

**FACTORS ASSOCIATED WITH READMISSION OF PSYCHIATRIC
PATIENTS TO THE MENTAL HEALTH UNIT IN JINJA REGIONAL
HOSPITAL.**

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**AN UNDERGRADUATE RESEARCH REPORT SUBMITTED TO THE SCHOOL
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DECLARATION

I Mukazungu Joan, hereby declare to the best of my knowledge that this Research report on factors associated with readmission of psychiatric patients to the Mental Health Unit in Jinja Regional Hospital is my own original work and has never been published in this University for any recognition or award.

Signed.....

Mukazungu Joan

Date:

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DEDICATION

This research is dedicated to my family and the entire Nursing Fraternity.

APPROVAL

I hereby accept that this research report on factors associated with psychiatric readmission of patients to Mental Health Unit in Jinja Regional Hospital has been produced under my supervision.

Signature..... Date

Mr.Afayo Robert
Supervisor

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ACRONYMS

BNMRH : Butabika National Mental Referral Hospital

CI : Confidence Interval

JRFH : Jinja Regional Referral Hospital

MOH : Ministry of Health

WHO : World Health Organization

DEFINITION OF TERMS

- Mental illness** : Any disease of the mind; the psychological state of someone who has emotional or behavioral problems serious enough to require psychiatric intervention
- Re-admission** : Is the act of admitting someone again after being discharged.
- Stigmatization** : to set some mark of disgrace or infamy upon.
- Treatment** : Is a medical or psychological care given to a patient for an illness or injury.
- Relapse** : Worsening of symptoms after an initial improvement of the disorder.
- Depression** : Is a mood disorder majorly characterized by persistent sadness, feelings of hopelessness and emotional coldness.

ABSTRACT

Readmission of inpatients has been one of the most important problems in the field of psychiatry for the last decades. The problem has a major role in reducing the quality of life and increasing the years of lost life. About 14% of the global burden of disease is attributable to mental disorders and are projected to reach 15% by the year 2020. Even in sub-Saharan Africa, mental disorders account for nearly 10% of the total burden of disease.

A case control study design was adopted by to investigate the factors associated with psychiatric readmission of patients to Mental Health Unit in Jinja Regional Referral Hospital.

A sample of 98 cases and 98 controls were selected using a convenience sampling technique. A pre tested semi structure questionnaire was used to collect data which was analyzed using bivariate and multi variate analysis.

The findings revealed that lack of drugs (<0.001), no history of aggression ($p=0.013$), no history of suicide ($p=0.004$), substance abuse ($p=0.015$) were significantly associated with psychiatric readmission of patients.

The findings suggest need for increased funding to mental health units to ensure adequate and constant supply of drugs to patients. Offer psycho education to the patients and public about the effect of substance abuse, positive coping mechanism to minimize on the cases of readmission.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

Mental illness has become a worldwide concern with one in four persons (25%) suffering from mental illness in both developed and developing countries. Four of the leading disorders being depression, alcohol related disorders, schizophrenia and bipolar Affective Disorders (WHO, 2013). Mental disorders account for about 14% the disease burden globally, and are projected to reach 15% by the year 2020. In sub-Saharan Africa mental disorders account for approximately 10% of the disease burden though communicable diseases are also common.

According to Kiwawulo (2010), it is estimated that about 11.5 million people in Uganda suffer from some type of mental disorder with depression being the most common. Barely half of the people with the disorders seek medical help from health care facilities because people only associate mental illness with advanced manic psychosis. WHO, (2008) stated that mental illness is connected to many other health conditions and is one of the most costly medical disorders to treat. Baron (2000) noted that addictive disorders such as alcohol abuse, drug abuse and smoking are well known for high levels of readmissions.

Readmission of patients to psychiatric wards has been one of the biggest problems in the field of psychiatry and it greatly reduces the quality of life of individual patients as well as increasing the years of lost life of the patients. Medicare Payment Advisory Commission (2007) adds that readmissions to hospitals have become a major area of concern to policymakers because excess readmissions may be a sign that the level of care being provided by hospitals is low.

Though most patients who leave the hospital never want to be readmitted in a short time, many of them who get discharged find themselves back in the hospital within a period of 30 days. Some of these readmissions are planned others are not and may be due to the natural course of illness. Some of these hospital readmissions are avoidable whereas others are thought to be indicators of poor care. Hospitalizations are costly, and readmission of patients contributes significantly to that cost (Minott 2008).

About one-third of patients admitted to psychiatric services will probably be readmitted within a year (Akincigil A, 2008, Goldston, 2003). A significant number of patients have serious problems after being discharged from hospitals which result in an increase in the number of psychiatric emergency referrals and readmissions (Barekatin, 2013). Demographics, social, clinical, poor adherence to treatment, non-voluntary first admission, substance, alcohol, and drug abuse have been mentioned as related factors to the readmission of patients to psychiatric wards (Roick C, 2004).

Bassani DG (2009) adds that length of stay at hospital has also been notified as a highly related factor to readmission to a psychiatric Unit. The shorter the length of the stay at a hospital, due to the lack of empty beds, the more readmission of psychiatric patients. This decreases the quality of care and definitely increases the costs. This is in line with Reynolds W (2004) who noted that the number of beds in psychiatric hospitals has notably decreased due to the increased number of admitted patients and this has been complemented by day or outpatient services.

However, according to Kigozi F. (2010), Uganda has only 32 psychiatrists yet the number of mental cases seems to be increasing due to alcohol and drug abuse. This is a very small number

to treat the high mental cases and it poses a serious social and economic threat to the country due to the increasing number of patients.

According to Agugilia (2007), in the study conducted in Italy indicated that only 50% of the patients with mental illness in the Italian community receive regular and adequate drug treatment for a set period of time which causes many patients with schizophrenia to be readmitted in the hospital. He continues to say that approximately 1/3 of the patients are compliant, one third partly compliant and the other one third not compliant contributing to recurrent hospital readmissions. Nord j. (2002), in the study stated that approximately 50% of all patients admitted to the psychiatric hospitals have ever been previously admitted patients.

Out of 180 patients discharged at the Convalescent wards of Butabika National Mental Referral Hospital, 20(11.1%) patients were readmitted in April and 23(11.9%) by May 2010 leading to an increase of 0.9%. It's upon this background that the researcher is compelled to investigate the factors associated with psychiatric readmission of patients to the Mental Health Clinic.

1.2 Statement of the Problem

Hospital readmission rates are an important indicator of quality of care as they may result from actions taken or omitted during the initial hospital stay of patients. The analysis of hospital readmissions is complicated by the fact that not all readmissions are preventable, even with optimal care. A readmission may result from incomplete treatment or poor care of the underlying problem, or may reflect incomplete discharge planning and/ or inadequate access to care. Illiteracy about the nature of disease, non-drug-compliance, side effects of the drugs, and lack of financial support among others increase the rate of readmission.

In Uganda, Butabika Hospital is still the only National Referral Mental Health Institution however the health sector has performed considerably well in view of the shortfalls in the required health system inputs. Over 95,106 mental patients were seen in the various clinics at the Outpatients unit, community mental health service programme resettled 1,225 patients to their homes, 2,114 patients were seen at four of the mental health outreach clinics at Nansana, Kitetika, Nkonkonjeru and Maganjo-Nkonkojeru.

Nearly 1,812 students from various Health Institutions are trained and technical support supervision is done to regional referral hospitals. (MOH, 2010). The increasing prevalence of psychiatric readmissions in Jinja Regional Hospital (12% monthly) despite the many interventions to curb the problem calls for the need to study the factors associated with the readmissions which the researcher is out to study.

If the problem is not addressed, families will continue to disintegrate, stigmatization of the mentally ill will be perpetuated, quality of health care to mental patients will be compromised and there will not be enough financial and human resources to manage the problem hence the need to study the factors associated with readmission.

1.3 General objective

To investigate the factors associated with readmission of psychiatric of patients to the mental health unit in Jinja regional hospital.

1.4 Specific Objectives

The study will be guided by the following objectives;

- i. To determine the socio-demographic factors of patients re-admitted to the Mental Health Unit of Jinja Regional Hospital
- ii. To identify psychosocial factors associated with readmission of psychiatric patients in Jinja regional hospital
- iii. To establish the health system factors associated with readmission of psychiatric patients in Jinja regional hospital
- iv. To identify the patient related factors associated with readmission of psychiatric patients in Jinja regional hospital.

1.5. Research Questions.

- i. What are the socio- demographic factors of patients re-admitted to the Mental Health Unit of Jinja Regional Hospital?
- ii. What are the psychosocial factors associated with readmission of psychiatric patients in Jinja regional hospital?
- iii. What are the health system factors associated with readmission of psychiatric patients in Jinja regional hospital?
- iv. What are the patient related factors associated with readmission of psychiatric patients in Jinja regional hospital?

1.6 Justification for the Study

Mental health is a severely underdeveloped aspect world over and Uganda is not any better. Most people admitted to mental hospitals find themselves readmitted a couple of days after their

discharge (Byaruhanga, et al, (2012). More than three decades of research on frequent users of psychiatric services attest to the continuing problem of readmitted patients. Clinical and socio-demographic factors that are associated with readmission have been studied widely but there has been little consistency in findings across the different health care systems.

A better understanding of factors that reduce the likelihood of multiple psychiatric admissions is needed.

Since readmission patterns associated with any type of hospitalization raise important policy issues, this research will help Policy makers to review and improve upon the health system by improving on the infrastructure in terms of space, beds so as to allow appropriate time of stay required for effective recovery of the patients thus preventing undue discharges.

The research will also address the health system factors such as staffing and the subsequent challenges, medication in relation to patient care. This will help the policy makers develop strategies on how to improve on the availability of drugs, recruitment and training of more human resource thus, providing holistic care. Such knowledge will also help planners to set priorities and to make appropriate services and resources available to patients and their families after hospital discharge.

The study will pave way for the Ministry of Health to generate resources to mental health in order to curb down on the rate of readmission.

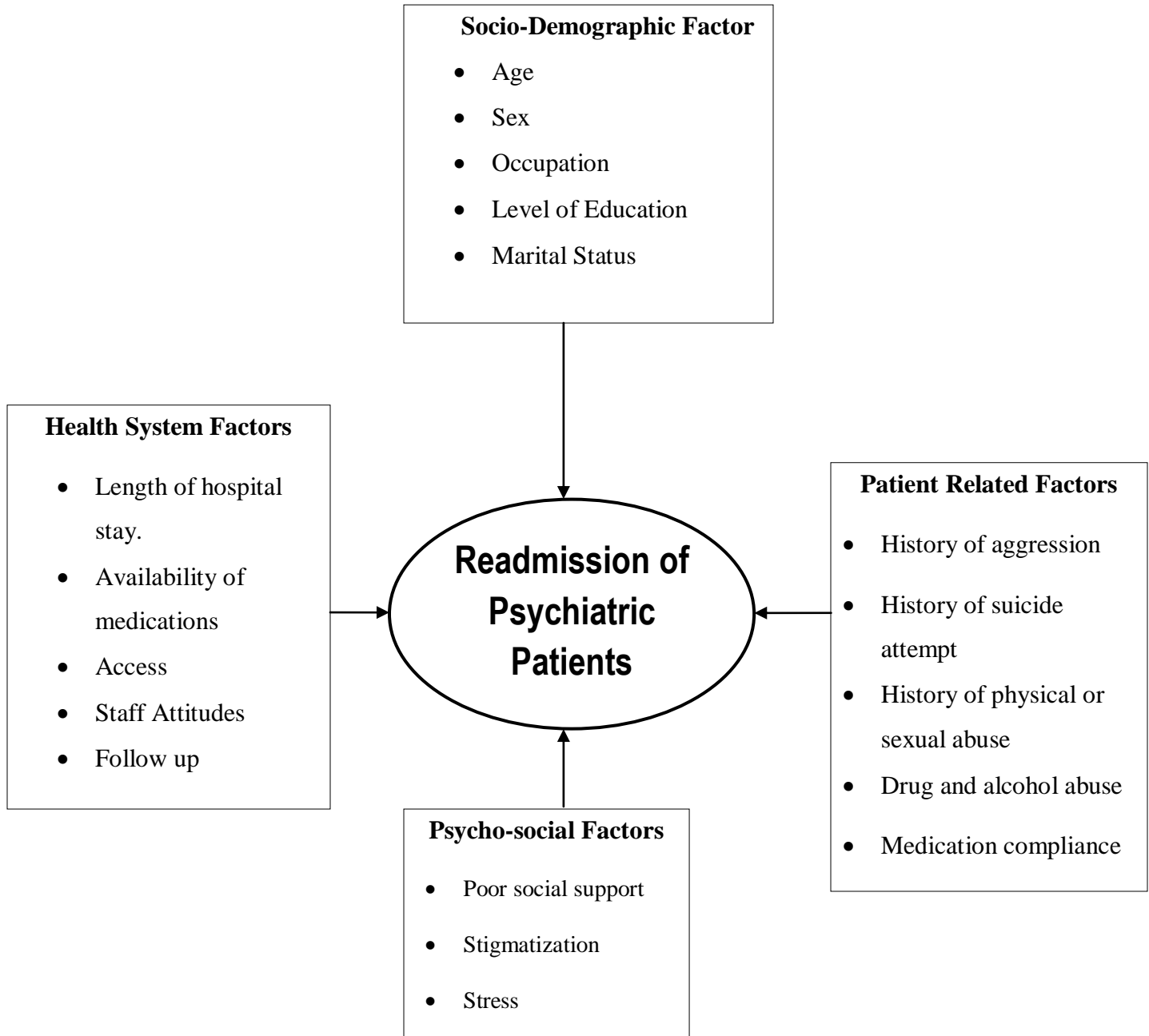
To the Hospital administrators and Staff, it will raise the need to intensify sensitization about the dangers of readmission, how to care for patients after discharge and what the families can do to prevent readmission of patients

It will greatly assist the concerned authorities and Health Workers of Jinja National Referral Hospital identify areas which require urgent intervention. This will help policy makers to plan health effective interventions that will reduce on the magnitude of re admission of psychiatric Patient.

The study will also help to policy makers and planners in allocating funds to different mental health programs and campaigns to help improve on accessibility of services and drugs.

This study therefore, will investigate the factors associated with psychiatric readmissions of patients to mental health units and effectively benefit different stakeholders such as patients, policy makers and health care professionals.

Conceptual framework indicating factors associated with readmission of psychiatric patients in Jinja Mental Health Clinic.



The above framework indicates a link between different factors that are associated with readmission of mental patients in hospital that is health system related, environmental and psychological factors.

Health system factors such as poor infrastructure hinder accessibility, delay referrals, negatively affect health seeking behaviors of individuals leading to increased instances of re-hospitalization of patients. In addition lack of medications at health care facilities, the cost of drugs, and ineffectiveness of drugs, the high nurse patient ratio also hinder effective management increasing the proportion of readmissions.

Poor social and family support, alcohol and drug abuse if not addressed considerably increase the numbers of patients being readmitted to mental hospitals.

Studying the factors associated with these readmissions may help improve the management programs in the hospital and communities enhancing early interventions hence reducing the number of patients being readmitted. This does not only reduce the number of readmitted cases, but Improves the quality of life of such individuals, increases productivity and reduces government expenditure associated with the management of the readmitted patients.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

Deinstitutionalization of mental health services contributed to the faster transformation of psychiatric hospital based care to the community based services. However, a significant number of the patients got major problems after being discharged from hospitals which led to an increase in the number of psychiatric patient referrals and readmissions. Prevention of readmissions is a major challenge in the care of patients with mental disorders. Early identification and prevention of reoccurrence of psychiatric disorders has significant social, psychological and economic implications (Kazadi et al., 2008).

2.1. Socio-demographic characteristics of patients re-admitted to the Mental Health Unit

Readmission of psychiatric patients to hospitals for decades has been one of the most important problems in the field of psychiatry. Readmission of patients has a major role in reducing the quality of life of individual patients and increasing the years of lost life. Approximately one-third psychiatric patients admitted to hospital will probably be readmitted within a period of years' time. In the cross sectional study on factors associated with psychiatric readmission of patients conducted on 3935 admitted to Isfahan University Hospital Psychiatric found out that 22% patients were aged over 65 years. At the emergency ward 19% of the readmitted children were aged 4–18 and at the psychological ward of the army 14% of the readmitted patients were teenagers (Barekatin et al, 2013). There was a significant statistical difference between males and females ($P < 0.002$). This is expected as the sample population and area is big enough to yield

comparative results and the time frame from 2004 to 2010 was an ample time to assess the different demographic characteristics of readmitted patients.

Niehaus DJH, Koen L, Galal U, et al (2008) adds that factors such as marital status, unemployment, retirement, and gender, are the most relevant factors to readmission. There is need for a better understanding of the factors related to readmission to help better management and early intervention. Understanding these factors will decrease the number of readmissions and hospital costs. The inpatients who are seeking rehospitalisation tend to repeat some of these treatment-seeking behaviors and this may assist health workers in planning care.

According to Palazzo, M.D. et al, (2009) age at first admission was inversely associated with multiple readmissions; patients who were younger at first admission were more likely to experience multiple readmissions, even after adjustment from current age. Those whose first admission was involuntary had higher odds of multiple readmissions than those with an involuntary first admission. In this case-control study of factors associated with multiple psychiatric readmissions found out that of the 307 patients in the case group and 354 in the control group, most were non married. There were 214 males (69%) in the case group and 231 males (65%) in the control group. Individuals in the case group were relatively younger at first admission than those in the control group (27.3 and 9.6 years and 30.7 and 11 years, respectively. ($p < .001$)

Analysis also found an inverse association between wealth and multiple readmissions. Patients in the highest wealth quintile had lower odds of multiple readmissions than those in the lowest quintile. Patients with multiple readmissions were more likely to be unmarried and unemployed,

retired, or receiving a disability pension, even after intra-level adjustments. The study was based on specific cases selected by the researcher and the sample size was big enough. This research was based on specific cases with similar characteristics with all conditions constant which is not the case for a society and the hospital. More still the research did not clearly bring out the relationship between the different demographic characteristic of patients and how they influenced the readmission. Level of education was not associated with hospital readmission in this study.

In the study about factors associated with readmission to a psychiatric facility found out that out of 123 patients 61% were male. The patients' mean age was 17 to 83 years. A majority of the patients 78 percent were single, separated, divorced, or widowed. One-hundred and twenty patients (60 percent) had a secondary school education, and 40 (20 percent) had some college or university education. A large proportion 154 patients, or 77 percent were unemployed; 22 patients (11 percent) were either employed full-time or self-employed (Anna C. Bernardo et al, 2001). This implies that all categories of individuals in society are susceptible to be readmitted to a psychiatric unit although the magnitude of readmission varies.

In the Alastair Mason et al (2000) study, after adjustment for age, gender, hospital, severity of illness, and the overall probability of re-admission within each diagnosis related group, significant predictors of risk of re-admission within 60 days included being poor, unskilled or semiskilled occupation, living in rented accommodation. Other predictors of re-admission included increasing distance from and to the hospital, increasing age also added re-admission risk coupled with length of stay, marital status and place of disposition. In this study logistic regression models was used to examine the readmission experience of nearly 12,000 patients,

adjusting for age, gender, hospital, severity of illness, and the overall probability of readmission within each diagnosis related group. After adjustment, patients were more likely to be readmitted within 60 days if they were poor, worked in unskilled or semiskilled occupation, or rented their homes.

However, Social support factors including marital status, living situation, and availability of help at home were not associated significantly with the risk of readmission. The results suggested that patients in lower socioeconomic positions have higher readmission rates, at least for readmissions within longer time periods.

Similarly in a retrospective study done to identify the Predictors of psychiatric readmissions to the psychiatric unit of a tertiary health facility in a Nigerian city 41.4% of 208 were cases of readmissions and comparing the patients' mean age at index admission and at readmissions, there was significant association between age and readmission, with patients who were readmitted significantly more likely to be younger (21-40 year age-group) ($F=18.1, p<0.000$).

2.2 The psychosocial factors associated with readmission of psychiatric patients

Patients with mental illness are more sensitive and more susceptible to the negative effects of even minor stressors. A study conducted in Nigeria found that these stressors included grief following loss of a close family member (20%), lack of employment (17%), and lack of social support (20%). Others stressors involve chronic interpersonal stress, poverty, homelessness, stigma and criminal victimization (Mwaba & Molamu, 1998, as cited in Kazadi et al., 2008). In addition (Murray & Castle, 2000) in a study conducted using a purposive sampling method about the factors associated with relapse among patients with schizophrenia found out that out of 217 patients, 134 (61.8%) had relapsed at least once $P \leq 0.001$ was considered. It is noted that

stressful life events are often associated with the onset of a psychotic relapse leading to readmission..

Similarly Chabungbam, Avasthi& Sharan (2007) in a convenient sample of 40 patients with schizophrenia found that patients with mental illness who experience a higher number of life stressors during the previous 6 months after discharge are more likely to break down and be readmitted to hospital. These life events include number of psychotic episodes, unemployment and psychological trauma. This is in line with Brown (2005), who noted that life events, pressure and criticism from close relatives and friends highly contribute to a number of patients being readmitted in mental hospitals. Relatives always wish to express their opinion about the patient's disorder which leads to patients' emotional involvement resulting into relapse hence readmission.

Allays (2005), notes that there is fairly consistent evidence from prospective studies that recent life events and poor interpersonal relationships between the patients and family members contributes to the likelihood of patients breaking down after discharge and being readmitted.; Other studies have shown that stress may be related to reoccurrence and severity of symptoms among Patients with mental disorders like schizophrenia. They expressed increased stress relating to their domestic environment, which was a result of interpersonal conflicts between patients and their parents, children, neighbors or extended family members (Betensky, Robinson, Gunduz-Bruce, Sevy, Lencz, Kane et al., 2008).

In a descriptive exploratory study done in South Africa (Neliswe, 1995), it was found that psychiatric patients were expected to care for themselves with the help of family members and psychiatric community based organizations but instead are confronted with attitudes and reactions which are not conducive for readjustment in the community leading to subsequent

breakdown and readmission. Usually these are not accepted as the same people as they were or into the same roles they used to perform after a number of hospitalizations making them frequently unemployed and contributing to subsequent readmissions in the mental hospitals.

Because of widespread cultural beliefs that mental illness is caused by witchcraft, patients are often taken to traditional healers and regarded as an embarrassment to the family (Byaruhanga, et al. 2012). This leaves the patients with little or no social support which is a very fundamental element in the prevention of readmissions among mental patients.

Breen, (2007) further noted that caring for a mentally ill family member brings increased financial, emotional and social burdens to the family. Failure of the families to cope with the increased burdens results in patient neglect, relapse and subsequent re-hospitalization. Families also have to deal with the stigma associated with mental illness which sometimes leaves them with no option but abandon and neglect the mental patients.

In addition (Marom, Munitz, Jones, Weizman& Hermesh, 2005) in a study noted that Patients from high criticism households had a significantly higher number of psychiatric readmissions and longer cumulative length of stay at psychiatric hospitals than patients from low criticism households irrespective of their compliance status. The interaction of high criticism plus poor compliance was also noted to be additional contributors to time to time readmission of psychiatric patients.

According to Ndhlovu,(2010), stigma and discrimination common within the general community, amongst family members significantly affects post hospitalized patients that they shortly get readmitted to an in-patient stay after discharge. Societies are obsessed with negativity

when it comes to the welfare of individuals who are mentally challenged leading to their isolation and neglect hence the regular hospitalizations of such individuals.

According to Kaye Healey,(2000), in a study done in Australia about mental illness and society issues found that mental patients after discharge remain vulnerable and disadvantaged because they continue to suffer widespread discrimination and consistent denial of rights and services by family, society members leading to high chances of relapse hence re admission.

Recreation-involvement in enjoyable activities, relaxation and stress management including somatic, psychological, and contemplative approaches are central to healthy lifestyles. Religious or spiritual involvement greatly benefits mental patients by enhancing psychological, relational, and marital well-being, as well as reduced rates of disorders such anxiety, depression, substance abuse, and suicide. Altruism is said to reduce unhealthy mental qualities such as greed, jealousy, and egocentricity while enhancing healthy qualities such as love, joy, and generosity. These contemporary TLCs can be as effective as either psychotherapy or pharmacotherapy and have minimal if not no side effects. Limbikani, (2009), in a study noted that underestimation of the importance of life style factors such as exercise as contributors to cognitive wellbeing of patients with mental illness has significantly contributed to their long stay and readmission to psychiatric units. Lifestyle changes are known to treat multiple psychopathologies, foster individual and social well-being preserve and that optimize cognitive function of and individual.

2.3 The health facility factors associated with psychiatric readmission.

At the heart of each country's health system, health workers struggle to provide high-quality care to growing patient loads in increasingly challenging working conditions. In poor countries,

especially in sub-Saharan Africa, doctors and nurses, along with their colleagues in laboratories and pharmacies, face shortages of supplies, poor compensation, inadequate management systems, and burdensome workloads (Hagopian, 2009).

Reducing avoidable hospital readmissions represents a unique opportunity for policymakers, payers, and providers to reduce health care costs while increasing the quality of patient care. Identifying best practices and policies to reduce avoidable readmissions improves quality, reduce unnecessary health care utilization and costs, promoting patient-centered care, and increase value in the health care system. (Minott 2008). A number of system factors, such as coordinated care and seamless communication and information exchange between inpatient and community-based providers, may also lead to unplanned readmissions.

According to Juyoung D., (2012) in findings from previous retrospective studies have shown hospital readmissions were associated with inadequate discharge planning, especially under the current cost policies, complications from medication, noncompliance with medication regimens and early discharge to a location where the patient's needs for post hospital care are not met.

Lazarus and Freeman (2011) argue that mental health care services in resource-poor countries are underdeveloped and largely restricted to urban areas, to hospital-based care and to people with severe mental disorders. Common mental disorders such as depression and anxiety, which account for by far the highest proportion of the prevalence and burden of mental disorders, receive little, if any, attention in health care. Human resources for mental health care are generally minimal. There is a general lack of awareness amongst frontline health workers of mental health and emotional problems, and how to detect such problems and intervene at that level.

According to Ssebunnya, Kigozi, Kizza, and Ndyabangi (2009), over the last two decades, several initiatives have been undertaken to improve psychiatric services in low-income rural areas in developing countries like Uganda. These have included the formulation of national mental health priorities and programs, or undertaking reforms of the existing mental health policies and strategies in line with the overall health reforms. These reforms are intended to improve access and equity for the community to mental health services, through integration of mental health into primary health care.

However, there have been challenges as regards the implementation and practical realities on the ground including insufficiency of resources, minimal funds being allocated to mental health due to the apparent low priority and false impression that mental health is not important, limited public enlightenment about mental health, insufficient training and supervision of Primary Health Care staff to detect and treat mental disorders, and their reluctance to work with people challenged by mental disorders.

WHO (2001), Elsadig(2012) noted that healthcare programs are riddled with inadequate supervision. Mental health professionals should be available to give advice as well as guidance on management and treatment of people with mental disorders. Furthermore the absence adequate mental health worker severely undermines the effectiveness of mental health care delivery at the initial levels. This is worsened by lack of basic psychotropic medicines at primary and secondary care levels thus further inhibiting access to good quality and affordable drugs which is a key objective of primary health care thus increasing the number of readmissions.

Similarly Byaruhanga, et al. (2012) stated that mental health is a severely underdeveloped aspect world over and of health care in Uganda is not any better. Mental health is one of the worst hit with very few hospitals offering cases relating with mental illness which must begin with the right diagnosis (Elsadig, 2012),. For example Uganda has only one psychiatric hospital and approximately 18 psychiatrists in total, with the majority practicing in the capital city of Kampala. In addition, there are about 40 psychiatric clinical officers, with half of them practicing in regional hospitals in rural areas. More still most people are unaware of where they can get medical help for mental health disorders. This is challenged by limited knowledge and lack of recognition of common mental disorders among others due to its frequent presentation of somatic rather than psychological symptoms.

WHO (2005) adds that Inadequate professional resources for mental health care in developing countries are a major reason for the large gap between the prevalence of mental disorder and the provision of services. For example, in Africa there are 0.04 psychiatrists, 0.20 psychiatric nurses and 0.05 psychologists per 100 000 population compared with far more acceptable rates of 9.8, 24.8 and 3.1 respectively in Europe.

Allocation of financial resources for mental health in developing countries is another obstacle to providing mental health care. It has been estimated that the cost per capita of providing a basic package of care for four priority conditions, schizophrenia, bipolar disorder, depression and hazardous alcohol use, would be around \$1.85 in low-income countries and up to \$6.25 in lower-middle-income countries (Chisholm, Lund & Saxena, 2007).

According to Elsadig (2012), whereas there are gaps in the training of PHC workers in the handling mental health issues, a lot of work at the community level needs to be done to improve

access and utilization of mental health care services because the history of mental health patients in most African settings indicate that patients and their relatives first seek care from traditional healers sometimes for several months and by the time they seek medical help, the situation may be beyond what PHC workers can handle given their limited training.

The role of psychiatric hospitals has shifted dramatically. Inpatient programs are now focused on acute stabilization, leaving most treatment to community-based providers. Since the dramatic decline in long term hospitalizations and the reductions in and closures of state-operated hospitals, readmission rates have increased. Explanations for these higher readmission rates have varied. Some authors have proposed that the increase is a result of deinstitutionalization and the failure of community mental health reforms. Others view readmission as a failure of the previous hospital admission, implying that readmission is a result of shortened inpatient stays. Although return to the hospital may not necessarily be an indicator of poor hospital outcome, it is generally seen as an undesirable outcome for a system of care. (Jill, John, Lyons, Renanah, & Kaufman, 2003).

2.4 Patient related factors associated with readmission of psychiatric patients in Jinja regional referral Hospital

According to Asher & Gask, (2010), drug misuse is an important clinical problem associated with a poorer outcome in patients who have had a diagnosis of a mental disorder. A study done by Turkington et al. (2009) in Northern Ireland found that there were higher readmission rates among patients who were persistently misusing substance (56.3%) than in those who had stopped misusing substances (32.9%). The most misused substance in the study was alcohol (33%).

Similarly Ibanda et al, (2001), in a cross sectional descriptive study about the causes of re admission of patients in Butabika Hospital found that 22.2% of the re admissions were due to

alcohol and drug related problems. Furthermore a study about the factors leading to re admission among geriatric patients noted that 50% of patients had a history alcohol and drug misuse. (Jeste et al, 2006).

N J B Kazadi et al 2008) in a cohort study about relapse among patients with schizophrenia found that out of 217 patients nearly half ($N=63$) of patients who relapsed had a history of substance abuse ($p=0.0054$) and cannabis was significantly more abused ($p=0.0014$).

Jianyi Zhang, (2011) in a logistic regression analysis of 10 variables noted that 9 variables including Seclusion during the index admission, accommodation problems and living in areas lacking community services predicted longer stay of patients in hospitals of which a follow-up of 82 patients revealed that (46%) were readmitted. Cox regression analysis showed 9 variables which were related to the risk of readmission of which alcohol intoxication was among the top six.

According to Kigozi (2008), most patients who are discharged from Butabika Hospital get readmitted within a period of 3 months and the trend was attributed to alcohol abuse, family neglect, stigma and poverty.

According to Anna C. Bernardo et al, (2001), in a retrospective panel design history of aggression was found to be significantly related to readmission. Of the patients who were readmitted, 20 (23 percent) had a history of aggression, compared with 12 (11 percent) of the patients who were not readmitted. Although more than one reason for the first readmission was often listed, physicians cited aggression as one of the reasons for readmission.

According to Majid Barekatin et al,(2013)in a cross sectional study about factors associated with relapse in Irana history of behavioral problems was significantly associated with

readmission where 27 (31%) of the readmitted patients had such problems, compared with 20 (18%) of the patients who were not readmitted. Similarly patients with a history of suicide attempts or physical, sexual, or emotional abuse were often readmitted than those who had no history of suicide. It was further noted that Suicide, history of psychological problems in childhood were related factors to readmission This could be so because people who experience emotional and behavioral problems are more predisposed to mental break down.

Bernardo, A. (2001) in a study conducted in Canada to examine patient-related factors that were associated with readmission to a tertiary care psychiatric hospital found out that history of aggression was also significantly related to psychiatric readmission. Of the patients 123 who were readmitted, 20 (23 percent) had a history of aggression, compared with 12 (11 percent) of the patients who were not readmitted. A history of behavioral problems was also significantly associated with readmission: 27 (31 percent) of the patients who were readmitted had such problems, compared with 20 (18 percent) of the patients who were not readmitted. The two groups were not significantly different in terms of history of suicide attempts or physical, sexual, or emotional abuse. It is possible that co-occurring disorders and problems are being ignored or inadequately addressed because staffs are concerned predominantly with the treatment of major psychiatric disorders.

Liv Mellesdal (2010) in a study to examine suicide Risk and Acute Psychiatric Readmissions: A Prospective Cohort Study found out that out of 400,000 inhabitants Haukeland University Hospital in Bergen, Norway Fifty-four percent of the total admissions and 62% of the readmissions in this patient sample were related to suicide risk. Furthermore, patients with more readmissions were more likely to be readmitted for suicide risk. Patients with an index admission related to suicidal ideation or planning had increased risk of readmission because of suicide

risk. Suicide risk was the main or contributing reason for 617 (54%) of the 1,245 index admissions (with disregard of 101 missing values).

The distribution of the covariates for suicidal ideation or plans, deliberate self-harm, and no known suicide risk among the total index admission patients and the 1,156 at risk for readmission who were entered into the Cox analysis differed little, only in decimal values. Of the patients with index admission because of suicide risk, 42% (259 patients) were readmitted at least once during the study period, compared with 43% (226 patients) of those with index admissions not related to suicide risk.

Lars Mehlum, M.D (2010) adds that Patients with more readmissions than others were more likely to be readmitted because of suicide risk. For instance, a subgroup of 93 (8%) patients had five readmissions during the study period, of which 65% were because of suicide risk. The ten most frequently admitted patients had 134 admissions, of which 81% (109 readmissions) were because of suicide risk (53% for suicidal ideation or plans, 16% for suicide attempt, and 12% for non-suicidal self-injurious behavior).

Generally defaulting of medications is a key factor contributing to re admission of mental patients. Ibanda et al, 2001 in a cross sectional descriptive study found that one third of the patients comply with treatment whereas one third of the patients never comply with treatment. In psychiatry the figures may be higher because some patients have no insight and their judgment is impaired.

According to AD Yussuf et al, 2005), in a retrospective study done to identify the Predictors of psychiatric readmissions to the psychiatric unit of a tertiary health facility in a Nigerian city

There was a significant association between medication non-compliance and readmission ($\chi^2=177.5$, $df=1$, $p<0.000$)

According to Kezad et al (2008), in a study about factors associated with relapse among mental patients, using significant multiple logistic regression models for patients who relapsed included poor adherence due to side effects (odds ratio (OR)=3.032; $p=0.023$; 95% confidence interval (CI) 1.168 - 7.870); poor adherence due to lack of insight (OR=5.29; $p<0.0001$; 95% CI 2.28 - 12.20),

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter presents the methodology used to investigate the factors associated with psychiatric readmission of patients to mental health unit in Jinja Regional Hospital. It explains in detail the research design; study population, sample selection, data collection instruments, data quality control mechanisms, the research procedure and data analysis techniques.

3.1 Research design

A case control study design was adopted to help the researcher investigate the factors associated with psychiatric readmission of patients to Mental Health Unit in Jinja Regional Hospital. This design was appropriate for this study because it enabled the researcher to exhaustively determine the prevalence of readmissions and associated factors simultaneously at a given point in time.

3.1.1 Source of data

The primary source of data was care takers of psychiatric patients with history of readmission for cases and care takers of psychiatric patients with no history of readmission for the controls.

3.2 Study site

The study was conducted in Jinja Regional Referral Hospital Mental Health Unit located in the city of Jinja not far from the Source of the Nile, Eastern Uganda. It is the largest hospital in Eastern Uganda, with a bed capacity of 600, although many more patients are admitted, with many sleeping on the floor. It is the Regional Referral Hospital for the districts of Bugiri, Iganga, Jinja, Kaliro, Kamuli, Mayuge, Kayunga and parts of Mukono. The coordinates of Jinja Hospital are: 00 25 52N, 33 12 18E (Latitude:0.4310; Longitude:33.2050). Jinja Hospital is one of the

thirteen (13) Regional Referral Hospitals in Uganda. The hospital has got many health units and Mental Health Unit is one of them. The Mental Health Unit is open every day and receives over 30 to 50 patients on daily basis. The Mental Health Unit has only a bed capacity of 20 however reviews patients' in the Outpatient department.

3.3 Study population

The study population comprised of caretakers of mental patients who had ever been readmitted to Jinja Regional Referral Hospital Mental Health Clinic. This population was chosen because they had the knowledge and were directly involved in the care of these patients after discharge. They are also in position to give logical and accurate information that can generate answers to the questions under the study topic.

3.3 Sample size determination

The sample size was calculated using the Schelssman formulae below, (1982):-

$$n = \frac{(Z\beta + Z\alpha/2) \left[\overline{P}(1-\overline{P}) \right]}{(P_1 - P_2)^2 \left[\frac{r+1}{r} \right]}$$

Where:

- R = the ratio of cases: controls (1:1)
- $(P_1 - P_2)^2$ = difference in proportions
- P_1 = proportion of cases exposed (readmitted patients)
- P_2 = proportion of controls exposed
- $Z\beta$ = 0.84%
- $Z\alpha/2$ = level of statistical significance (1.96)
- OR = Odds Ratio
- \overline{P} = Measure of variability (0.5)

But:

$$P1 = ORP2/P2 (OR-1) +1$$

$$\frac{P1}{P} = OR (P1+P2)$$

$$= 0.5 (0.644+0.475)$$

$$= 0.5595$$

$$n = \frac{2(0.5595)(1-0.5595)(0.84+1.96)^2}{(0.475-0.644)^2}$$

$$n = \frac{2(0.5595)(0.4405)(2.8)}{(0.169)^2}$$

$$n = \frac{1.3802}{0.0286}$$

$$n = 48$$

Therefore, n = 96 since the ratio of cases to controls is 1:1, there will be 48 cases and 48 controls.

The sample size was determined as indicated, however preliminary analysis of the results was not yielding significant differences so the sample size was doubled.

3.4 Sampling procedure

Convenience sampling method was adopted to enroll care takers of mentally ill patients to participate in this study until the desired sample size was achieved. Convenience sampling technique was preferred over probability sampling method because it was not feasible in a hospital setting.

All care takers with mental patients who had ever been readmitted to the mental health unit during the time of data collection were selected to participate in the study. This was done to enable the researcher obtain the required number of respondents for the study.

3.5 Eligibility Criteria

3.5.1 Cases

The cases were care takers of readmitted mental patients in the wards or those who were brought to be readmitted during data collection. Caretakers of patients with history of readmission who were resettled by the Community Mental Nurses of Jinja Regional Referral Hospital were also included until the sample size was obtained.

3.5.1 Controls

Care takers of mental patients with no history of readmission.

3.6 Study Variables

Independent Variables

- Socio-demographic factors (Age, sex, occupation, level of education, marital status).
- Patient related factors (substance abuse, history of suicide attempt, history of physical or sexual abuse).
- Psychosocial factors (stigmatization, stress, social support, lack of community care).
- Health system factors (length of hospital stay, availability of medications, Access to health services, staff attitudes, referral follow up).

Dependent variable

The dependent variable is the readmission of mental patients.

Source of data

Primary data was collected from care takers of patients who had been readmitted for the cases and caretakers of those who had never been or had been admitted once for the controls.

3.7 Data collection methods and Instruments

A structured questionnaire was the instruments used to collect primary data during this study. In this study structured questionnaires was prepared in line with the objectives of this study. A pre-tested questionnaire in English was used to collect data from patients' relatives. It consisted of open and close ended questions to which participants in the study responded. The researcher decided to use the questionnaire because it was easy to administer to respondents, generated data from a large population within a short period of time. Open and close ended questions generate wide views and allow respondents to express themselves.

For the caretakers who are able to read and write they were given self-administered questionnaires, whereas those who cannot read and write they were interviewed using the questionnaire in vernacular. This also gave the researcher a chance to repeat unclear questions as well as probe for clear answers.

The use of the data collection instruments and methods aimed at measuring the degree of consistency in responses thus rendering the instruments reliable.

3.7.1 Pre testing

The questionnaire was pre-tested on five caretakers of readmitted mental patients of Butabika National Mental Referral Hospital Outpatient department to determine reliability and improve clarity of the instruments. This helped the researcher to ensure their appropriateness in gathering the required data which was used to determine the content validity. In addition, the researcher carried out the study with vigor to avoid inaccuracies and bias in data.

To ensure validity of the research instruments, the researcher used the expertise and guidance of the University Supervisor so that the instrument could answer the objectives of the study.

3.8 Data management

The data was managed by the researcher to ensure that confidentiality and security is maintained. It included data editing before leaving the study site to ensure that there are no mistakes or spaces left blank. The black spaces that had been left were noted and the caretakers were once again requested to complete the questionnaire before leaving the study area. Questionnaires were coded for easy checking and avoiding losses. Supervision of research assistants was also done. Raw data was stored in a safe key locker and later stored in Epidata for analysis.

The analyzed data was tabulated to show the statistics and the relationship between the study variables. The relationship between factors associated with readmissions was analyzed using bivariate and multivariate analysis. The strength of the relationship was determined by odds ratio and precision. Data was also be exported to SPSS software to ensure accuracy and reliability.

3.8.1 Reliability

According to Amin, (2005), reliability is the dependability or trustworthiness of research results or the degree to which a measuring instrument consistently measures what it is supposed to measure. To this effect, in this study, reliability of the data collected will be tested using Cronbach's alpha method as provided by SPSS to determine how well all items in the test relate to all other items and to the total test. The results in all items should have high reliabilities with alphas above 0.7 and thus considered highly reliable in eliciting the data that will be required for this study. This method is chosen because it is particularly appropriate for instruments that use likert scale, which will be used in this study so as to be consistent with the case control design in chapter three of this study (Amin, 2005; Kathuri and Palls, 1993).

3.8.2 Validity

To ensure validity of research instruments used in this study questions were discussed with the supervisor for scrutiny, clarity and removal of ambiguity. The expert was requested to evaluate the relevance of each item in the aforesaid instruments. Corrections were made accordingly before piloting/pre-testing the instruments. For the researcher to consider those, items relevant and valid. The ratings from the expert was computed using content valid index =

$$\frac{\text{No of items rated as relevant}}{\text{All items in questionnaire}} \times 100$$

According to the researcher, the index should be greater than 0.7 for the researcher to consider valid.

3.9 Analysis Plan

Descriptive analysis

Numeric data was summarized and presented as mean, standard deviation, median and interquartile (IQR) range. Categorical data was summarized in proportions and percentages presented in tables.

Bivariate analysis

The relationship between independent and dependent variables was determined by logistic regression and the effect was odds ratio. The significance of the relationship will be determined at $\alpha=0.05$ and the relationship with $p<0.05$ will be considered as significant.

Multivariate analysis

Variables with $p < 0.1$ at bivariate analysis were considered for multivariate analysis using logistic regression method to control for cofounders. Odds ratio (OR) was used as the effect measure of association.

3.10 Research Procedure

The topic was submitted to the supervisor for approval before drafting a proposal. After adjustment by the major supervisor assigned to the researcher, a final proposal was developed and submitted. Corrections were made to the satisfaction of the supervisor, approved for submission to the University and granted permission to proceed to the field. A letter of introduction was obtained from the research coordinator and used to introduce the researcher to the respondents of this study. Results were typed, bound and draft report was submitted to supervisor.

3.11 Ethical Considerations

After proposal approval, an introduction letter was obtained from the University Researcher Coordinator to the area of study. Permission to access the respondents was then sought from the management of Jinja Regional Referral Hospital and In-charge Mental Health Unit. The respondents were assured of confidentiality as the research respondents were not required to provide their names or identity during the research process. The researcher encouraged the respondents to be truthful and open minded as the research results were only to be used for academic purposes.

3.12 Limitations of the Study

The participants were caretakers who may not have had or given correct information about the mental patients. The researcher made sure the participants were directly involved in the care of the patient.

The respondents were not easy to convince to give information because of fear to be stigmatized.

The researcher assured the respondents of confidentiality and no names were used on the questionnaire but numbers/codes.

Some respondents were too busy to participate in the study; the researcher endeavored to utilize the time given by respondents to collect the necessary information for the study.

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

4.0 Introduction

This chapter presents results that were analyzed from the data collected from 98 controls and 98 cases using a semi structured questionnaires. The purpose of the study was to identify factors associated with psychiatric readmission. The results are discussed according to the study objectives.

4.1 Socio-Demographic Characteristics

Table 1: Socio-demographic characteristics of patients re-admitted to the Jinja Regional Hospital

Variable	Category	N	Percentage
Sex	Male	41	43.2
	Female	54	55.7
Age	18-25	41	42.7
	26-35	25	26.0
	36-45	15	15.6
	46-55	7	7.3
	>55	8	8.3
Marital status	Single	46	47.9
	Married	31	32.2
	Divorced	17	17.7
	Widowed	2	2.1
Education level	None	8	8.3
	Primary	46	47.4
	Secondary	33	34.0
	Tertiary	9	9.3
Occupation	Civil servant	27	28.1
	Peasant farmer	32	33.3
	Unemployed	34	34.0
	Others	3	3.0

The study included key demographic and social characteristics such as sex, age, marital status, educational level and occupation.

According to the study findings as shown in table 1 there were more females 54 (55.7%) than males. About 46 (47.9%) were single while the least respondents were widowed (2.1%). Majority of the respondents were of primary level education 46 (47.4%) and 34(34.0%) of the respondents were unemployed as shown in table 1.

Table 2: Socio-demographic factors associated with psychiatric readmission in Jinja hospital

Variable	N	OR(95%CI)	p-value
Sex			
Male	41(43.2)	1	
Female	54(55.7)	0.33(0.18-0.60)	<0.001
Age			
18-25	41(42.7)	1	
26-35	25(26.0)	0.82(0.41-1.62)	0.559
36-45	15(15.6)	0.99(0.42-2.34)	0.993
46-55	7(7.3)	0.52(0.17-1.59)	0.253
>55	8(8.3)	0.75(0.23-2.44)	0.629
Marital status			
Single	46(47.9)	1	
Married	31(32.2)	0.74(0.38-1.45)	0.382
Divorced	17(17.7)	0.4(0.18-0.88)	0.022
Widowed	2(2.1)	1.03(0.22-4.85)	0.975
Education level			
None	8(8.3)	1	
Primary	46(47.4)	0.62(0.21-1.82)	0.383
Secondary	33(34.0)	1.27(0.43-3.75)	0.662
Tertiary	9(9.3)	2.13(0.58-7.73)	0.252
Occupation			
Civil servant	27(28.1)		
Peasant farmer	32(33.3)	1	
Unemployed	34(34.0)	0.53(0.25-1.14)	0.106
Others	3(3.0)	0.99(0.49-2.03)	0.998

Among the socio demographic characteristics sex was significantly associated with readmission where females were less likely to be readmitted than males (OR=0.33, CI=0.18-0.60, p<0.001). The rest of the socio demographic factors were not significantly associated with readmission of psychiatric patients in Jinja Regional Hospital as indicated in table 2

4.2 Psychosocial factors associated with psychiatric readmission

Table 3: Psychosocial factors associated with psychiatric readmission in Jinja regional hospital

Variable	N	OR(95%CI)	p-value
Recent stress			
Yes	128(66.7)	1	
No	64(33.3)	1.46(0.79-2.66)	0.222
Social support			
Yes	134(69.8)	1	
No	58(30.2)	1.10(0.59-2.04)	0.753
Community stigma			
Yes	67(34.9)	1	
No	125(65.1)	0.96(0.53-1.73)	0.880
Community reaction			
Hostile	11(5.7)	1	
Discriminative	46(24.0)	0.62(0.16-2.42)	0.495
Supportive	113(58.9)	0.52(0.15-1.89)	0.322
Abusive	17(8.9)	1.05(0.22-5.09)	0.954
Others	5(2.6)	-	-
Family neglect			
Yes	53(27.6)	1	
No	139(72.4)	0.86(0.45-1.61)	0.628
History of abuse			
Yes	82(42.7)	1	
No	110(57.3)	1.09(0.61-1.93)	0.770
Sexual abuse			
Yes	65(33.9)	1	
No	127(66.1)	1.52(0.83-2.78)	0.171

None of the psychosocial factors studied had a significant relationship with psychiatric readmission of patients in Jinja Regional Hospital at bivariate analysis as indicated in table 3.

4.3 Health facility factors associated with psychiatric readmission

Table 4: Health facility factors associated with psychiatric readmission in Jinja regional hospital

Variable	N	OR(95%CI)	p-value
Availability of drugs			
Yes	106(55.2)	1	
No	86(44.8)	9.4(4.82-18.20)	<0.001
Hospital stay			
Very brief stay	43(22.4)	1	
Brief stay	86(44.8)	2.02(0.96-4.25)	0.063
Cannot remember	37(19.3)	0.95(0.39-2.31)	0.905
Long stay	21(10.9)	1.53(0.54-4.36)	0.428
Very long stay	5(2.6)	0.35(0.04-3.37)	0.362
Distance			
≤5Km	51(26.6)	1	
>5Km	141(73.4)	0.49(0.26-0.95)	0.035
Attitudes of health workers			
Friendly	180(93.8)	1	
Rude	12(6.2)	0.18(0.04-0.86)	0.031
Follow-up by health workers			
Yes	20(10.4)	1	
No	172(89.6)	4.60(1.48-14.32)	0.008

Patients of care takers who said that drugs were not available in the healthy facility were 9.4 times more likely to be readmitted than patients whose care takers said drugs were always available in the hospital (OR=9.4, CI=4.82-18.2, P<0.001).

Patients who resided beyond 5km were less likely to be readmitted than patients who resided within 5km reach to the hospital (OR=0.49, CI=0.26-0.95, P=0.035).

Patients whose care takers said health workers were rude were less likely to be readmitted than patients of care takers who said healthy workers were friendly (OR=0.18, CI=0.04-0.86, P=0.013).

Patients whose care takers said health workers were not following them up were 5times more likely to be readmitted than patients whose caretakers said that health workers followed them up (OR=4.6, CI=1.48-14.32, P<0.008). All these variables are summarized and presented in table 4.

4.4 Patient related factors associated with readmission of psychiatric patients

Table 5: Patient related factors associated with psychiatric readmission in Jinja regional hospital

Variable	N	OR(95%CI)	p-value
History of aggression			
Yes	99(51.6)	1	
No	93(48.4)	1.88(1.06-3.33)	0.031
History of suicide			
Yes	59(30.7)	1	
No	133(69.3)	2.34(1.24-4.41)	0.009
History of drug abuse			
Yes	73(38.0)	1	
No	119(62.0)	0.35(0.19-0.65)	0.001
Adherence			
Yes	118(61.5)	1	
No	74(38.5)	0.92(0.51-1.64)	0.767

Patients who had no history of aggression were 2 times more likely to be readmitted than patients who had a history of aggression (OR=1.88, CI=1.01-3.33, P=0.031). Patients who had no history of suicide attempts were 2 times more likely to be readmitted than those who had history of suicidal tendencies (OR=2.34, CI=1.24-4.41, P=0.009). Patients who did not have a history of drug abuse were less likely to be readmitted than those who had a history of drug abuse (OR=0.35, CI=0.19-0.65, P=0.001) as indicated in table 5.

Table 6: Factors associated with psychiatric readmission in Jinja regional hospital at multivariate analysis

Variable	OR(95%CI)	p-value
History of drug abuse		
Yes	1	
No	0.41(0.20-0.84)	0.015
Availability of drugs		
Yes	1	
No	10.17(4.87-21.24)	<0.001
History of aggression		
Yes	1	
No	2.46(1.21-5.01)	0.013
History of suicide		
Yes	1	
No	3.19(1.44-7.07)	0.004

All the variables at bivariate analysis were carried to multivariate analysis where they were assessed for interaction and confounding. The factors that had little or no effect on readmission in the presence of other variables were thrown out of the model and the factors that remained in the model were associated with readmission as indicated in table 6.

Patients who had a history of drug abuse, unavailability of drugs at health facility no history of aggression and no history of suicide were significantly associated with psychiatric readmission.

CHAPTER FIVE

DISCUSSION OF RESULTS

5.1 Introduction

In this chapter the findings of this study are discussed in comparison with literature of previous scholars and implications stated.

5.2 Socio demographic characteristics

Among the socio demographic characteristics studied sex turned out to be associated with readmission where more females were readmitted than males. This is probably attributed to the healthy seeking behaviors among the different sexes. Females tend to seek health care than men so it gets depicted that females are often readmitted than men. On the contrary Barekatin et al, (2013) in a study conducted in Isfahan university about the factors associated with psychiatric readmissions found out that there was a significant statistical difference between males and females where more males were readmitted (CI=33.2-34.4) than females (CI=31.9-33.1), $P < 0.002$. This is because the sample size was big enough to yield comparative results.

According to the findings of the study majority of the respondents were aged between 18-25 years though there was no significant relationship between age of the respondents and readmission. On the contrary Palazzo et al (2009) and Yussuf A.D. et al (2009, found a significant relationship between age and readmission where younger (21-40 years) patients were more often readmitted ($F = 18.1, p < 0.0001$). This is probably linked to the fact that young people tend to abuse drugs due to peer influence, love for adventure predisposing them to several episodes of break down hence the multiple admissions. Also age did not influence readmission

probably because of the difference in the categorization of age in this study as compared to Palazzo et al, (2009), and Yusuf A.D et al (2009).

This study did not find any significant relationship between level of education of patients and psychiatric readmission. However, Alastain Mason et al, (2000), noted that education level of patients is a good predictor of psychiatric readmission.

5.3 Psychosocial factors contributing to readmission of psychiatric patients

Social support, stress and stigmatization did not influence readmission in this study none of them influenced readmission. This is probably because the caretakers feared to reveal the true status of social support their patients received from them resulting in no significant relationship. This concurs with Nkangala (2011) in the study conducted in Malawi on risk factors for readmission of patients with mental disorders who found out that 89.7% of the cases were more likely to have been supported by their families. On the type of support 21.9% were emotionally supported, 56.8% practically supported, 37.7% financially supported and 29.5% assisted with getting drugs at the clinic.

On the contrary a study conducted in Nigeria (Mwaba and Molamu) found that 40% of the readmitted patients lacked social support. This is because of the widespread cultural beliefs that mental illness is caused by witchcraft so the patients are considered as an embarrassment to the family. The increased social burden associated with caring for the mentally ill could have also lead to neglect of the patient. Jianyi Zhang et al (2014) also in a retrospective study carried out in New Zeland found that of the 76 patients, 46% of patients who were readmitted lacked social support and it predicated a prolonged length of patient's staff in hospital.

Though the study revealed no significant association between stress and readmission Chabungbam et al (2007) and Brown (2005), found that patients who experience a high number of life stressors were more often readmitted. Also Kezadi et al (2008) while studying factors associated with reoccurrence of psychotic features among mental patients found significant relationship between stressful life events and readmissions ($P < 0.0001$)

Ndhlovu(2005), found out that stigma and discrimination among family members significantly influenced readmission of psychiatric patients.

Though not found to have a significant relationship with readmission in the study, Ndhlovu (2010) noted that stigma and discrimination among family members significantly influenced readmission of patients to psychiatric hospitals. This is in line with Marom et al, (2005) who noted that patients from high criticism households had significantly higher number of psychiatric readmissions. This is not surprising because stigmatization and discrimination of mental patients causes them stress which affects the neurotransmitters hence triggering the reoccurrence of symptoms. Sullivan G et al(2010) in their study associated readmission with rejection by the families.

This implies that the nurses and the entire psychiatric team together with the Ministry of health should continuously equip the care takers of mental patients and community with knowledge on the importance of offering support to the patients as it reduces on the unnecessarily readmission which strain the available hospital resources.

5.4 Health facility factors contributing to readmission of psychiatric patients

Lack of drugs in the hospital was significantly associated with readmissions because patients who did not get drugs were more likely to be readmitted. This concurs with Byaruhanga E (2008) in pioneering work in mental health outreaches in rural, southwestern Uganda found out that medication supply by the government health units/hospitals is inadequate and often unreliable and patients do not get the prescribed treatment. Patients and care givers appreciate the importance of medication, and therefore the absence of medication in health units is a source of frustration creating a danger for patients who seek treatment, but who must return home without having received adequate medication. These patients end up relapsing hence being readmitted.

The findings of this study revealed that patients' length of stay in the hospital did not significantly influence readmission. This could be because the Jinja Regional mental health clinic has limited space to handle long stay patients yet it receives patients from the four neighboring districts (Kamuli, Iganga, Mayuge and Bugiri districts). This is contrary to Yusuf AD (2008) who found out that there was a significant relationship between patients' length of stay and readmission. ($P < 0.01$). Patients who were discharged in a period of two weeks from hospital were found to be readmitted more often. This was expected because mental illness is a chronic illness that requires life time medication.

This implies that most patients who get un due discharges are readmitted shortly which compromises on the quality of life, leads to family neglect of the patient and strains hospital resources.

The finding further revealed that mental patients who stayed near the health facility were more likely to be readmitted than those who stayed far away. However, Lin (2005), found out that distance significantly influence readmission as patients who lived more than 12km from the mental health unit were more often readmitted ($p < 0.001$). This is because the mental patients are probably reluctant due to the close proximity to the hospital. Also there being no steady supply of drugs the patients tend to think they will keep checking yet continue to miss taking drugs their medication. Whereas those in far reach are keen about relapsing as they put in mind the cost of transporting a relapsed patient to the hospital. They attempt to purchase drugs from pharmacies in easy reach and maintain compliance to avoid readmission.

Although in this study distance was not significant, it still poses a barrier to outpatient follow-up for mental patients after a discharge. It limits patients' ability to access medical care quickly in the event of a recurrent acute event.

5.5 Patient related factors contributing to readmission of psychiatric patients

History of suicide was found to have a significant relationship with readmission where patients who had no history of suicide were two times more likely to be readmitted than those who had a history of suicide. This could probably be known suicidal patients are closely monitored as compared to those without suicidal risks or that these patients relapse due to other reasons such as poor drug compliance, lack of social support not necessarily suicidal attempts. On the contrary Mellesdal et al (2010) in a case controlled study found that suicide was the main contributing reason (54%) to readmission ($p < 0.001$). Further still Jianyi, Zhang et al (2014) noted that 18% of readmitted patients had a suicidal risk.

This is probably because their sample population was bigger or because of the difference in data collection methods.

According to the research findings, history of aggression was found to significantly influence readmissions where patients with no history of aggression were more likely to be readmitted than those without a history of aggressive behaviors. Aggressive patients tend to act out their emotions and are easily identified which enables them to get quick help unlike patients who are not aggressive who will not be detected early enough before it necessitates readmission. On the contrary Anna Bernado (2001) who in a retrospective study found that aggression was associated with readmission. Jainay Zhang et al (2014) concurred with the study as he found out that 11% of readmitted cases followed incidents of physical aggression towards human or properties. Luis Eduardo et al (2014) noted that diseases that cause patients to present significant psychotic symptoms, such as schizophrenia and affective disorders, and a history of aggression or symptoms at discharge have been associated with greater rates of readmission.

This was expected as society cannot cope with an aggressive mental patient coped with the negative attitude, stigma and violence which is directed towards the mentally sick.

Care providers and clinicians should comprehensively assess, monitor and observe for other factors that cause readmission among mental patients. Care takers should also collaborate with health care providers to help monitor patients even when they have no history of suicide, are not aggressive to break pattern readmission.

Drug abuse had a significant relationship with readmission according to the study findings. This was expected because drugs are readily available and affordable. This is in line with Turkington et al (2001) who found that readmission rates were persistently high (56.3%) among patients

who abused drugs than those who did not abuse the drugs (32.9%). Similarly Kigozi (2008) noted that patients who were discharged from Butabika Hospital got to be readmitted within a period of three months due to Alcohol Abuse. Jiany Zhang (2014) et al in a comprehensive descriptive study in a sample population of 217 patients also found out that 59% had a drug or alcohol related problem and 30% were directly related to drug intoxication or withdrawal ($p=0.041$) and it had an association with readmission.

On the contrary Kazadi et al (2008) noted that of 217 respondents nearly two thirds had a history of substance abuse though this did not influence readmission ($p=0.0054$). This is probably because the respondents had successfully recovered from substance abuse.

Despite the findings, Health Workers must emphasize that substance abuse among mental patients leads to increased hostility, poor compliance and reoccurrence of the symptoms hence the need for abstinence.

Though not found to be associated with readmission in this study, other findings reveal that poor adherence to medication influences the readmission of patients. According to Cynthia A. (2008) in a study about predictor of readmission among adolescents in med card revealed that medication non compliance significantly influenced readmission ($OR=1.63$, $p<0.05$). This concurs with Yusuf et al (2008) who studied predictors of psychiatric readmission and found a significant relationship between medication noncompliance and readmission ($p<0.0001$). Jiany Zhang et al (2014) also noted that medication noncompliance had a significant relationship with readmission ($p<0.10$).

Similarly, Kazadi et al (2008) found out that out of 217 participants in a study about factors associated with relapse 139 did not adhere to treatment of which 80.4% were readmitted (OR=5.29, CI=2.28-12.20, $p<0.0001$).

Nkangala E. et al (2011) noted that though some patients have insight into their mental status only 53% of the cases and 83.1% of the controls out of 146 mental patients were compliant with medication.

This could be attributed to the prolonged treatment regimens, adverse drug side effects, non-affordability of the drugs, and unawareness of the benefit of treatment, unfriendly attitudes of the hospital staff, social and cultural beliefs, as mental illness is a chronic illness that requires continuous medication. Discontinuation or poor compliance of treatment leads to reoccurrence of symptoms hence readmission.

The findings imply that there is need for continuous drug supply, monitoring and health education to the patients about the implications of non-adherence. Caretakers should also be encouraged to offer continued support to the patients to enable them comply with the medications.

5.6 Methodological issues

The methodological difference between this study and other previous studies precluded definitive comparisons. For example while other studies adopted operational definitions of readmission to be three or more times of admission, this study adopted a definition of two or more times of admission.

Information bias, probably occurred where research assistants did not ask question correctly to give clear answers making some factors not to be significant and also information was generated from next of kins could not have measured accurately what this study intended to measure.

Recall bias could have occurred where the cases could have been more associated with the risk factors than the controls who were more likely not to be associated with the risk factors. This probably resulted in over estimation of the effect measure (strength of association).

Selection bias could have occurred because the controls and cases were selected from the same hospital. In this case, the cases and controls may not be comparable in regard to some factors. The cases and controls may not be comparable in regard to other factors. This could have resulted in either under or over estimation of the effect measure.

CHAPTER 6

CONCLUSION AND RECOMMENDATIONS

6.1 General Conclusion

According to this study several factors have been noted to be associated with readmission of mental patients to hospital. No socio-demographic factor was found to be associated with readmission of psychiatric patients. History of drug abuse, no aggression and no suicide were found to be associated with readmission among psychiatric patients. Lack of drug supply in health facility was the only health facility factor found to be associated with readmission of psychiatric patients. None of the psychological factors was found to be significantly associated with psychiatric readmission of patient.

6.2 Recommendations for Practice and Future Research

Basing on the findings of this study we recommend that:

The Government of Uganda through Ministry of Health should prioritize mental health services so as to improve on the quality of life of the patients and reduce the an unnecessary readmissions. This can be done by increasing funding to the mental health services in the country to ensure adequate supply of drugs to the patients.

The ministry of Health and Hospital administration should increase public and community awareness about the dangers of substance abuse so as to reduce on the number of patients being readmitted due to substance abuse.

Psycho education should be provided to patients to equip them with better coping strategies instead of attempting suicide and resorting to becoming aggressive.

The hospital should be encouraged to work with families to ensure continuous support as it was observed that those that were not supported were more likely to be cases of readmission.

The hospital should put in place or emphasize on measures to improve compliance through psycho education and active follow up in homes as we have seen that the cases are more likely to stop medication and encourage use of depot medication in order to avoid noncompliance.

For future research involve other districts and health centers. A prospective cohort study can also be done to recruit patients on discharge and follow them up.

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APPENDIX I: CONSENT FORM

I have been clearly explained to the purpose, objectives and the benefits of the study concerning factors associated with readmission of mental patients in Jinja Regional Referral Hospital.

I have been assured of confidentiality, understood and I therefore willingly consent to participate in the study.

Signature

Date

.....

.....

Respondent

I have clearly explained the purpose, objectives and the benefits of the study concerning factors associated with readmission of mental patients in Jinja Regional Referral Hospital to the respondents for an informed consent.

Signature

Date

.....

.....

Investigator

APPENDIX II: RESEARCH QUESTIONNAIRE

I am Mukazungu Joan, a student at International Health Science University pursuing a Bachelor of Science in Nursing. This questionnaire is to help the researcher find out the factors associated with readmission of mental patients in Jinja Regional Referral Hospital. All information given will remain confidential and used for only this study.

Instructions:

Please answer by ticking the appropriate answers and filling in the blank spaces where necessary.

Section A: Demographic Information

1. Sex

a).Male

b).Female

2. Age

a).18-25 years

b).26-35 years

c) 36-45 years

d) 46-55 years

e). Above 55 years

3. Marital status

a).Single

b).Married/Cohabiting

c).Divorced/separated

d).Widowed

4. Highest level of education

a). None

b). Primary

c). Secondary

d). Tertiary

5. Occupation/ employment

a). Civil Servant/ Self Employed

b). Peasant farmer

c). Unemployed

d). Others specify.....

Section B: Health facility factors associated with readmission of psychiatric patients

6. Are you always supplied with drugs whenever you return to stock drugs?

a).Yes

b).No

7. How long did your patient stay at the hospital the last time he/she was admitted

a).Very brief stay

b).Brief stay

c). I cannot remember

d). Long stay

e).Very long stay

8. How far is the hospital from your home?

a).Less than 5km

b).More than 5km

9. How would you rate the attitudes of health workers of this hospital

a). Friendly

b). Rude

10. Is your patient followed by health workers for review after discharge?

a).Yes

b).No

Section C: Psychosocial factors associated with readmission of psychiatric patients

11. Has your patient had a stressful moment in recent times?

a). Yes

b). No

12. Does your patient feel that he/she has adequate social support at home and in the community?

a). Yes

b). No

13. Does community isolate or stigmatize your patients because of his/her illness?

a). Yes

b). No

14. How does the community react toward your mentally ill patient?

a). Hostile/ aggressive

b). Discriminative

c). Supportive

d). Abusive

e). Others specify

15. Do the family members neglect this patient?

a). Yes

b). No

16. Has the patient been abused in any way?

a).Yes

b).No

Section D: Patient related factors associated with readmission of mental patients

17. Does your patient ever had a history of the following:-

a). Aggression

i).Yes

ii).No

b). Suicide

i).Yes

ii).No

c). Physical/Sexual abuse

i).Yes

ii).No

d). Drug/Alcohol Abuse

i).Yes

ii).No

Thank you for participating!

APPENDIX III: INTRODUCTORY LETTER



Office of the Dean, School of Nursing

Kampala, On the 20th day of August, 2014

TO WHOM IT MAY CONCERN

Re: Assistance for Research

Greetings from International Health Sciences University.

This is to introduce to you **Mukazungu Joan Reg. No. 2011-BNS-TU-041**, who is a student of this University. As part of the requirements for the award of a Bachelor of Nursing Sciences of this University, the student is required to carry out field research for the submission of a Research Project.

Joan would like to carry out research on issues related to: **Factors associated with psychiatric re-admission of patients to Mental Health Unit in Jinja Regional Hospital**

I therefore request you to render her such assistance as may be necessary for her research.

I, and indeed the entire University are thanking you in anticipation for the assistance you will render to her.

Sincerely Yours,

International Health Sciences University
20 AUG 2014
SCHOOL OF NURSING
P.O. Box 7782, Kampala, UG
For **MRS. WAFULA ELIZABETH**

DEAN

International Health Sciences University
P.O. Box 7782 Kampala | Uganda | East Africa
Tel: (+256) 0312 307 402 | E-mail: vc@ihsu.ac.ug | web: www.ihsu.ac.ug

APPENDIX IV: CORRESPONDENCE LETTER



JINJA REGIONAL
REFERRAL HOSPITAL
P.O. BOX 43
JINJA

August 27, 2014

The in charge
Mental Health Clinic
Jinja Regional Referral Hospital

Re: MUKAZUNGU JOAN

This is to introduce to you the above named student from International Health Sciences University. She has come to Jinja Regional Referral Hospital to do a research on "*Factors Associated with Psychiatric Readmission of Patients to Mental Health Unit in Jinja Regional referral Hospital*".

Kindly assist her.

Dr. Ssenyonjo Godfrey.

Dr. Senyonjo Godfrey
FOR: CHAIRMAN RESEARCH COMMITTEE

