Disorder F107, F108, F114, F122, F122, F128, F130 all coded "3" (Official)	1	2	
F132 Current PTSD (symptoms of PTSD in past month) (Official)	1	2	

18. GENERALISED ANXIETY DISORDER (GAD)

F138 Excessive anxiety and worry	1	2	
F139 Difficult to control	1	2	
F140 Not during mood disorder or psychotic disorder	1	2	
F141 Restless, keyed up or on edge	1	2	
F142 Easily fatigued	1	2	3
F143 Difficulty in concentrating	1	2	3
F144 Irritability	1	2	3
F145 Muscle tension	1	2	3
F146 Sleep disturbance	1	2	3
F147 At least three of the above (F141-F146) coded "3" (Official)	1	2	3
F148 Focus not confined to another axis I disorder	1	2	3

F149 Distress or impairment 1 2 3

F150 Not due to direct effects of a substance or medical condition 1 2 3

FI51 Generalized anxiety disorder (F138. F140, F150 ALL CODED "3") (Official)

1 2 3

19. ACUTE STRESS DISORDER

J9 Numbing, detachment or absence of emotional response

J10 Reduction in awareness of surroundings

J11 Derealization

J12 Depersonalization 2 3

J13 Dissociative amnesia 2 3

J14 At least three of the above (J9-J13) coded "3" (Official) 2 3

J15 Causes marked distress or significantly interferes 2 3

J 16 Duration at least 2 days and less than 4 weeks; and occurs within 4 weeks of traumatic event 1 2 3

J17 Not due to direct effects of a substance or medical condition 1 2 3

J18 ACUTE STRESS DISORDER

(J6-J9 all code "3" and F107, F114, F122, F128 all code "3") (Official) 1 2 3

J19 ACUTE CURRENT STRESS DISORDER

(Symptoms of Acute Stress Disorder in past month) (Official) 1 2 3

20. SOMATIZATION DISORDER

G1 Screen 12-Somatization Disorder (Official) 1 2 3

G2 History of many physical complaints before age 30 (Official)

G3 Age at onset (Insert on the score sheet)

G4 Impaired co-ordination or balance

G5 Paralysis or localized numbness

G6 Difficulty swallowing or lump throat

G7 Aphonia

G8 Urinary retention

G9 Loss of touch or pain sensation

G10 Double vision

G11 Blindness

G12 Deafness

G13 Seizures

G14 Amnesia

G15 Loss of consciousness

G16 One symptom above (G4-G15) code "3" (Official)

G17 Head pain

G18 Stomach pain

G19 Back pain

G20 Joint pain

G21 Pain in the extremities

G22 Chest pain

G23 For women, pain during menstruation	1	2	3
G24 Pain during intercourse	1	2	3
G25 Pain during urination	1	2	3
G26 Pain anywhere else	1	2	3
G27 Four symptoms above (G17-G26) coded "3" (Official)	1	2	3
G28 Nausea	1	2	3
G29 Bloating	1	2	3
G30 Vomiting other than during pregnancy	1	2	3
G31 Diarrhoea	1	2	3
G32 Intolerance of several foods	1	2	3
G33 Sexual indifference	1	2	3
G34 Two symptoms above (G28-G33) coded "3" (Official)	1	2	3
G35 Irregular menses	1	2	3
G36 Excessive menstrual	1	2	3
G37 Vomiting through out pregnancy	1	2	3
G38 One symptom above coded "3"	1	2	3
G39 Somatization Disorder (G2, G16, G27, F34, G38) all coded "3" (Official)	1	2	3

21. ADJUSTMENT DISORDER

H1 Emotional or behavioural symptoms in response to an identifiable stressor occurring within 3 months of stressor e.g. divorce, diagnosis of a terminal illness	]	2	3

G23 For women, pain during menstruation 1 2 3

G24 Pain during intercourse] 2 3

G25 Pain during urination 1 2 3

G26 Pain anywhere else 1 2 3

G27 Four symptoms above (G17-G26) coded "3" (Official) 1 2 3

G28 Nausea I 2 3

G29 Bloating j 2 3

G30 Vomiting other than during pregnancy 1 2 3

G31 Diarrhoea j 2 3

G32 Intolerance of several foods 1 2 3

G33 Sexual indifference 1 2 3

G34 Two symptoms above (G28-G33) coded "3" (Official) 1 2 3

G35 Irregular menses 1 2 3

G36 Excessive menstrual 1 2 3

G37 Vomiting through out pregnancy 1 2 3

G38 One symptom above coded "3" 1 2 3

G39 Somatization Disorder (G2, G16, G27, F34, G38) all coded "3" (Official)

1 2 3

21. ADJUSTMENT DISORDER

HI Emotional or behavioural symptoms in response to an identifiable stressor occurring within 3 months of stressor e.g. divorce, diagnosis of a terminal illness 1 2 3

H2 The symptoms cause marked distress in excess of what would be expected

1 2 3

H3 The symptoms cause significant impairment in social or occupational functioning

1 2 3

H4 The symptoms do not represent, bereavement 1 2 3

H5 Once the stressor has terminated, the symptoms do not persist for more than an additional 6 months 1 2 3

H6 Predominant symptoms may be of depressed mood, anxiety, mixed or disturbance of conduct 1 2 3

22. DELIRIUM

K1 Disturbance of consciousness with reduced ability to focus, sustain or shift attention

1 2 3

K2 Change in cognition not due to established or evolving dementia 1 2 3

K3 Disturbance develops over a short period of time (hours to days) and tends to fluctuate during the of the day 1 2 3

K4 Disturbance is not caused by direct physiological consequences of a general medical condition 1 2 3

23. DEMENTIA

LI Impaired ability to learn new information or to recall previously learned information

1 2 3

L2 One or more of:

(i) Aphasia I 2 3

(ii) Apraxia 1 2 3

(iii) Agnosia 1 2 3

(iv) Disturbance in executive functioning i.e. planning, organizing 1 2 3

L3 Cognitive deficits in LI and L2 cause significant impairment in social or occupational functioning and represent a significant decline from a previous level of functioning

1 2 3

L4 Course is characterized by gradual onset and continuing decline 1 2 3

L5 Deficits do not occur exclusively during the course of a delirium 1 2 3

APPENDIX 6: SCID **I** score sheet

SCREENING PAGE

S i —-S2—S3—S4—S5—S6—S7—S8—S9—S10—S11 —-S12—S13—S14--S15—-S15(a)

Si5(b) SI5(c) - S16

1 DEPRESSIVE EPISODES

A1-L-A2 A3 *A4*—A5—A6—A7—A8—A9—A10-A11 -—A 12—-A 13 A14 15--

--A16—A17—AI8—

A19*—A20—A21—A22 A23*—

2. DYSTHYMIC DISORDERS

A83 A84 A85 A86- A87 A88 A89 A90* A91 A92-

A93 A94—

A95 A96. . . . . A97 A98*

3 DEPRESSION DISORDER NOT OTHERWISE SPECIFIED

D7 D8 D9 D10*

4 SUBSTANCE USE DISORDERS:

ALCOHOL DEPENDENCE

AI A2-—A3 A4—A5—-A6—A7(a) A7(b) A7(c)—A7(d)— A7(e)-—

—7(f)—A7(g)

A7(h)-. . . . . A7(i)—. . . . . A7(j) A7(k) A8(a) A8(b). . . . . A9(c)~-

A9(d). . . . . -

A9 (e). . . ..- A9 (0—-

A9 (g)

5. ALCOHOL ABUSE

A10 A11 A12 A13

6. DRUG DEPENDENCE

B1 B2 B3 B4 B5 B6 B7 (a) B7 (b)

a) Sedatives: a)1 a)2 a)3 a)4 a)5 a)6 a)7 a)8

b) Stimulants:

(i) Cocaine:- b)(i)1 b)(i)2 b)(i)3 b)(i)4 b)(i)5

(ii) Opioids:- b)(ii)1—b)(ii)2—b)(ii)3—b)(ii)4—b)(ii)5—-b)(ii)6—-b)(ii)7—b)(ii)8~ ~b)(ii)9—

7. DRUG ABUSE

B8 B9 B10 B11 B12 (a) B 12(b) B 13(a) B13(b)

B 13(c)

813(d)—-B13 (e) (f)

8. RECENT MAJOR DEPRESSIVE EPISODE

C1 C2 C3 C4 C5 C6 C7 C8- C9 C10 C11

CI 2 C13 C14

9. PAST MAJOR DEPRESSIVE EPISODE

C15 C16—-C17 C18 C19 C20 C21 -----C22 C23-—C24 C25-—

C26 C27 C28

10. CURRENT MANIC EPISODE

D1. . . . D2. . . . D3—D4. . . . D5—-D6--D7-— D8---D9 D10--D11 (a) D11 (b)

D12

11. SCHIZOPHRENIA

E1 Delusions

E11 —E12—E13—E14—E1 5—E16—E17—E18—E19—E20

E2 Hallucinations

E21—E22—E24—E25—E26

E3 Disorganized Speech—

E4 Behavior

E41 —E42—E43—E44—E45—E46—E47—

E5 Negative symptoms

E51—E52—E53—

E6 Social/Occupational dysfunction—

E7 Not Schizo-affective or Mood Disorder-—

E8 Previous treatment—

12. LIFE HISTORY OF PANIC DISORDER

F1—F2—F3—F4-—F5—F6—F7—F8---F9—-

F9.1 —F9.2—F9.3—F9.4—F9.5—-F9.6-—F9.7-—F9.8—F9.9—F9.10—

F10—

F11—

PANIC DISORDER WITH AGORAPHOBIA

F12 Situations

F12.1—F12.2—F12.3—F12.4—F12.5—

F13—FI4—FI5—FI6—

LIFE TIME SOCIAL PHOBIA

F18—F19—F20—F21 —F22—F23—F24—

LIFE TIME SPECIFIC PHOBIA

F25—F26—F27—F28—F29—F30—F31 —

LIFE TLME OBSESSIVE COMPULSIVE DISORDER

F32—F33—F34—F35—F36—F37—F38—F39—

POST TRAUMATIC STRESS DISORDER- LIFETIME PTSD

F106—F107—F108—F109—-F110—F111 —F112—F113—F114—F115----F116—
F117—F118—F119—F120—F121 —F122—F123—F124—F125—F126—F127-—
F128—-F129—-F130—-F131 —F132*—

GENERALISED ANXIETY DISORDER

F138—F139—-F140—-F141—F142—F143—F144—F145—-FI46—F147—F148-—
FI49—F150—F151*

ACUTE STRESS DISORDER

J9—J10—J11 —J12-—J13—J14*—J15--J16—J17—J18—J19*—

SOMATIZATION DISORDER

G i....G2—G3—G4—G5—G6—G7—G8—G9—G10—G11 —G12—G13—G14—G15—G16—G17—G18-—G19—G20—-G21 —G22—G23-—G24—G25-—G26—-G27-—G28-—G29—G30—G31—G32—G33—G34—G35—G36—G37—G38—G39«—

ADJUSTMENT DISORDER

Ci—C2—C3—C4—C5—C6—

DEL IRIUM

K.1—K2—K3—K4—

DEMENTIA

LI—L2-—L3—L4—L5—

APPENDIX D - (a): Approval letter from Kenyatta National ethics and Research and committee

(h): Approval letter from Rwanda National Ethics committee

medial library

C S C 3

KENYATTA NATIONAL HOSPITAL
Hospital Rd. aong, Ngong Rd
P.O. Box 20723, Nairobi.
Tel; 726300-9
Fax: 725272
Telegrams: MEDSUP*, Nairobi.
Email: KNHplan@Ken.Healthnet.org

Ref: KNH/UON-ERC/ A/99

3m November 2008

Dr. Mudenge Charles
Dept. of Psychiatry
School of Medicine
University of Nairobi

Dear Dr. Mudenge

RESEARCH PROPOSAL: "PATTERNS OF PSYCHIATRIC MORBIDITY AMONG PATIENTS IN NDERA NEUROPSYCHIATRY HOSPITAL KIGALI-RWANDA' (P252/9/2008)

This is to inform you that the Kenyatta National Hospital Ethics and Research Committee has reviewed and approved your above revised research proposal for the period 3rd November 2008 - 2nd November 2009.

You will be required to request for a renewal-of the"approval if you intend to continue with the study beyond the deadline given. Clearance for export of biological specimen must also be obtained from KNH-ERC for each batch.

On behalf of the Committee, I wish you fruitful research and look forward to receiving a summary of the research findings upon completion of the study.

This information will form part of database that will be consulted in future when processing related research study so as to minimize chances of study duplication.

Yours sincerely

PROF. A N GUANTAI
SECRETARY, KNH/UON-ERC

c.c. Prof. K.M. Bhatt, Chairperson, KNH-ERC
The Deputy Director CS, KNH
The Dean, School of Medicine, UON
The Chairman, Dept. of Psychiatry, UON
Supervisors: Dr. J. Mburu, Dept. of Psychiatry, UON
Prof. D.M. Ndetei, Dept. of Psychiatry, UON

NATIONAL ETHICS COMMITTEE / CO.WITE NATIONAL D'ETHIQl E

Telephone: (250) 55 10 78 84
E-mail: rnecg moh.gov.rw
Assurance No. FWA 00001973
IRB 00001497 of IORGOOOllOO

Ministry of Health
P.O. Box 84
Kigali, Rwanda.

Kigali, 15th December 2008

No: 01/RNEC/2008

Dr Charles Mudenge
University of Nairobi

RE: Patterns of Psychiatric Morbidity Among Patients in Ndera Neuro psychiatric Hospital. Kigali

After reviewing your protocol during the RNEC meeting of November 22nd 2008, where quorum was met, and revisions made on the advice of the RNEC, submitted on December 10m 2008, we hereby provide approval for the above mentioned protocol.

Please note that approval of the protocol and consent form is valid for 12 months.

You are responsible for fulfilling the following requirements:

1. Changes, amendments, and addenda to the protocol or consent form must be submitted to the committee for review and approval, prior to activation of the changes.
2. Only approved consent forms are to be used in the enrollment of participants
3. All consent forms signed by subjects should be retained on file. The RNEC may conduct audits of all study records, and consent documentation may be part of such audits.
4. A continuing review application must be submitted to the RNEC in a timely fashion and before expiry of this approval.
5. Failure to submit a continuing review application will result in termination of the study.

Sincerely, X ^ J I K

Dr. Kayitesi KAYITENKORE.
CHAIR, Rwanda National Ethics Committee.

C.P.I.
- Hon. Minister of Health.
- The Permanent Secretary, Ministry of Health.