ASSESSMENT OF THE UTILIZATION OF CONSULTATION LIAISON PSYCHIATRY SERVICES AT THE KENYATTA NATIONAL HOSPITAL

By

WAWA SARAH K

H58/80877/2015

A THESIS SUBMITTED IN PARTIAL FULLFILMENT OF THE DEGREE OF MASTERS OF MEDICINE IN PSYCHIATRY

OCTOBER 2018

DECLARATION

I declare that this work is original and has been authored by me. It has not been submitted for an academic award or qualification in any institution of higher learning. Appropriate referencing has been made when citation of other people's work has been done.

Author

Wawa Sarah K

Signature _____

Date_____

APPROVAL

This work has been brought together and reviewed under our supervision as University of Nairobi, Department of Psychiatry lecturers.

1. Dr. Sobbie Mulindi

Senior Lecturer

Department of Psychiatry,

University of Nairobi

Signature _____

Date _____

2. Dr Lincoln Khasakhala

Senior Lecturer

Department of Psychiatry,

University of Nairobi

Signature _____

Date _____

LIST OF ABBREVIATIONS

ADHD	Attention Deficit and Hyperactivity Disorder
ASPD	Antisocial Personality Disorder
BMD	Bipolar Mood Disorder
CAD	Coronary Artery Disease
CHS	College of Health Sciences
CLP	Consultation Liaison Psychiatry
COPD	Chronic Obstructive Pulmonary Disease
CVD	Cardio-vascular Disease
DM	Diabetes Mellitus
DSM IV	Diagnostic and Statistical manual of Mental Disorders, 4th Edition
DSM-5	Diagnostic and Statistical manual of Mental Disorders, 5th Edition
ENT	Ear, Nose and Throat
GAD	Generalized Anxiety Disorder
HIV/AIDS	Human Immunodeficiency Virus/ Acquired Immunodeficiency Syndrome
ICD 10	International Statistical Classification of Diseases and Related Health Problems, 10th Revision
ICU	Intensive Care Unit
KNH	Kenyatta National Hospital
MDD	Major Depressive Disorder
MDE	Major Depressive Episode
mhGAP	Mental Health Gap Action Plan

MICA 4	Mental Illness: Clinician's attitude Scale
MINI 6.0	Mini International Neuropsychiatric Interview, version 6
OCD	Obsessive Compulsive Disorder
PID	Prolapsed Intervertebral Disc
PTSD	Post Traumatic Stress Disorder
RTA	Road Traffic Accidents
SERC	Scientific, Ethics Review Committee
SCID-P	Structured Clinical Interview for DSM III-R Patients
TB	Tuberculosis
UoN	University of Nairobi
WHO	World Health Organization

OPERATIONAL TERMS

Consultation	The process of meeting an expert in a given field in order to seek advice
Liaison	A cooperation that facilitates a close working relationship between two people, or in this case, medical departments
Referral rate	In this context, this compares the number of patients seen at the various CLP services available in a particular hospital to the total number of patients seen at the hospital during a defined period of time.
Resident/Registrar	Postgraduate student at the school of medicine's different departments

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABSTRACT

Despite mental illnesses contributing significantly to the global burden of disease, they are poorly understood by non-mental health care providers, leading to a huge treatment gap of up to 75% as reported by the World Health Organization. Consultation Liaison Psychiatry (CLP) focuses on inter-disciplinary cooperation between psychiatrists and other practitioners in hospital settings aimed at reducing mortality and morbidity, cost of care and length of hospital stay. This study aimed to document the utilization patterns and efficiency of CLP at Kenyatta National Hospital (KNH), and was a cross-sectional study of patients referred to the liaison clinic at KNH and postgraduate students at the University of Nairobi's (UoN) College of Health Sciences. Data was collected by a researcher developed socio-demographic questionnaire, Mini International Neuropsychiatric Interview, version 6 (MINI 6.0) and the Mental Illness: Clinician's Attitude Scale, version 4 (MICA 4) and was analyzed using the Statistical Package for Social Sciences then presented in tables and figures. This study found poor utilization of CLP services, with a referral rate of 0.42% and 0.2% in 2016 and 2017 respectively. The department of internal medicine had the most referrals (33.96%), with the commonest reason for referral being low mood (14.5%). The commonest primary condition was trauma (19%) and a diagnosis of depression was made in 24.5% of the patients. Overall, the resident doctors had a stigmatizing attitude, with a mean MICA score of 52.05. Having internship rotations in psychiatry was found to be significant ($p<0.005$) in ameliorating this attitude. Recommendations to adopt a more efficient (Computerized) system and a concise standardized diagnostic tool by the CLP department were made. Regular mental health trainings for residents by the department of psychiatry should be done. Psychiatry should be incorporated into internship training by the Ministry of Health. Further research into stigma against mental illness among healthcare workers was recommended.

CHAPTER ONE: INTRODUCTION AND BACKGROUND

1.1 Introduction

Mental illness is a global health burden that remains poorly understood by non-mental health care providers and therefore remains underdiagnosed and undertreated. According to the WHO Mental Health Gap Action plan (mhGAP, 2010); up to 75% of patients in low income countries with mental illnesses do not have access to psychiatric services. Physical and mental disorders commonly co-occur; unfortunately psychiatric disorders are often misunderstood, misdiagnosed and/or under diagnosed among patients attending general health facilities. The relationship between physical and mental illnesses has been recognized and documented as reciprocal. Mentally ill individuals are more prone to physical illness and verse versa as documented by Ndetei et al., (2009); physically ill patients have higher odds to have comorbid mental disorders. Therefore there is need to scale up psychiatric services in general health care facilities so as to reduce mental health treatment gap (mhGAP, 2010)

Mental disorders have been reported to be more common within the medical/ hospital setting as opposed to the community at large, and the prevalence has been recorded in developed countries to be as high as 46%; which has been indicated in various studies. (Rothenhäusler 2006; King et al., 2008). In East African countries, Rukundo, Musisi and Nakasujja (2013) reported a 48% prevalence of psychiatric morbidity among the elderly patients on the non-psychiatric wards of Mulago hospital. A study conducted at the Kenyatta National Referral and Teaching hospital in Nairobi County reported a prevalence of mental disorders of 22% (Kigamwa, 1991). This situation in a general

health facility occurs because the attending physicians usually have a bias to physical illness and therefore have little time for the psychological assessment and management of co-morbid psychiatric disorders.

Consultation- Liaison Psychiatry (CLP), which is a sub-specialty that focuses on the practice of psychiatry in concert with other medical health professionals within a hospital setting. This multi-disciplinary approach can reduce the mental health treatment gaps, as proposed by the WHO (mhGAP, 2010). Consultation- Liaison Psychiatry (CLP) carries two words that have been compounded as:

I. Consultation, which is the process of meeting an expert in a given field in order to seek advice; and
II. Liaison, which refers to a cooperation that facilitates a close working relationship between two people, or in this case, medical departments.

Consultation- Liaison Psychiatry (CLP) sometimes simply is referred to as Liaison Psychiatry or Consultative Psychiatry. It has been defined as an area of clinical psychiatry that involves diagnostic, therapeutic, teaching and research activities of psychiatrists in the non-psychiatric parts of a general hospital (Munjal & Ahuja, 2003).

1.2 Background

Engel (1977) introduced the bio-psycho-social model of disease etiology, and fronted that biological, psychological and social spectrums are interconnected, and that psychosocial factors greatly impact the progression of, and recuperation from illness and disease. The Alma-Ata conference on primary health care in 1978 reinforced the view that health is a state of complete physical, mental and social well-being, and that it is a fundamental

human right, and that a multi-disciplinary approach is required to achieve primary health care. Historically, the first CLP service was opened in 1902 in Albany Hospital, New York, in the United States of America (Gomez, 1987), and was developed mainly in teaching hospitals. In the 1970s, it became a recognized psychiatric profession, (Pasnau, 1982) and is currently acknowledged as a sub-specialty of psychiatry in various parts of the world. Consultation- Liaison Psychiatry is an essential part of medical student training in Europe and America (Lipowski, 1974), as is the case with postgraduate students in Kenya.

The functions of CLP are provision of psychiatric consultations, liaison, education, administration and research. The consultative function involves giving an opinion or advice as requested by other medical or surgical departments on psychiatric conditions, with the liaison function serving as a link in the interdisciplinary management of patients. Education in CLP involves the patient, family, friends, requesting physician and nursing staff, and focuses on psycho-education on the condition, its management options, and possible adverse effects of therapeutic intervention. The administrative arm of CLP encompasses the evaluation of acutely suicidal or homicidal patients, the ability of patients to give consent for treatment, advice on need for emergency involuntary treatment or institutionalization, and risk assessment of psychiatric patients. The role of research role CLP comprises the collection of evidence on the significance of the collaborative/ interdisciplinary patient care model. (Leigh & Stretzler, 2015)

Psychiatric disorders have been reported to be higher among patients with Human

Immunodeficiency Virus/ Acquired Immunodeficiency Syndrome (HIV/AIDS), Tuberculosis (TB), Cardio-vascular Disease (CVD), Cancers, Gynecological and Genito-urinary symptoms, and this was alluded to the chronicity of the conditions. (Ndetei et al., 2009) Similarly, patient with mental disorders are more prone to physical illnesses. Severe mental illnesses such as Schizophrenia, Bipolar Mood Disorder (BMD), Major Depressive Disorder (MDD), schizoaffective disorder have increased mortality, and about 60% of this is attributable to physical illness (De Hert et al, 2011). Physical illness linked to severe mental illnesses include Obesity, Metabolic Syndrome, Diabetes Mellitus (DM), CVD, Coronary Artery Disease (CAD), Viral diseases such as HIV/AIDS, Hepatitis, acute and chronic respiratory diseases, Musculoskeletal diseases, pregnancy complications and cancer. This has been correlated to the short and long term adverse effects medications the patients with mental illness take, genetic predisposition, increased exposure to disease agents to due poor mental states and circumstances such as prolonged stay in overcrowded and poorly ventilated in-patient institutions, poor access to medical care and lifestyle factors such as diet and lack of exercise, among other factors. (De Hert et al., 2011)

Patients who are admitted to general health facilities for treatment of non-psychiatric illnesses have often manifested various significant psychiatric symptoms that require the attention of a mental health practitioner. The frequent psychiatric diagnoses among the in-patients in general hospitals include mood disorders such as depression, anxiety disorders, somatoform disorders and substance abuse, and are often missed by the clinicians as patients may present with somatic complaints. Patients with chronic medical

conditions are more likely to have co-morbid psychiatric illnesses. (Lipowski, 1967; Ansseau et al., 2004; Kagee, 2008; Rothenhäusler, 2006).

Among admitted patients, the implications of inadequately treated psychiatric illnesses include increased morbidity and medical complications; lengthened duration of stay in hospital, inefficient use of medical facilities and higher cost of care. (Gomez, 1987; Rukundo et al., 2013). Sockalingam et al. (2016) reported that patients who have a longer time before psychiatric referral had a significantly longer length of stay in hospital, even after medical co-morbidity had been considered and treated. Early diagnosis and treatment of in-patients with psychiatric symptoms mostly falls on non-mental health medical personnel, who are expected to recognize the symptoms and ask for the opinion of the relevant practitioners within their hospitals. Ndetei et al. (2009) in a study across 10 different level health facilities in Kenya established that 42% of the patients had symptoms of mild and severe depression, while psychosis was either frank or queried in 3.1% of the study population. Of the patients, only 4.1% had a diagnosis of a severe psychiatric disorder identified (Ndetei et al., 2009). The study concluded that most psychiatric illnesses in general medical facilities are undiagnosed, and as a result, remain untreated or mismanaged.

The Kenyatta National Hospital (KNH) is one of the two national referral hospitals, and is the largest hospital in the Republic of Kenya. The hospital was established in 1901, and currently has an 1800 person bed capacity, fifty in-patient wards, 22 out-patient clinics, 24 Operating theaters and an Accident and Emergency Department. It covers an area of

45.7 hectares and within it houses numerous facilities, including the University of Nairobi's (UoN) College of Health Sciences (CHS).

The department of Mental Health at KNH was established in 1990 and is located in the old wing of the hospital. The unit is managed by a team of consultant psychiatrists, psychologists, and Mental Health nurses. University of Nairobi's CHS postgraduate students in the departments of Psychiatry, Psychology, Paediatrics and Internal Medicine rotated through this unit in fulfillment of their course work requirements. The unit has two departments- Child /Adolescent, and Liaison, and runs four clinics weekly that include: Child Clinic, Adolescent Clinic, Psychiatry Clinic and a Psychotherapy Clinic. Students from the Department of Psychiatry rotate for 3 month in each of the two departments, while those from Internal Medicine and Paediatrics rotate for two months in the Child/ Adolescent and Liaison divisions respectively.

The Liaison division of the unit receives internal (from the KNH accident and emergency department, in-patient wards and out-patient clinics), and external referrals. These come in form of consultation requests or direct bookings to the scheduled clinics. The consultations received are from the hospital's in-patient facilities, and are made on a standard consultation form provided by the hospital. This request captures the patient's demographic information, In-Patient hospital number and ward, reason for the consultation, diagnosis and the requesting doctor's name. The requests are received at the unit's front desk and the information recorded in a book. At the beginning of each day, he registrar from Internal Medicine or Psychiatry who is on call collects the consultation

requests from the reception desk and makes a visit to the various wards to see the patients. A detailed psychiatric history is taken, examination done- both physical and mental, any investigations are requested, appropriate therapy initiated. Documentation on the findings and a management plan is made on the patient's file. A follow up review of the patients is done in concert with the consultant on call within the week, and any additional treatment is effected. If still admitted, the patients then undergo periodic reviews until the point when they get discharged from the wards, at which time they are booked to attend the appropriate Mental Health Clinics offered at the hospital for follow-up treatment.

1.3 Problem Statement

Consultation Liaison Psychiatry is an important link between the other medical specialties and psychiatry, and having operational CLP services has been shown to reduce in-patient medical complications, morbidity and mortality, as well as ensuring shorter length of stay in hospital (Sockalingham et al., 2016). Despite there being numerous global studies on this subject, including those conducted at KNH, CLP has not been made visible and operational locally in the Kenyan general medical facilities which provide psychiatric services. It is cardinal, therefore, to ensure that each hospital has a properly functioning and efficient CLP services in place so as to ensure a holistic multi-disciplinary medical care of patients, working towards reduction of the mental health treatment gap (mhGAP, 2010). Furthermore, an analysis of CLP is useful in advising key policy makers on the importance of mental illnesses in Kenyan hospitals and how to address the gap in treatment if identified. This study was designed to bridge this gap by documenting the efficacy of CLP at KNH.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction.

The literature reviewed in this chapter focused on the various studies that have been done locally, regionally and globally on the medical specialties utilizing CLP, commonly occurring medical and psychiatric diagnoses, and the perception of non-psychiatric clinicians on psychiatric treatment.

2.2 Referral Rate

The referral rate in this context compares the number of patients seen at the various CLP services available in a particular hospital to the total number of patients seen at the hospital during a defined period of time. Generally, the referral rate from the various global studies analyzed has been low, ranging between 0.4% and 6.8%. The lowest referral rate of 0.4% was recorded was by Aghanwa (2002) in Fiji while the highest was by Lücke et al. (2017) in Germany. Other studies that showed relatively higher rates of referral to CLP include that by Christodoulou et al (2008) in Greece who recorded a 5.3% rate, Alhamad, Al-Sawaf, Osman and Ibrahim (2006) in Saudi Arabia with a referral rate of 3.9%, and Wand, Corr and Eades (2009) who demonstrated a 3% referral rate among an Aborigine and Torres population. The other studies with low referrals were in India, with Keertish, Sathyanarayana, Kumar, Singh, and Udagave (2013) and Kumar and Anushanemani (2015) reporting a rate of 0.42% and 0.95% respectively. Locally in Kenya, Makanyengo, Othieno and Okech (2005) demonstrated a referral rate of 1.15% at the Kenyatta National Hospital.

2.3 Demographic characteristics of Patients utilizing CLP services.

2.3.1 Age distribution of patients utilizing CLP services.

Of the various literatures reviewed on the age of patients utilizing CLP services at different hospitals worldwide, the range of the ages were between 1 and 99 years. The youngest age was recorded by Keertish et al. (2013) in India, who gave a range of 1 to 86 years, while the oldest patient was reported by Lücke et al. (2017) in Germany, with a range of 15 to 99 years.

Of the other studies, Risal and Prasad (2013) reported a range of 11 to 40 years in Nepal, while Manabendra and Uttam (2013) and Vijay and Udey (2017) recorded a range of 10 to 84 years and 11 to 92 years respectively in India. Similarly, in India, Kumar and Anushanemani (2015) recorded a range between 12 and 70, and Grover et al. (2015) found the range as being between 16 to 91 years. Alhamad et al. (2006) documented a range of between 11 to 80 years in Saudi Arabia, while Lyne et al. (2010) reported ages between 16 and 92 years in Ireland. Aghanwa, Mokarinyo and Aina (1996) reported a range of between 16 to 45 years in a West African Hospital.

Regarding age group distribution, Kumar and Anushanemani (2015) reported the majority of patients being in the age category between 16 and 45 years, with only 3.8% falling in the under 15 years category and 8.9% being older than 45 years of age, while Goyal, Sagar and Sharan (2017) found out that majority of the patients utilizing the CLP services were in the 31 to 45 age group. Bhogale, Katte, Heble, Sinha and Patil (2000) had complementary findings, with more than 70% of the patients falling in the 16 to 45 age category, as did Copello et al. (2013), Sarkar, Balasundaram and Backer (2015),

Muramatsu, Goebert, Sweeny and Takeshita (2008), Alhamad et al. (2006), Lyne et el. (2010), Fulop and Flahavan (2008), and Chapagai, Dangol, Ojha, Rana and Tulachan (2014). However, Shyangwa, Joshi, Sherchan and Thapa (2009) reported that the majority of the patients were of younger age, with 25.1% of the subjects falling between 15 to 24 years of age.

Majority of the literature reviewed reported a mean age of between 31.74 and 38.75 years (Manabendra & Uttam, 2013; Risal & Prasad, 2013; Keertish et al., 2013; Al Habeeb et al., 2002; Copello et al., 2013; Ajiboye & Adekelan, 2004; Aghanwa, 2002; and Alhamad et al., 2006.). Five studies recorded a mean age of between 40.69 and 45.2 years. (Goyal et al., 2017; Chapagai et al., 2014; Grover et al., 2015; Onofa et al., 2014; and Sharp, Innes & Brown, 2011). Of the literature reviewed, only a few studies documented the mean ages of those using CLP services to be less than 30 years. Kumar and Anushanemani (2015) reported a mean of 28.5 years. Al Habeeb et al, 2002, reported that the mean age of the patients using CLP services in teaching hospitals in Saudi Arabia was 25.99 years. This was lower than that recorded in the same study in General hospitals (31.53 years) and primary health care centers (30.32 years). There were some studies that recorded the average age of the patients utilizing CLP as being higher, and these include Lücke et al. (2017) and Ginés et al. (2013) who found a mean age of 64.66 and 65.34 years among patients in Germany and Spain respectively.

Guthrie et al. (2017) documented a median age of 48 years, with an inter-quartile range of 36 to 59 years, while Risal and Prasad (2013) recorded a median age of 35.5 years among

patients in a University hospital in India.

2.3.2 Gender distribution of patients utilizing CLP services.

Among the studies on CLP service utilization as per gender, a slight majority have shown that there are more female than male patients, with an almost equal number of studies demonstrating that more male patients were seen. Few studies have reported an equal number of male and female patients.

In India, Risal and Prasad (2013) reported more female patients utilizing CLP services, the percentage being 54.6%, as did Kumar and Anushanemani (2015) who reported that 51.28% of the population was female. Similarly, in Bangladesh, Fariduzzaman, Bakar, Biswas and Mujtaba (2013) reported that 55.1% of the patients seen were female, while Yousafzai, Jehangiri, Kazim and Shah (2015) found out that 72.3% of the patients were female. Iranian studies by Yassini, Yassini, Yazdi, Poormavahed and Kholasezadeh (2011) and Arbabi et al. (2011) had complementary findings, with 63.3% and 54.3% female patients respectively. Al habeeb et al. (2002) also reported more female patients In Saudi Arabia at primary health care centers. The same study, however, reported that in teaching and General hospitals, more male patients were seen by the CLP team (58.3% and 53.6%). Another study in Saudi Arabia by Alhuthail (2009) also reported more female patients.

Various European studies had homogeneous findings. Göktaş et al. (2004) reported that the female population in a Turkish study was 64.4%, while Lücke et al. (2017) recorded 60% of the patients using CLP services to be female. Other studies that showed more

female patients include Christodoulou et al. (2008), Ginés et al.(2013) in Spain, Sharp et al. (2011) in Scotland, Lyne et al.(2010), in Ireland and Guthrie et al. (2017) in a hospital in Manchester.

In Canada, Juhás and Agyapong (2016) found out that 51.8% of the population was female, while Nakabayashi et al. (2010) in a study in two Brazilian hospitals had comparable of findings. Aghanwa (2002) also reported more female patients utilizing CLP services in Fiji.

Among African studies, Onofa et al. (2014) and Ajiboye and Adelekan (2004) also documented a higher percentage of female patients of 56.7 and 55.3% respectively in Nigeria.

Global studies that reported the population utilizing CLP services to be more male patients were mostly in Asia. Vijay and Udey (2017) reported that 55.9% of patients seen were male; as did Grover et al. (2015) who reported the male patients making up 60.3% of the population.

Kumar and Anushanemani (2015), Keertish et al.(2013), Manabendra and Uttam (2013), Kondaparthi, Ravinder and Saikrishna (2013), Singh et al. (2013) and Bhoghale et al. (2000) reported a majority of male patients requiring CLP services in various hospitals in India. In Nepal, Chapagai et al. (2014) and Singh, Vaidya, Shrestha, Tajhya, and Shakya (2009) had complementary findings of there being more male patients. Alhamad et al.

(2013) also found that there were more male patients in a Saudi population.

Copello et al. (2013) recorded a male preponderance among patients in the United Kingdom.

The studies that reported no difference in the gender of the patients seen by Consultation Liaison Psychiatrists include that by Poli et al. (2017) in Italy and Fulop and Flahavan (2008) in Ireland.

2.3.3 Other Demographic Characteristics

The other demographic variables that were measured and described, though by fewer studies as compared to age and gender include the patient's marital status, education level, socio-economic status, and employment.

Concerning the marital status of the patients utilizing CLP services, Arbabi et al. (2012) in an Iranian study reported that a majority (63.6%) of them were married. Nakabayashi et al. (2010) and Onofa et al. (2014) had complementary findings in Brazil and Nigeria respectively, as did Bhogale et al. (2000) who reported that 54.73% of the Indian patients were married, 40.5% unmarried, and 3.25% widowed and 1.48% divorced or separated. Ajiboye and Adelekan (2004) found out that 49% of the patients in a Nigerian hospital were married, 20% were single, 8% were widowed or divorced and the rest had no recorded data on their marital status. Sharp et al. (2011) had contrasting findings, however, that of the patients seen at CLP clinics, only a minority of 48.5% were married or cohabiting. Christodoulou et al. (2008) also reported a majority of the patients as being

single, widowed and divorced.

As regarding their education level, Bhogale et al. (2000) reported that 93.8% of the patients in an Indian hospital were literate, and 48.9% had a college education. Arbabi et al. (2012) also reported that 86.5% of the patients were educated. Similarly, Onofa et al. (2014) reported that 59.4% of the Nigerian patients utilizing CLP services were educated. Ajiboye and Adelekan (2004) reported that majority of the patients had a basic education, with 21% of the patients having at least a secondary school education and another 21% primary school education. In Pakistan, Yousafzai et al (2015) had a contrasting finding, and reported that more than half of the patients were uneducated, with only 3% having a university education. Kondaparthi et al. (2013) also found that in India, most of the patients seen were uneducated.

Studies that touched on the patient's socio-economic status reported findings of them belonging to a low socio-economic standing, and these include Kondaparthi et al. (2013) in India and Yousafzai et al. (2015) in Pakistan, who documented that 53% of the patients as being of a low socio-economic status.

On the matter of employment, Sharp et al. (2011) found out that only 35.8% of the patients were employed either full-time or part-time, while Onofa et al. (2014) documented an unemployment rate of 52.7% among the patients in a general hospital in Nigeria. Similarly, Christodoulou et al. (2008) reported that most of the patients in Greece seen by Consultation Liaison psychiatrists were unemployed. Yousafzai et al. (2015)

reported that 64.4% of the patients referred to psychiatrists in Pakistan, 64.4% were housewives and 11% were students.

2.4 Medical and surgical specialties utilizing CLP services

The trend that has emerged from the literature that has been reviewed is that general (internal) medicine has been responsible for the referral of the majority of the hospital in-patients to CLP. The other departments that have also sought for consultations from psychiatrists are, in order of their frequency, general surgery, obstetrics and gynecology, orthopedic surgery, Ear Nose and Throat (ENT), also known as Otorhinolaryngology, neurology, Pediatrics, Dermatology, Intensive Care Unit (ICU), Chest or respiratory medicine, Burns Unit and Plastic Surgery. Other departments with less frequent referrals include ophthalmology, neurosurgery, dental units, as well as other internal medicine sub specialties such as nephrology, oncology and palliative medicine, gastrology, cardiology, rheumatology, endocrinology, immunology, geriatric medicine, diabetology, and infectious diseases.

Internal medicine, carrying the bulk of the consultation requests, has had high rates of consultations, the highest being recorded by Lücke et al. (2017) in Germany who reported that 90.8% of the patients seen by the liaison psychiatrists were from the hospital's internal medicine department. Other studies that had similar findings include those by Manabendra and Uttam (2013) in Delhi (86.4%), Kumar and Anushanemani (2015) in Delhi (84.6%), Bhogale et al. (2000) in India (73.55%), Christodoulou et al. (2008) in Greece (73.1%), Fariduzzaman et al. (2013) in Bangladesh (72.9%), and Risal and Prasad (2013) in Nepal (70.4%). The lowest percentage of patients reported to be from the

department of Internal Medicine in a CLP study was by Göktaş et al. (2004) in Turkey, who interestingly found out that the majority of patients utilizing CLP studies were from dermatology (21.8%), the emergency department (13.6%) and neurology department (12.3%). Skakic and Trajanovic (2007) also had similar findings in a Serbian hospital population that the majority of patients referred to psychiatrists were not from the department of general medicine, but from endocrinology, neurology, surgery and cardiovascular disease departments. Barrimi et al. (2014) also reported that the departments in a hospital in Morocco with the most frequent referrals to psychiatry were dermatology (16%) and nephrology (11%). The other studies documented the range of patients from the department of internal medicine as being between 15 and 66%. (Arbabi et al., 2012; Grover et al., 2017; Yassini et al., 2011; Garekar, 2015; Sarkar et al., 2015; Alhuthail, 2009; Ginés et al., 2013; Vijay & Uddey, 2017; Shyangwa et al.,2009; De Giorgio et al., 2015; Zhao et al., 2011) Majority of the studies in African countries also demonstrated that the department of general medicine accounts for most of the patients seen by CLP. (Abiodun & Ogunremi, 1990; Ajiboye & Adelekan, 2004; Nkporbo, Ugoma & Chike, 2014, and Makanyengo et al., 2005)

Of the other specialties, general surgery has been found to contribute to the second highest number of consultations to the psychiatry department in majority of the studies that were reviewed. The highest consultation rates were 26.8%, 25.3% and 23.8%, which were reported by Christodoulou et al. (2008) in Greece, Alhuthail (2009) and Alhamad et al. (2006) in Saudi Arabia. The lowest consultation rates were 1.1 and 1.9%, which were reported by Fariduzzaman et al. (2013) in Bangladesh, and Manabendra and Uttam

(2013) in India.

The department of obstetrics and gynecology was the specialty with the third most consultations in a majority of the studies, and the rates ranged from 1.31 in India (Bhogale et al., 2000) to 21.3% in Saudi Arabia (Alhuthail, 2009). Orthopedic surgery referred between 0.4% (Merebendra et al., 2013 in Delhi) to 15.8% (Kumar & Anushanemani 2015, in India.) Consultations from the pediatric department were found to be between 1.3% by Risal and Prasad (2013) in India, and 13.6% by Al-habeeb (2002) in Saudi Arabia. From the ENT department, the lowest rate of consultation recorded was 1.1% in two studies, by Sharp et al. (2011) in Scotland and Manabendra and Uttam (2013) in India, while the highest rate was 10.3% as reported by Singh et al. (2009) in Nepal. Referrals from neurology ranged from 1.2% (Wand et al. (2009) among an Aborigine population) to 12.3% as reported by Göktaş et al. (2004) in Turkey.

Other notable consultations include those from the burns unit and plastic surgery departments, which ranged from 0.8% (Manabendra & Uttam, 2013) to 9% (Nkporbo et al., 2014), ICU with referrals between 0.4% (Manabendra & Uttam, 2013) and 6.4% (Singh et al., 2009), and from Opthalmology, the highest registered consultation rate being 5.3% by Nkporbo et al. (2014).

Some studies also incorporated the out-patient department, and the accident and emergency when accounting for the psychiatric consultations. Tamborrini et al. (2012) reported that of the total consultations, the emergency department accounted for 70% of

the cases. Wand et al. (2009) found that 40.1% of the patients utilizing CLP services were from the casualty unit of the hospital, while Wimalaratne (2013) found out that the highest number of referrals to CLP in New Zealand of 29% was from the emergency department. Manabendra and Uttam (2013), however, reported that the emergency department accounted for only 0.8% of the total cases, which was low, compared to the 86.4% recorded by internal medicine.

2.5 Reasons for psychiatric consultations

The reasons for seeking consultation with a psychiatrist were numerous and varied in the literature reviewed. Those that appeared to be repeatedly identified in many of the CLP studies include evaluation after a suicidal attempt, alcohol and other substance use or dependence, post-partum conditions, apparent low mood or anxiety, altered sensorium or disorientation, medically unexplained physical symptoms, past psychiatric illness or use of medication to treat a psychiatric illness in the past, behavioral problems or abnormal behavior, and seizures.

Manabendra and Uttam (2013) reported that the commonest reasons for consultations in a hospital in Delhi were a suicide attempt (30.3%), altered sensorium (15%) and alcohol and other drug abuse and dependence in 9.8% of the cases. Other minor reasons were post-partum conditions, medically unexplained symptoms and evaluation for depression and anxiety. Similarly, Kumar and Anushanemani (2015) reported that altered sensorium (24.5%), low mood and medically unexplained symptoms (21%) and suicide attempts as being the commonest reasons for consultations. Others cited by the same study include past psychiatric illness or medication for a psychiatric illness in the past, postpartum

conditions needing assessment, behavioral problems and neurological symptoms. Keertish et al. (2013) still in an Indian teaching hospital reported that 23% of the consultations to liaison psychiatry were due to medically unexplained symptoms, 21% for abnormal behavior and 13.1% for substance abuse. The other reasons that were found in this study, but accounted for fewer cases, include substance abuse, low mood, chronic headache, seizures and sexual dysfunctions. Vijay and Udey (2017) documented that abnormal behavior accounted for 30.9% of the psychiatric consultations at Maulana Azad medical college hospital, in New Delhi. The other reasons for referral were attempted suicide or self- harm (17.9%), past psychiatric history (10.9%), depression (10.1%), substance use (7.9%), unexplained physical symptoms (8.9%), anxiety (5.1%), and disorientation (3.9%). At King George Hospital in India, Kumar and Anushanemani (2015) found that a majority of the consultations were asked for evaluation after an attempted suicide (50%). The other reasons for evaluation included were anxiety, abnormal behavior, substance use and medically unexplained symptoms.

Grover et al. (2017) reported irrelevant talk, abnormal behavior, low mood and suicidality as reasons for consultation. The study also found out that other reasons for consultations were altered sensorium, irritability, crying spells, uncooperativeness, anorexia, restlessness, behavioral problems, mutism, and the need for bad news to be broken to patients or their relatives. Garekar (2015) also reported that the main reasons for psychiatric consultations were acute and abnormal behavioral changes (35%), substance related problems (30%), somatic complaints with suspected depressive disorder (21%) and suicidal attempt (11.5%). Sundarnag, Manjunatha, Vyjayanthi, Virupakshi,and

Murali (2014), Singh et al. (2013), and Philip, Prabhakaran and Nair (2013) had complementary findings, with the commonest consultations being made for suicidal risk assessment, de-addiction services and unexplained physical complaints.

Athokpam and Mhetre (2015) gave the commonest reason for referral as seeking of expert opinion (52.7%), abnormal behavior, not sleeping at night, use of psychoactive substances and irrelevant talk. Singh et al (2009) also reported that most consultations were made for expert advice (36.1%) in a teaching hospital in Nepal. The other consultations were, similarly, made for abnormal behavior, irrelevant talk, and suicidal attempt. Bhogale et al.(2000) reported that the reasons for psychiatric consultations at a multi-specialty hospital in India included medically unexplained symptoms (62.75%), frank psychiatric illness (20.91%), and the rest being medico-legal cases, and demand for psychiatric treatment by the patient or a relative.

Goyal et al. (2017) in North India reported that the majority of consultations were of a different nature from those in other studies, in that psychiatric clearance of a prospective kidney donor and Bone Marrow or Stem Cell Transplant recipients was being sought in 23.1% of the cases. The other reasons documented were however complementary to the other studies and included evaluation for suicide attempts (16.9%), altered behavior (14.4%), assessment for a psychiatric illness (10%), and assessment for addiction, depression and unexplained somatic complaint.

In a study in a Pakistani tertiary care hospital, Yousafzai et al. (2015) reported the

majority of consultations to liaison psychiatry were made for aggressive and threatening behavior in the patients and suicidality. Yassini et al. (2011) found out that consultations to psychiatry were made for unknown causes of illness (25.6%), past psychiatric illness history (27.8%), behavioral disorders (31.1%), somatic complaints (8.9%) and suicidal attempts (6.7%) in a general hospital in Iran. Arbabi et al. (2012) found that reasons for consultations in two general hospitals in Iran were present psychiatric symptoms in 61% of the cases, past psychiatric symptoms in 16.9%, requests for psychiatric interventions in 11.1% and in 6.4% of the cases, assessment for a possible psychiatric etiology of an illness was the reason for consultation. Alhuthail (2009) had comparable studies in Saudi Arabia, in which the commonest reasons for consultations were enumerated as depressive symptoms in 32.7%, behavioral problems in 13.7%, cognitive impairments in 3.8%, anxiety and psychosis in 9.5 and 1.9% respectively. Other reasons were previous psychiatric history, lack of cooperation, suicidal behavior, and substance use. Also in Saudi Arabia, Alhamad et al. (2006) found that most consultations were due to anxiety and psychotic symptoms, substance use and abnormal behavior.

Zhao et al. (2011) reported that the most dominating reason for “current emotional symptoms”, which accounted for 28.4% of the cases in a Chinese general hospital CLP department. Similarly, Wong and Yiu (2014) also found out that the commonest reason for psychiatric consultation in a general hospital in Hong Kong was emotional instability, followed by suicidal attempt or deliberate self-harm and aggression. Jiang, Zhou, Dang and Liu (2009) found out that the principal reasons for psychiatric referrals to a general hospital in Beijing included psychotic symptoms in 31.8% of the patients, depression

(13.1%) and anxiety in 10.9% of the study population.

The reasons for liaison psychiatry consultation in Europe were more or less similar to those brought out in the Asian studies already discussed. De Giorgio et al. (2015) reported that the commonest requests for consultation were for anxiety (18.9%), depressive symptoms (18.2%), confusion (13.4%), unexplained physical symptoms (11.2%), risk for, or attempted suicide (11.2%), psychomotor agitation (10.9%), and a past history of psychiatry (14.4%). The same study went on further to focus on referring departments and their reasons for consultations, and found out that medical units mostly consulted for symptoms of anxiety and depression, surgical units consultations focused more on suicidal attempts or risks and agitation, while for specialist units, most cases involved depressive symptoms, past history of a psychiatric illness and use of a psychoactive substance.

Christodoulou et al. (2008) reported psychotic symptoms (41.3%), suicide attempts (22.1%), past psychiatric history (18%), disruptive behavior and non-compliance (4.9%) and unexplained medical symptoms (8%) as being the commonest reasons for liaison consultations in Greece. Huyse et al. (2001) found out that the most frequent reasons for asking for psychiatric consults in eleven European countries were deliberate self-harm, substance abuse, current psychiatric symptoms and unexplained physical symptoms. Göktaş et al.(2004) reported that majority of the consultations in a Turkish education hospital were for psychiatric evaluation without a specific reason given (31.8%), while the other consultations were made for depressive complaints, suicidal attempts and

anxiety disorders. Ginés et al. (2013) found out that most consultations in a Spanish hospital were made due to symptoms of depression (46.9%), behavioral disorders (18%) and anxiety in 10.2% of the cases. Sharp et al. (2011) in a general hospital in Scotland reported that the request for psychiatric assessment in 31.7% of the cases had no clear indication of the nature of psychological difficulty. In those referrals that had reasons, depression was the most commonly cited, followed by anxiety related symptoms and behavioral difficulties. Lyne et al. (2010) had similar findings in Ireland, reporting that the reasons for referrals were assessment for depressive disorders (23.8%), delirium and other cognitive disorders (19.2%), alcohol related disorders (18.6%), anxiety symptomatology (14.5%) and risk management in 12.2% of the cases. The same reasons were documented by Fulop and Flahavan (2008) in Ireland, who gave the commonest ones as being assessment for deliberate self-harm, assessment for affective symptoms, and alcohol or substance abuse. Guthrie et al. (2017) however cited the commonest reason for referral as being the patient's medication management in a teaching hospital in Manchester.

Wand et al. (2009) found out that in an Aboriginal and Torres Strait Island population, the commonest reasons for consultations were risk assessments (29.6%), behavioral problems (14.8%), psychosis (9.3%), general assessment (8%), review of medication that a patient is already on (4.9%), anxiety (4.3%), abnormal illness behavior (3.1%), capacity assessment (2.5%), assessment for treatment (1.9%), delirium (1.2%) and symptoms of mania in 0.6% of the patient cases. Another study in Australia that focused on women in a maternity hospital identified the main reasons for psychiatric consultations as being

detection of depression, a past history of a psychiatric illness and concern regarding a woman's ability to cope after birth. (Judd et al., 2010) Wimalartne (2013) reported that a majority of the cases referred were for suicidal risk evaluation in a hospital in New Zealand.

In Hawaii, reasons for liaison psychiatry consultations were found to be depression and anxiety symptomatology (27.4%), alcohol and substance use and related complications (21.8%) and agitation or psychosis in 20.5% of the patients at a major medical center. (Muramatsu et al., 2008)

Some African studies also documented reasons for referral to CLP. Nkporbo et al. (2014) reported that deliberate self-harm, intellectual disability and substance abuse and its complications were the commonest reasons for consultations. Ajiboye and Adelekan (2004) found out that the most common reason for consultation was psychiatric symptoms in 57% of the cases, the other referrals being sought for evaluation after intentional self-harm, expert advice on management, psychoactive drug use, and unexplained physical symptoms. Barrimi et al. (2014) in Morocco enumerated psychomotor agitation and evaluations of suicidal attempts as the commonest reasons for requesting psychiatric consultations.

2.6 Co-morbid conditions in patient utilizing CLP services

Psychiatric illnesses have been associated with debilitating and chronic medical illnesses, including HIV/AIDS, various cancers, chronic respiratory diseases, hypertension, DM, pregnancy related complications, among others. Similarly, patients with severe mental

illnesses have been shown to have increased risk for some physical illnesses, including, but not limited to, obesity, Metabolic Syndrome, DM, CVD, CAD, Viral diseases such as HIV/AIDS, Hepatitis, acute and chronic respiratory diseases, Musculoskeletal diseases, and complications during pregnancy. (Ndetei et al., 2009; De Hert et al., 2011) Studies across the globe had complementary findings on the co-morbid conditions.

Risal and Prisad (2013) found out that the commonest co-morbid conditions among patients who utilized CLP services in an Indian teaching hospital included acute poisoning (30.5%) and alcoholic liver disease (12.7%). Other conditions reported were Chronic Obstructive Pulmonary Disease (COPD), DM, headache, Prolapsed Intervertebral Disc (PID), post-operative states, post- partum states, Road Traffic Accidents (RTA) and seizure disorder. Vijay and Udey (2017) had a slightly different concurrent disease profile, but poisoning, burns and injury being the most common condition. Others that were recorded were infectious and parasitic diseases, neoplasms, endocrine disorders, metabolic disorders, nervous system disorders, CVD, respiratory and gastrointestinal disorders, connective tissue disorders, genitourinary diseases, hematological disorders, and obstetric and gynecological conditions. Goyal et al. (2017) also in India reported that a majority of the patients seen by psychiatrists at a tertiary care center had a diagnosis of malignancy (15.6%), DM (8.8%), TB (6.9%), gastrointestinal stenosis (3.8%), and seizure disorder (3.8%). Grover et al. (2017) categorized the diseases according to the systems involved and reported that majority of the patients had multi-organ involvement (18.7%) and an almost equal number had gastrointestinal, including liver disease (17.4%). The other involved systems, were, according to frequency, the nervous system, female genital tract, cardiovascular system, respiratory system,

hematological conditions, and the endocrine system.

From a study in a Nigerian teaching hospital, Nkporbo et al. (2014) had findings that were in keeping with the previously discussed studies, and recorded that the co-morbid conditions were acute poisoning, hypertensive disease, CVD, complicated DM, HIV encephalopathy, head injury, status epilepticus, pre and post-operative states, malignancies, chronic kidney and liver disease, thyroid dysfunction, electrolyte imbalance, hearing impairment, retained foreign bodies, glaucoma, partial or total blindness, infertility, Pre-eclampsia toxemia, puerperal infections, burns and fractures. Onofa et al. (2014) reported that the commonest conditions among patients referred for psychiatric consultations in a Nigerian hospital are neurological and cardiovascular disorders. Similarly, Aghanwa et al. (1996) reported that the physical illnesses in patients referred to CLP in West Africa were infectious diseases, neurological disorders, cardiovascular disorders and obstetric conditions. Ajiboye and Adelekan (2004) also had homogenous findings, with 31.9% of the co-morbid conditions being infections (typhoid enteritis, TB, HIV encephalopathy, puerperal sepsis), 14.9% being neurological disorders (seizures, quadriplegia, spinal cord injury), 10.6% obstetric conditions (post-partum eclampsia and toxemia), Cardio-vascular disorders (hypertension, stroke, heart failure), trauma, overdose of antipsychotic drugs, and acute poisoning,

2.7 Psychiatric diagnoses made by Consultation Liaison Psychiatrists

The diagnoses made by the Consultation Liaison Psychiatrists were either using the International Statistical Classification of Diseases and Related Health Problems, 10th Edition (ICD-10) or the Diagnostic and Statistical Manual for Mental Disorders, 4th

Edition (DSM- IV). The commonest disorders that were identified among CLP patients were mood disorders, particularly depression, alcohol and other substance use disorders, anxiety, psychosis, pregnancy related disorders and somatoform disorders. Reports of the being more than one diagnoses in a patient were also made, Singh et al. (2013) finding dual diagnoses in 10% of the cases. There were also no psychiatric diagnoses made in a number of the patients referred, some studies quoting percentages as high as 35% (Goyal et al., 2017) and 48.7% (Kumar & Anushanemani 2015).

Risal and Prasad (2013) found out that the commonest illnesses in the CLP department of an Indian University hospital were mood disorders, which included depression and dysthymia. These, together with adjustment disorders accounted for 31.9% of the cases. Other common disorders included alcohol withdrawal and dependence (23.1%), personality disorders (12.7%), mania or bipolar mood disorder (BMD), anxiety, childhood psychiatric illnesses dissociative disorders, schizophrenia and other psychoses. Manabendra and Uttam (2013) had a complementary profile of disorders, reporting the commonest as being depression, alcohol and other substance use, BMD, personality disorders, schizophrenia, adjustment disorder, and acute psychosis. The study also documented cases of dissociation and conversion, Obsessive Compulsive Disorder (OCD), tic disorder, catatonia and schizo-affective disorder. In the two studies, no psycho-pathology was demonstrated in 8.8 and 1.1% of the patients respectively. Kumar and Anushanemani (2015) also had a similar disease pattern, the commonest being alcohol withdrawal (21%) and depression (14%). The other diagnoses were anxiety and somatoform disorders, dementia, BMD, schizophrenia, conversion, intellectual disability,

conduct disorder, Attention Deficit and Hyperactivity Disorder (ADHD), personality disorders, adverse drug reactions to psychotropic medication, peri-partum psychosis, polysubstance abuse. 1.6% of the patients had no diagnosis. Keertish et al. (2013) found out that the most frequent diagnoses were neurotic, stress and somatoform disorders (41.7%).

Vijay and Udey (2017) gave the commonest diagnosis as being delirium (17.9%), organic psychosis and mood disorders (14.8%), depression (12.9%), substance related disorders (12.9%), and schizophrenia and other psychoses in 10.9% of the cases. The other disorders identified were adjustment, anxiety, somatoform, personality, bipolar affective, sleep and dissociative disorders. A similar diagnostic patterns was made by Goyal et al. (2017), Garekar (2015) and Kumar and Anushanemani (2015) Grover et al. (2017) also reported a complementary disease pattern to the previously discussed studies but had the added diagnoses of enuresis, malingering, eating disorders and neuroleptic malignant syndrome made in a small percentage of the cases (0.5% each)

Farriduzzaman et al. (2012) found out that the most frequent disorders at a teaching hospital in Bangladesh were major depressive disorders (19.6%), anxiety disorder and schizophrenia, which accounted for 18.7 and 14.2% of the cases respectively. The other diagnoses made were commonly made were sexual dysfunction, substance use related disorders, and conversion disorder. Pakistani literature portrayed a similar disease distribution, with depression being the most frequent illness (45.43%), followed by conversion disorder in 17% and delirium in 14% of the patients. (Yousafzai et al., 2015)

In Nepal, the most prevalent mental disorders in a teaching hospital were depression (26.9%), anxiety disorders (15.5%), substance related disorder (14.5%), deliberate self-harm (8.5%), seizure disorder (8.3%), somatoform disorder (7.6%), organic mental disorders (7.4%), adjustment disorders (4.6%), dissociative disorder (4.1%), psychoses (1.4%). 1.2% of the cases had no psychiatric diagnosis made. (Singh et al., 2009) Shyangwa et al. (2009) had similar findings, and reported the commonest diagnoses made at a hospital in Nepal to be dissociative and conversion disorders (17.2%), alcohol related disorders (16.5%), and depressive disorder (13.2%), while Aghanwa (2002) recorded the majority of patients as having neurotic, stress related and somatoform disorders, which was the same distribution that was recorded by Chapagai, et al. (2014) in Nepal and Sundarnag et al. (2014) in India. The two studies also included substance use disorders, organic mental disorders and depression in their diagnostic profile. The later, in addition, documented that 19.6% of the referred cases had no psychiatric diagnosis made.

Regarding CLP services in Saudi Arabia, Al-habeeb (2002) found out that the most frequent diagnoses in teaching, primary care and general hospitals were mood (24.6 to 35.6%) and anxiety disorders (13.8 to 27.4%). Other disorders that were identified were schizophrenia and other psychoses, dementia, somatoform disorders, childhood disorders, and personality disorders. A similar diagnostic profile was reported by Alhuthail (2009) in a Saudi university hospital, with majority (32.7%) of the patients referred having depression. Other diagnoses made were behavioral problems, cognitive impairment, anxiety, psychosis, and substance use disorders. Alhamad et al. (2006) also reported depression and anxiety disorders as being the commonest psychiatric diagnoses in a Saudi general hospital.

Amongst Chinese patients referred to CLP, Zhao et al. (2011) reported the commonest diagnostic category as neurosis, stress disorders and anxious states (44.2%). Jiang et al. (2009) recorded cognitive disorders in 32.2% of the patients seen at a general hospital in Beijing. The other illnesses documented included depressive disorders (17.7%), anxiety disorders (13.1%), and schizophrenia and other psychotic disorders in 9.8% of the cases. Majority of the patients in two Brazilian hospitals utilizing CLP services had the diagnosis of depression, adjustment and personality disorders. (Nakabayashi et al., 2010) The bulk of the cases in a general hospital in Iran were attributed to depression (51%). The other disorder diagnosed were anxiety (15.6%) and OCD (1.1%). 12.2% of the patients had no psychiatric diagnosis. (Yassini et al., 2011) Arbabi et al. (2012) reported that majority of patients in two Iraqi general hospitals had mood disorders (43.5%). Of these, 28.8% were cases of depression and 5.8% BMD. Other diagnoses made were adjustment disorders, cognitive disorder, delirium, dementia, anxiety disorder, psychosis, somatoform disorders, and substance use disorders. 13.5% of the patients referred had no psychiatric diagnosis.

In Canada, Juhas et al. (2016) documented that a higher proportion of the female patients utilizing CLP had depressive and personality disorders, while their male counterparts frequently were diagnosed with anxiety disorders, bipolar and related disorders, schizophrenia spectrum and substance use related disorders.

Hawaiian literature on CLP services reported depression and anxiety as the most

frequently occurring psychiatric illness, followed by alcohol and other substance use disorders, psychosis and cognitive disorders. (Muramatsu et al., 2008)

European studies reported complementary findings to those found by researchers in Asia and America. Huyse et al. (2001) in their report on the European Consultation Liaison work-group reported that the most predominant illnesses were mood and organic mental disorders, followed by somatoform and dissociative disorders. Ansseau et al. (2004) documented that the most frequent disorders in a Belgian adult primary care population were mood disorders (31%), anxiety disorders (19%), somatoform disorders (18%) and alcohol abuse or dependence (10.1%). Of the mood disorders, major depression was most prevalent, and among the anxiety disorders, Generalized Anxiety Disorder (GAD) was most frequent. A similar diagnostic profile of mood and anxiety disorders was identified by Sharp et al. (2011) in Scotland, but the majority of the cases were diagnosed as having neurotic, stress-related and somatoform disorders. Fulop and Flahavan (2008) reported depression, personality disorders and alcohol use disorders as being the commonest psychiatric diagnoses made in a hospital in Ireland. Other illnesses documented were eating disorders, poly-substance use disorders, dementia and anxiety.

In Italy, De Giorgio et al. (2015) reported mood disorders, especially depression and anxiety as being the commonest diagnoses among referrals to CLP. Poli et al. (2017) also identified anxiety disorders as being the commonest, together with somatoform disorders in a general hospital in Italy. In Turkey, the most frequent psychiatric diagnoses made were depression, adjustment and personality disorders. (Göktaş et al., 2004)

Copello et al. (2013) found out that majority of the patients referred to CLP over a 3 year period in the United Kingdom had psychosis (52.6%), depression (16.8%), and were commonly using alcohol or cannabis. Guthrie et al. (2017) found out that majority of the patients in a teaching hospital in Manchester has schizophrenia and BMD. German CLP studies showed the most frequent illnesses as being affective disorders (39.3%), organic mental disorders (18.9%), alcohol induced mental disorders (11.3%) and stress-related disorders, which include acute stress reactions, adjustment disorders and post-traumatic stress disorder. (Lucke et al., 2017). Gines et al. (2013) recorded affective disorders, delirium, pschosis and anxiety disorders as the most frequent diagnoses made in a Spanish hospital's CLP, while Vasilian and Tamasan (2013) found that the commonest psychiatric diagnoses in a Romanian hospital were dementia and depression.

The commonest psychiatric diagnoses in Australia, as documented by Wand et al. (2009) were drug and alcohol related disorders in 19.8% of the cases, personality disorders (14.2%), depression (9.9%), psychosis (9.9%), adjustment disorders (7.4%), delirium (6.2%), anxiety (5.6%), dysthymia (3.7%), behavioral disorders (1.9%), and cognitive problems (1.9%). The other cases other reported to have abnormal illness behavior, intellectual disability and organic mental illness. Judd et al. (2010) reported the commonest psychiatric illnesses in a maternity hospital in Australia as being depression, substance use and anxiety disorders. In Fiji, Aghanwa (2002) recorded schizophrenia and other delusional disorders as accounting for the bulk of the referred in-patient cases (58.5%), while BMD accounted for 30.6%.

In West Africa, Nkporbo et al. in 2014 reported a pattern similar to that of global studies, with the commonest diagnoses being acute and chronic organic conditions, depressive disorders, substance abuse, puerperal psychosis, adjustment and anxiety disorders, schizophrenia, schizoaffective disorders, conversion disorder and drug induced complications. Onofa et al. (2014) reported depression as the most frequent diagnosis in a general hospital in Nigeria. Aghanwa et al. (1996) documented the commonest encountered psychiatric symptoms in a West African general hospital as being acute brain syndrome, brief reactive psychosis, depressive disorder and dementia. Ajiboye and Adelekan (2004) recorded organic brain syndrome as the commonest diagnosis made in CLP in a Nigerian teaching hospital. Makanyengo et al. (2005) also reported a similar disease profile in Kenya, with alcohol related disorders being the most common, acute and transient psychoses, depressive disorders, dissociative and conversion disorders and dementia contributing to the morbidity.

2.8 Knowledge, attitude and practices toward psychiatric treatment and referral pattern by non-psychiatric doctors.

Alhamad et al. (2006) reported poor knowledge and negative attitudes towards psychiatry by physicians in a hospital in Saudi Arabia, which in turn translated to low referral and consultation rates. The study emphasized on the importance of integrating psychiatry into medical training at all levels, as this would improve the collaboration between the two disciplines and lead to better patient care. Similarly, Al-Osaimi and Al-Haidar (2008) upon an assessment of pediatrician's knowledge, practice and attitudes towards childhood psychiatric disorders in Riyadh found out that significant number of the study participants

reported a lack of training in child psychiatry during their residency, which impacted their clinical acumen negatively when encountering childhood psychiatric disorders during their practice. A similar picture was documented by Liu, Lu and Lee (2008) in Taiwan among non-psychiatric physicians, who reported that majority of them had poor training in psychiatry, thus had incomplete knowledge and skills. This contributed to the physicians not having the confidence in management of depression.

Chaudhary and Mishra (2009) found out that a large number of non-psychiatric doctors in Punjab had poor knowledge and skills for diagnosis and treatment of mental illnesses. The study documented the need for improved training of doctors on handling psychiatric disorders.

Positive attitudes and acceptable practices were found in a majority of physicians in Iran. (Zarghami Farnia, Khalilian, & Amirian, 2014). Many of the physicians frequently requested for psychiatric consultations when they felt it as necessary, and those who did not reported this to be attributed to them seeing no need for consultation, forgetting to ask, lack of time, or lack of access to a psychiatrist. In the same study, only a small proportion was comfortable in commencing treatment for psychiatric illnesses without consultation. In the United Kingdom, Thompson, Dogra and McKinley (2010) reported a positive attitude towards psychiatry, especially in general practitioners with postgraduate experience in psychiatry.

In China, majority of the non-psychiatric doctors interviewed saw the importance of

psychological factors in physical illnesses, and were likely to consider psychiatric consultations for their patients as needed. (Wang et al., 2017)

In Nigeria, Wakil, Abdul, Abdulmalik, Salawu and Ahidjo (2013) studied post-graduate doctors in a teaching hospital had positive findings in that a majority of the doctors acknowledged that the physically ill could have psychological conditions, and were in agreement that psychological factors influence the presentation, course and outcome of illness. Majority of them could, also, recognize psychiatric symptoms and request for a psychiatric consultation or initiate treatment if necessary. However, only 10% of them knew of other treatment options for psychiatric illnesses beyond medication.

Ndetei, Khasakhala, Mutiso and Mbwayo (2011) reported a generally positive attitude towards mental health among healthcare workers in ten different level hospitals in Kenya. There was a wide variety of mental health knowledge, however, with some health workers having insufficient knowledge to enable them to handle cases of mental illnesses. The facilities with the highest rates of suspicion of mental illness and as a result more referrals were the facilities that had resident psychiatrists. The study demonstrated the need and importance of continuous medical education for health care workers on mental illnesses.

2.9 Conceptual Framework

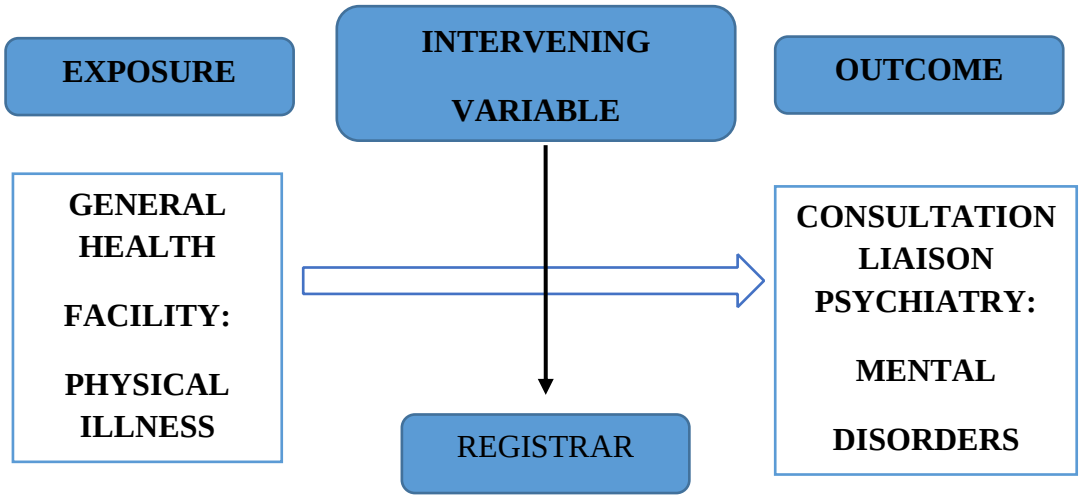


Figure 1. Conceptual framework

2.10 Justification of Study

There were limited regional and local studies on this subject, despite there being CLP services offered at the major referral hospitals. This study added on to what is known on the utilization and efficiency of these services and gave appropriate recommendations to the relevant authorities.

2.11 Significance of Research

The findings from this study have increased the body of knowledge on the utilization of CLP services at the KNH. They are also important for advising the UoN's College of Health Sciences' postgraduate departments on the need to incorporate more of mental health programmes into their teaching curricula.

2.12 Research Questions

1. What are the utilization patterns of Consultation-Liaison Psychiatry services at the

Kenyatta National Hospital?

2. What are the perceptions of the residents on their proficiency in diagnosis and management of commonly occurring psychiatric conditions in the consulting departments?

2.13 Objectives

General objective

To document the utilization patterns and efficiency of the CLP at the Kenyatta National Hospital.

Specific Objectives

1. To determine the medical and psychiatric diagnoses of the patients who utilize Consultation-Liaison Psychiatry services at the Kenyatta National Hospital.
2. To determine the medical and surgical departments who utilize Consultation-Liaison Psychiatry services at the Kenyatta National Hospital.
3. To evaluate the perception of resident clinician's proficiency in diagnosis and management of commonly occurring or co-co-occurring psychiatric at the Kenyatta National Hospital.

CHAPTER 3: METHODOLOGY

3.1 Introduction

In this chapter, a description of the methods that were utilized in this study are made. This includes the study site, population and design, the sampling procedure and sample size, data collection tools, data analysis and management plan, as well as the study limitation and ethical considerations that were observed during the study.

3.2 Study design

This study had a cross-sectional design. For the collection of data on Consultation Liaison services, an assessment of the clients who were referred for CLP during the month of June 2018 was done, and secondary data for patients utilizing CLP in the 2 year period beginning January 2016 and ending December 2017 was recorded. The knowledge, attitude and practice of UoN resident doctors concerning mental illnesses were assessed.

3.3 Study site

The study took place at the Kenyatta National Hospital and the University of Nairobi's College of Health Sciences. The secondary data was collected from the hospital's records department, while the patients were interviewed at the in-patient wards of the hospital.

3.4 Study Population

There were two populations in this study. The first were all the patients who have been admitted to KNH, and referred to the hospital's Psychiatric Liaison Department. The second population comprised of all postgraduate students (residents) currently enrolled for study at the University of Nairobi's College of Health Sciences, and working in the

KNH in the seven departments that were identified from literature to account for the most consultations to CLP, namely internal medicine, general surgery, ENT, paediatrics, orthopedic surgery, obstetrics and gynecology, and neurosurgery.

3.5 Sampling procedure

All the consultations received at the KNH's department of mental health during the 2 year period beginning in January 2016 and ending in December 2017 were identified, the file numbers noted and the patient files retrieved from the hospital's registry, after which the socio-demographic characteristics, specialties requesting consultations, medical and psychiatric diagnoses were recorded. All the consultations received by the Mental Health department during the study period of one month were identified, in liaison with the registrar on call. All the patients were eligible to participate in the study.

All the postgraduate students in the selected departments selected were eligible to take part in the study.

3.6 Inclusion and Exclusion Criteria

3.6.1 Inclusion Criteria

- All patients referred to the KNH liaison department during the data collection period were included in the study.
- All the postgraduate students in the departments of internal medicine, general surgery, paediatrics, ENT, orthopedic surgery. Obstetrics and gynecology, and neurosurgery were eligible to be part of the study.

3.6.2 Exclusion Criteria

- Patients who did not consent to take part in the study were excluded.
- Post graduate students from other departments other than the seven chosen to take part in the study were excluded.
- All post graduate students in the eligible departments who did not consent to take part in the study were excluded.

3.7 Tools for data collection

The MINI 6.0 assessment tool, which has standard closed ended structured questions, was utilized to assess psychiatric morbidity among the patient referred to CLP during the data collection period. Socio-demographic data (age, sex, marital status, level of education and employment) was collected via a researcher developed questionnaire.

The standardized MICA 4 tool was used to assess their knowledge, attitudes and practices of registrar, while a researcher developed tool was used to collect socio-demographic and supplemental data not captured in the MICA 4.

3.8 Pretesting of the tools

The socio-demographic and supplemental data questionnaire for registrars was pretested among 10 residents in the department of psychiatry to assess for any ambiguity in wording, ease and feasibility of online access, and to determine the time taken to complete it. The standardized tools were not pre-tested as they have been used in numerous studies both globally, regionally and locally.

3.9 Validity of the tools

The MINI 6.0 is a researcher administered short diagnostic interview developed jointly by psychiatrists and clinicians in the United States of America and Europe for Diagnostic and Statistical Manual for psychiatric Disorders, fourth version (DSM IV) and the International Statistical Classification of Diseases and Related Health Problems 10th Revision (ICD 10 disorders). It was found to be a valid and reliable tool, and took half as long during administration when compared to the Structured Clinical Interview for DSM III-R Patients (SCID-P) (Sheehan et al., 2010). In Africa, it has been used by Jalloh (2016) in the identification of pattern of psychiatric morbidity gaps among patients at the Sierra Leone Psychiatric hospital in Freetown.

The MICA 4 scale is a short self-administered instrument suitable for application to health professionals. It was developed at the Health service and population research department, Institute of Psychiatry, King's College. It has 16 items, with a score ranging between 16 and 96, a higher score indicating a more negative attitude. It has been demonstrated to be a valid scale, which is responsive to various interventions, based on its correlation with instruments designed to assess the emotional reactions and social proximity to people with mental illnesses. It has been reported to be a responsive, reliable and valid tool that can be used in medical education and mental health promotion settings and studies (Kassam, Leese, Henderson & Thornicroft, 2010).

3.10 Data collection procedures

All patients referred to the liaison department were identified at the beginning of each day during data collection period of June 2018. This was done from the requests that are

brought into the department from the in-patient wards. The researcher then noted their socio-demographic data before proceeding to their respective wards to detail the purpose of the study, and after consent was obtained, administered the written consent form and the questionnaire. Patients who declined to take part in the study were thanked.

For the secondary data, demographic characteristics, consulting departments and clinical and psychiatric diagnoses were obtained from the respective patient files and recorded. To achieve this, the patient file numbers were identified from the Liaison Psychiatry records book at the department of mental health and then used to retrieve the patient files from the KNH records department, and the relevant information was recorded.

The chief registrar and class representative's contacts were obtained from their respective departmental secretaries, and they were contacted to explain the purpose of the study. The other residents' contacts were obtained from the representatives. The researcher then explained the purpose of study to each of the residents and invited them to participate in the study. They were given a link to the survey via a text and an email that lead them to the page with the online written informed consent and survey questionnaire, which they filled in and submitted when completed. The survey was hosted on the online platform, SurveyMonkey.

3.11 Recruitment and Data Collection Flow Chart

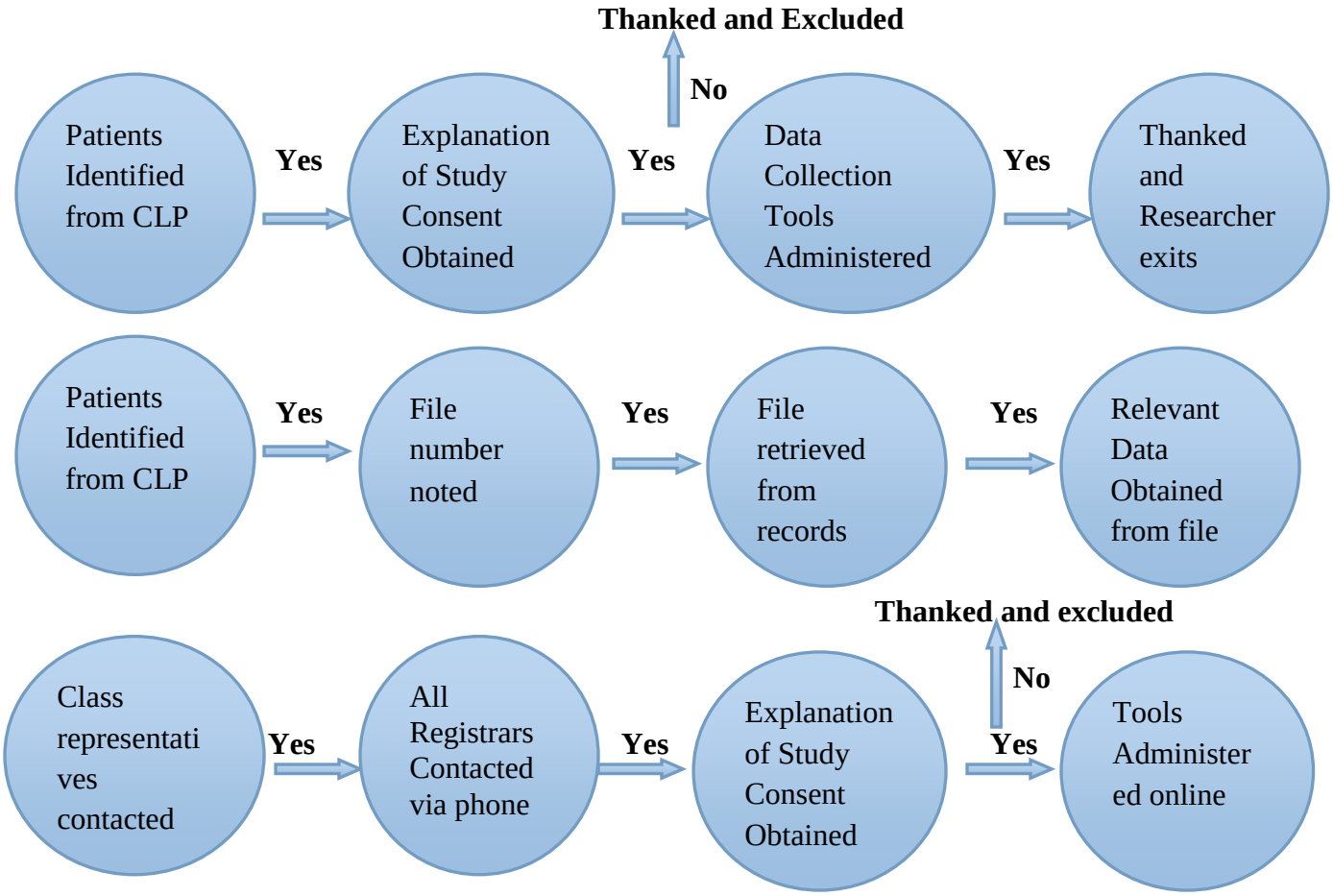


Figure 2. Recruitment and data collection flow chart

3.12 Quality Assurance

1. Approval for the study was obtained from the Kenyatta Hospital/ University of Nairobi's Scientific, Ethics Review Committee (SERC).

2. The study was done under the supervision of two lecturers at the UoN's department of Psychiatry.

3. Prior to collection of data, the purpose and the scope of the study was explained to the participants in detail and consent obtained.

4. Presentation of the results was done at the UoN's department of Psychiatry, and the findings will be published in a peer reviewed journal.

3.13 Data Management procedure

Data from the questionnaires was sorted by the researcher, after which it was entered, cleaned and analyzed using the Statistical Package for Social Sciences (SPSS) version 23. It was presented as appropriate in tables and figures.

Secondary data obtained from the patients was entered directly into a Microsoft excel sheet on the researcher's computer to capture the socio-demographic characteristics, referring departments, medical and psychiatric diagnoses, before analysis and presentation in appropriate tables and figures.

The researcher was responsible for documentation and submission of both hard and soft copies to the Department of psychiatry for marking and grading and has organized for long term storage at the University of Nairobi's library repository.

The role of supervisors was to correct the researcher during data collection and to check for data quality, clarity and completeness. They were also responsible for guiding the researcher on publication of the study in a reputable peer reviewed journal.

3.14 Ethical Considerations

1. A written informed voluntary consent was administered to the study participants after a detailed explanation of the purpose of the study.
2. No personal identifiers were used during data collection to protect the

confidentiality and privacy of the participants. Data security was ensured by the researcher by storage of the data in a password protected computer after entry. The completed questionnaires have been stored securely in a locked cabinet at the researcher's home for 3 years, after which they will be destroyed by shredding. The researcher has ensured that data collected was be solely be used for the purpose of the study.

3. There were no risks of participation in the study.
4. No monetary compensation was offered for participation in the study, but the study findings are beneficial for KNH and UoN in better understanding and betterment of CLP services at the hospital and psychiatric training of the postgraduate students at the university. Acute psychiatric illnesses that were detected by the researcher prompted further psychiatric history takin and relevant investigations. The study participants were commenced on appropriate treatment and follow-up by the KNH Mental health department was arranged. This was clearly documented in the patient files.

CHAPTER FOUR: RESULTS

4.1 Introduction

This chapter presents the results of the study, according to the objectives. It discusses the socio-demographic profiles of the respondents, medical and surgical departments utilizing CLP, medical and psychiatric diagnoses, and the resident clinician's perception, knowledge and attitudes on mental illnesses and their management. The results are presented in tables and figures as appropriate.

4.2 Response Rate

A total number of 33 referrals were made to CLP in the month of June 2018. Out of these, 2 were repeat consultations. The data collection tool was administered to 28 of the patients (84.8%). Of the 3 patients who were not interviewed, 1 could not communicate due to the nature of illness, 1 had a language barrier and 1 had absconded from the ward by the time of the interview.

A total of 200 Postgraduate students from the seven departments responded to the online questionnaire.

4.3 Referral rate

In 2016 and 2017, 83183 and 74622 patients were admitted to the KNH inpatient wards. Out of this, 353 were referred to CLP in 2016 and 151 in 2017. This translated to a referral rate of 0.42% and 0.2% in 2016 and 2017 respectively, as shown in table 1.

Table 1

Number of Patients Referred to KNH CLP in 2016 and 2017

Month/ Year	2016	2017
January	28	6
February	19	4
March	44	13
April	34	9
May	33	35
June	48	16
July	36	22
August	29	15
September	31	27
October	24	17
November	20	8
December	7	7
Total	353	151

4.4 Demographic characteristics of Patients utilizing CLP services.

For the secondary data, the age range was between 2 and 86, with a mean of 26.46 years, while for the patients seen in June 2018; the range was 6 to 50 years, with a mean of 30.65 years. The highest number of patients were between 20 and 29 years old (40.3 and 50% for the 2016/2017 and June 2018 data respectively In 2016/2017, there were slightly more female than male patients utilizing CLP services, while in June 2018, more male patients utilized psychiatric services. In both data sets, majority of the patients were single, 64.8% in 2016/2017 and 82.1% in June 2018. Majority of the patients referred to CLP in June 2018 had a low education status, with only 7.1% having attended a tertiary education institution. More than a half of the patients were employed (57.1%), and majority (95.2%) had a total monthly family income of less than Kshs 30,000. This is depicted in table 2.

Table 2

Demographic Characteristics of Patients Utilizing CLP Services

Characteristic	2016-2017	June 2018
Age (measures of central tendencies)		
Range	2 to 86	6 to 50
Mean	26.46	30.65
Median	26.50	28
Standard Deviation	10.55	14.96
Age group(years)		
0-9	20 (6.3)	2 (7.1)
10-19	22 (6.9)	2 (7.1)
20-29	128 (40.3)	14 (50)
30-39	78 (24.5)	7 (25)
40-49	28 (8.8)	2 (7.1)
50-59	12 (3.8)	1 (3.6)
60-69	10 (3.1)	0
70-79	6 (1.9)	0
>80	2 (0.6)	0
Sex		
Male	158 (49.7)	16 (57.1)
Female	160 (50.3)	12 (42.9)
Marital Status		
Single	206 (64.8)	23 (82.1)
Married	112 (35.2)	5 (17.9)
Education Level		
No formal Education		3 (10.7)
Primary School		13 (46.3)
Secondary School		10 (35.7)
Tertiary Education		2 (7.1)
Employment Status		
Yes		16 (57.1)
No		12 (42.9)
Family Income		
0-10000		4 (19)
10001-20000		11 (52.4)
20001-30000		5 (23.8)
30001-40000		0
40001-50000		1 (4.8)
Did not know		

4.5 Medical and Surgical Specialties Utilizing CLP services

As shown in figure 3, more than a half of the referrals in 2016/2017 were from the departments of Internal medicine (33.96%), and the Obstetrics and Gynaecology department (22.64%). Other departments that utilized CLP services frequently were Neurosurgery (8.81%), General Surgery (7.55%), Orthopedic surgery (7.55%), Paediatrics (6.92%) and ENT (6.29%). During the month of June 2018, more than a half of the consultations were also from the departments of internal medicine (28.57%), the burns unit (17.86%), ENT and obstetrics and Gynaecology, each contributing to 14.29%. There were no consultations from Orthopaedic, Paediatric, Cardiothoracic and Maxillofacial surgery.

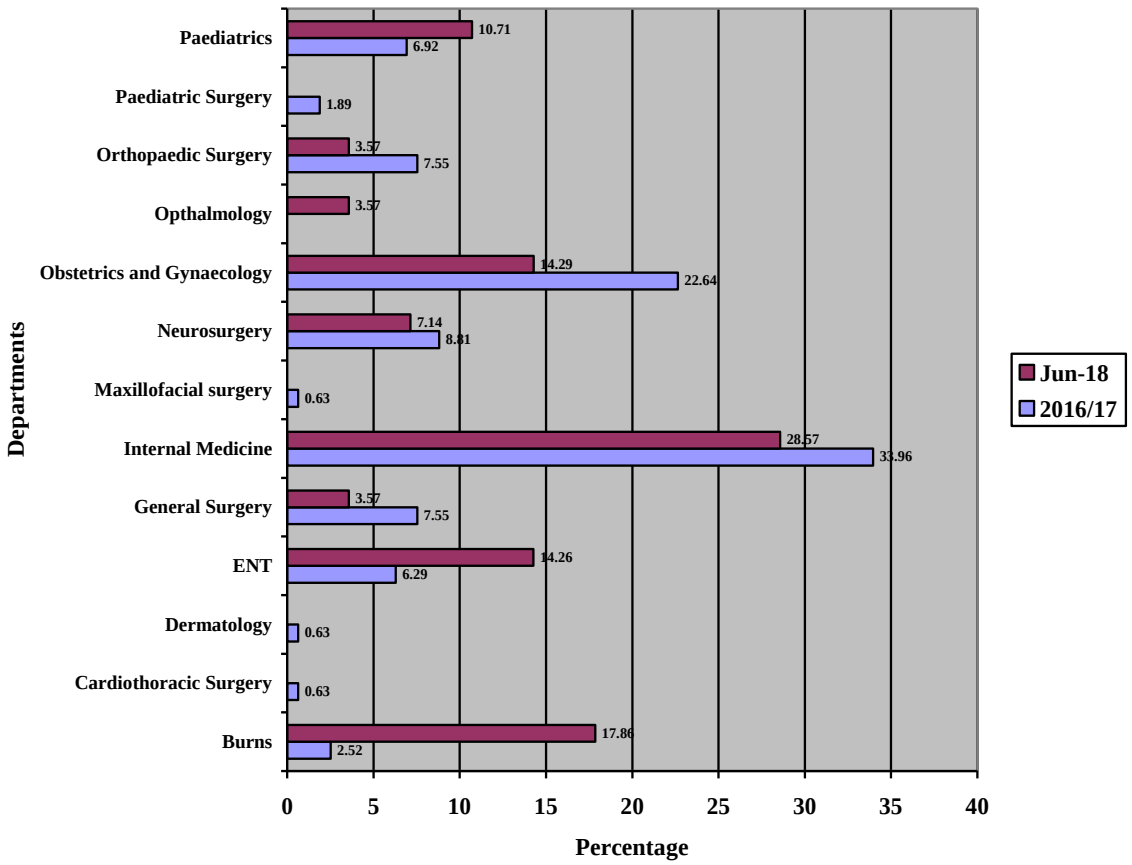


Figure 3. Consulting departments

4.6 Reasons for Psychiatric Consultations

In 2017-2018, the commonest reasons for consultation were low mood (14.5%), suicidal attempts (12.6%), psychosis (8.8%) and a previous history of psychiatric illness (8.2%). Other common reasons were alcohol use (6.9%), abnormal behaviour (6.9%) and suicidal ideation (5.7%). In June 2018, the commonest reasons for consultation were abnormal or bizarre behaviour (28.6%) and suicidal attempt (17.9%). Other reasons were anxiety, irritability, psychosis and suicidal ideation, as shown in table 3.

Table 3

Reasons for Consultation

Reason/ Frequency	**2016-2017**	**June 2018**
Abnormal/ Bizarre Behaviour	22 (6.9)	8 (28.6)
Alcohol Use	22 (6.9)	0
Altered Sensorium/ Disorientation	10 (3.1)	0
Anxiety	12 (3.8)	2 (7.1)
Confusion	10 (3.1)	1 (3.6)
Delayed Milestones	6 (1.9)	0
Hallucinations	16 (5)	1(3.6)
Insomnia	8 (2.5)	1 (3.6)
Irritability	16 (5)	2 (7.1)
Low mood / Depression	46 (14.5)	1 (3.6)
Medically Unexplained Symptoms	12 (3.8)	1 (3.6)
Need for counselling- On diagnosis, pre-surgery, post trauma e.t.c.	4 (1.3)	0
Other Substance Use	10 (3.1)	0
Past Psychiatric History	26 (8.2)	0
Psychosis	28 (8.8)	2 (7.1)
Queried/ Suspected Sexual Assault	4 (1.3)	1 (3.6)
Suicidal Attempt	40 (12.6)	5 (17.9)
Suicidal Ideation	18 (5.7)	2 (7.1)
Suspected Abuse (Child)	2 (0.6)	0
Violence	6 (1.9)	1 (3.6)
Total	318 (100)	28 (100)

4.7 Primary Medical Conditions in patients utilizing CLP Services.

In 2016/2017, the commonest primary conditions were trauma (19.5%), pregnancy and puerperal conditions and states (15.7%), infectious diseases (11.3%), cancers (10.7%),

and acute poisoning (10.7%). In June 2018, the commonest primary conditions were burns (17.9%), trauma (14.4%), acute poisoning (7.2%), cancer (7.2%), infectious diseases (7.2%) and pregnancy related conditions (7.2%), as shown in table 4.

Table 4

Primary Medical Conditions in Patients Utilizing CLP

Diagnosis/ Frequency	**2016-2017**	**June 2018**
Acute Poisoning	34 (10.7)	2 (7.2)
Anemia	4 (1.3)	1 (3.6)
Burns	8 (2.5)	5 (17.9)
Cancers, Neoplasms	34 (10.7)	2 (7.2)
Chronic Obstructive Pulmonary Disease	4 (1.3)	1 (3.6)
Cardiovascular Conditions: Hypertension, Heart Failure, Coronary Artery Disease, Cardiovascular Accidents	26 (8.2)	1 (3.6)
Congenital conditions	4(1.2)	0
Dermatological conditions	2 (0.6)	0
Diabetes Mellitus	6 (1.9)	2 (7.2)
HIV	10 (3.1)	2 (7.2)
Liver Disease	6 (1.9)	0
Malnutrition	4 (1.3)	0
Neurological conditions: Prolapsed Inter-vertebral Disc, paralysis.	12 (3.7)	0
Other Infectious Conditions (TB, Meningitis, Post Abortal Sepsis, Pelvic Inflammatory Disease, enteritis, pneumonia etc)	36 (11.3)	2 (7.2)
Pregnancy and Puerperal conditions and states	50 (15.7)	2 (7.2)
Renal Failure	0	1 (3.6)
Sexual Assault and Rape	2 (1.3)	1 (3.6)
Seizure disorders, Epilepsy	12 (3.8)	2 (7.2)
Trauma (Fractures, Head Injury, Neck Injury, Abdominal Injuries, Road Traffic Accidents)	62 (19.5)	4 (14.4)
Total	318 (100)	28 (100)

4.8 Psychiatric Diagnoses

From figure 4, the commonest diagnoses made among patients referred to CLP in 2016/2017 were depression (24.5%), alcohol use disorders (9.7%), puerperal psychosis (6.6%), Bipolar Mood Disorder (6.6%), anxiety (6.3%), schizophrenia (6%), delirium

(5.3%) and substance use disorders (4.7%). In 11.3% of the patients, there was no psychiatric diagnosis made.

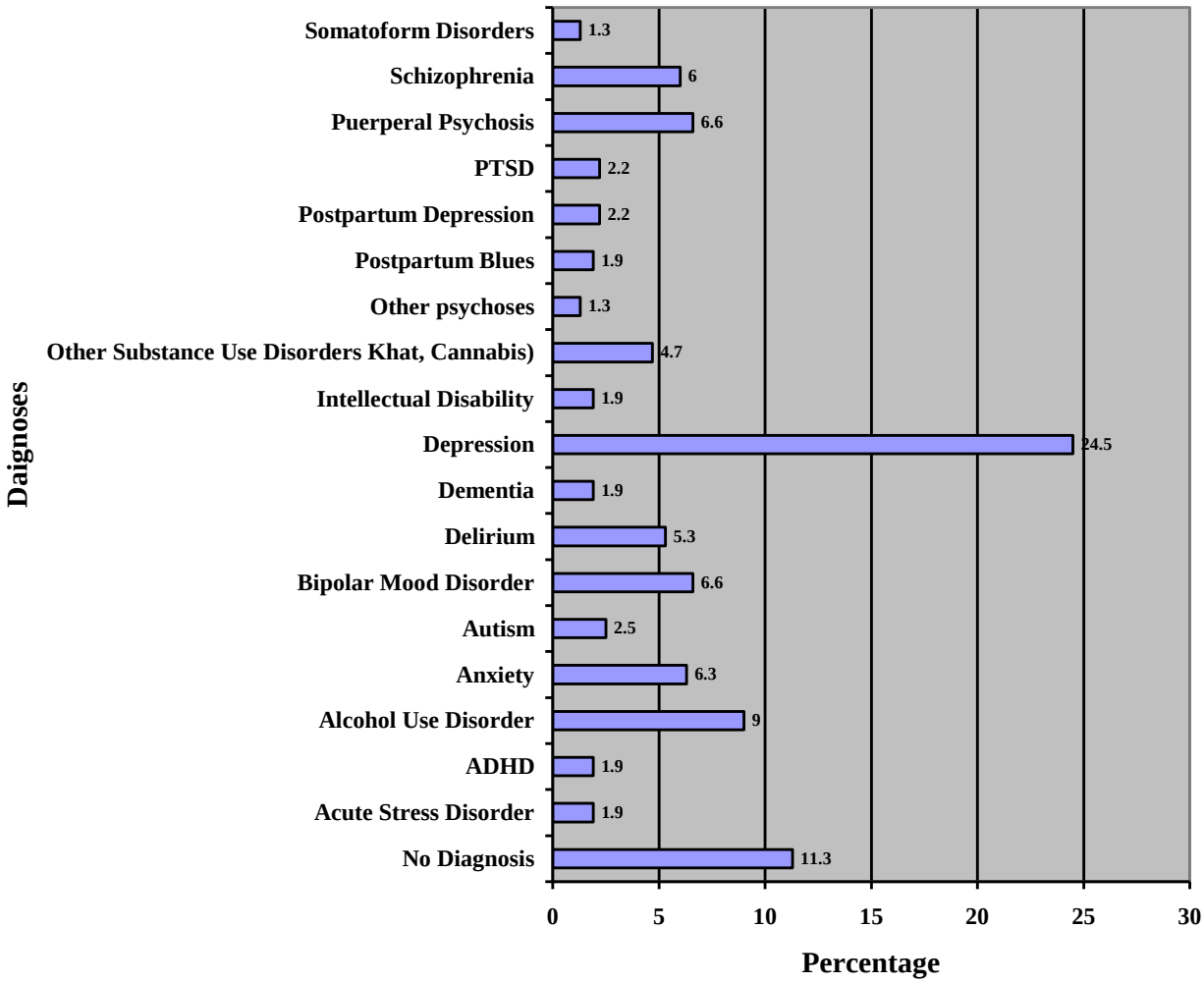


Figure 4. Psychiatric diagnoses made in 2016/2017

In June 2018, the commonest diagnosis made was major depressive episode (46.4%), which was similar to that from the 20126/2017 secondary data. More than a third (35.7%) of the patients had suicidality. The other common diagnoses were manic episode (28.6%), psychotic disorder (28.6%) and alcohol use disorder (21.4%). There were no patients with Anorexia or Bulimia Nervosa, social phobia or panic disorders. One patient (3.6%) had no psychiatric diagnosis. This is represented in table 5.

Table 5

Diagnoses Made Using the MINI 6.0 Tool in June 2018

Diagnosis		Frequency
Major Depressive	Current	10 (35.7)
Episode (MDE)	Past	3 (10.7)
	High	4 (14.3)
Suicidality	Moderate	2 (7.1)
	Low	4 (14.3)
Manic Episode	Current	4 (14.3)
	Past	4 (14.3)
Hypo-manic Episode	Current	1 (3.6)
Hypo-manic Symptoms	Past	2 (7.1)
Obsessive Compulsive Disorder (OCD)		1 (3.6)
Post-Traumatic Stress Disorder (PTSD)		5 (17.9)
Alcohol Dependence		3 (10.7)
Alcohol Use Disorder		6 (21.4)
Substance Dependence (Glue/petrol, Tobacco)		2 (7.1)
Substance Use Disorder (Glue, Tobacco, Cannabis)		3 (10.7)
Mood disorder with psychotic Features	Current	3 (10.7)
	Lifetime	1 (3.6)
Psychotic Disorder	Current	4 (14.3)
	Lifetime	4 (14.3)
Generalized Anxiety Disorder (GAD)		1 (3.6)
Anti-social Personality Disorder (ASPD)		4 (14.3)
No diagnosis		1 (3.6)

Of the 28 patients to whom the MINI 6 Plus was administered, 18 had a diagnosis noted in the file (64.3%). A comparison of the diagnoses on the patient's file and those made using MINI 6.0 was made, and it showed that only 28% of the diagnoses were comparable. In 39% of the patients, the correct diagnosis was made, but multiple diagnoses or past symptoms that are related to the current diagnosis were missed, for example, manic episodes in patients with current symptoms of major depression. In 33% of the patients, the diagnosis made did not correspond to that made by the MINI 6 Plus tool. A comparison of the file diagnoses and those made using the standardized tool have been shown in table 6.

Table 6

Comparison of Diagnoses on File and those Made by the MINI 6.0 Tool

Diagnosis on Patient File	Diagnosis as per MINI 6.0
HIV Psychosis	Manic Episode (Current)
	OCD
	Mood disorder with psychotic features
Puerperal Psychosis	Manic Episode (Current)
	Mood disorder with psychosis
Schizophrenia	Hypo-manic symptoms (Past)
	Psychotic Episode (Current)
ADHD	Manic Episode (Current)
Puerperal Psychosis	MDE (Past)
	Manic Episode (Current)
Depression/ Dysthymia	MDE (Current)
Depressive Disorder	MDE (Current), Suicidality (Low)
	Manic Episode (Past)
	Alcohol and Tobacco use and dependence
	ASPD
Psychosis	ASPD
Mood disorder	MDE (Current), Suicidality (Moderate)
Anxiety	Panic attacks with no agoraphobia
	PTSD
	GAD
Mood disorder	MDE (Current), Suicidality (Moderate)
	Mania (Past)
Schizophrenia	MDE- Current, Suicidality (Low)
	Alcohol dependence and abuse
	Psychosis (Current)
Depression	MDE (Current)
	PTSD
	Alcohol Use
Psychosis	MDE (Current), Suicidality (High)
	Alcohol abuse
Mood disorder	MDE- Current, Suicidality (High)
Schizophrenia and Suicidality	Mania (Current)
	PTSD
	Psychosis (Current)
Psychotic disorder and suicidality	MDE (Past), Suicidality (High)
	Hypomanic symptoms- past
	Panic attacks with no agoraphobia
Psychotic disorder	Psychosis (Current)

4.9 Knowledge, Attitude and Practices of Resident Doctors

4.9.1 Demographic Characteristics

Table 7 represents the resident's demographic characteristics. More than a half were from the departments of Obstetrics and Gynecology (20.5%), Internal medicine (19%) and Paediatrics (18.5%). There were slightly more male than female respondents (50.5%). About a quarter of the students were in their third year of study (24.5%) and had worked for 3 years before their postgraduate studies (24%).

Table 7

Demographic Characteristics of Resident

		Frequency	Percentage
Department	ENT	22	11
	General Surgery	28	14
	Internal Medicine	38	19
	Neurosurgery	12	6
	Obstetrics and Gynaecology	41	20.5
	Orthopaedic Surgery	22	11
	Paediatrics	37	18.5
Sex	Female	99	49.5
	Male	101	50.5
Year of study	First	47	23.5
	Second	44	22
	Third	49	24.5
	Fourth	40	20
	Fifth	14	7
	Sixth	6	3
Years worked after undergraduate studies	One	27	13.5
	Two	47	23.5
	Three	48	24
	Four	38	19
	Five	20	10
	Six	12	6
	Seven	4	2
	Eight	4	2

4.9.2 Patterns of Psychiatric Consultations

To the question of frequency of encounter of psychiatric conditions by the resident doctors, Majority (91%) had encountered psychiatric conditions in their departments. Out of these, more than a half (54%) reported it to be often. This is represented in figures 5 and 6.

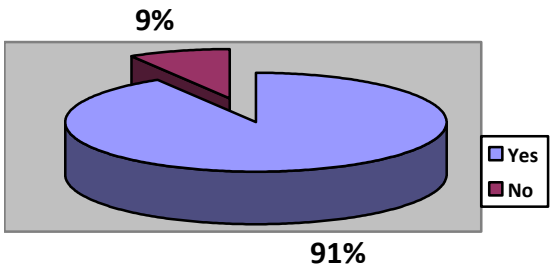


Figure 5. Encounter with psychiatric conditions

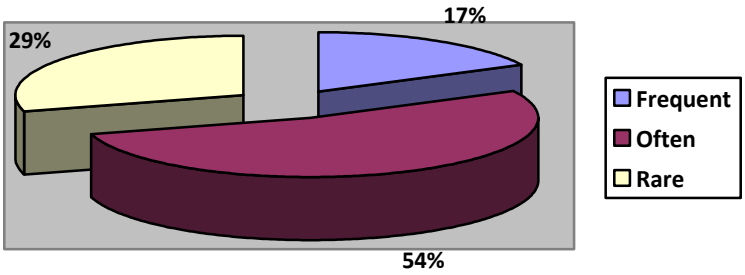
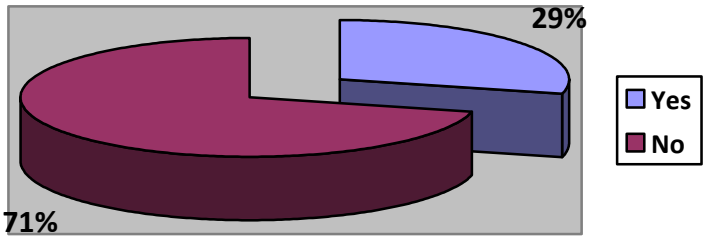


Figure 6. Frequency of encounter

More than two thirds (71%) of the respondents had asked for a psychiatric consult since beginning their studies, and out of these, 47% reported the consultations to be often and 46% rare, as represented in figures 7 and 8.



. *Figure 7.* Consultations made to CLP

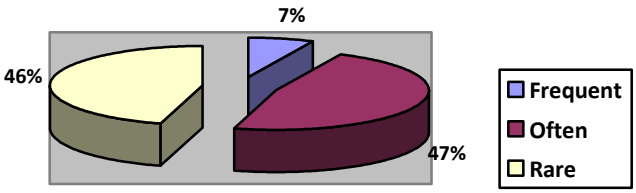


Figure 8. Frequency of consultation made

4.9.3 Common Psychiatric Diagnoses made by Resident Doctors

The residents were asked to list up to 5 of the conditions that they commonly encounter in their respective departments. The commonest diagnoses reported were depression (13.5%), alcohol use disorder (12.9%) and schizophrenia (7.6%).

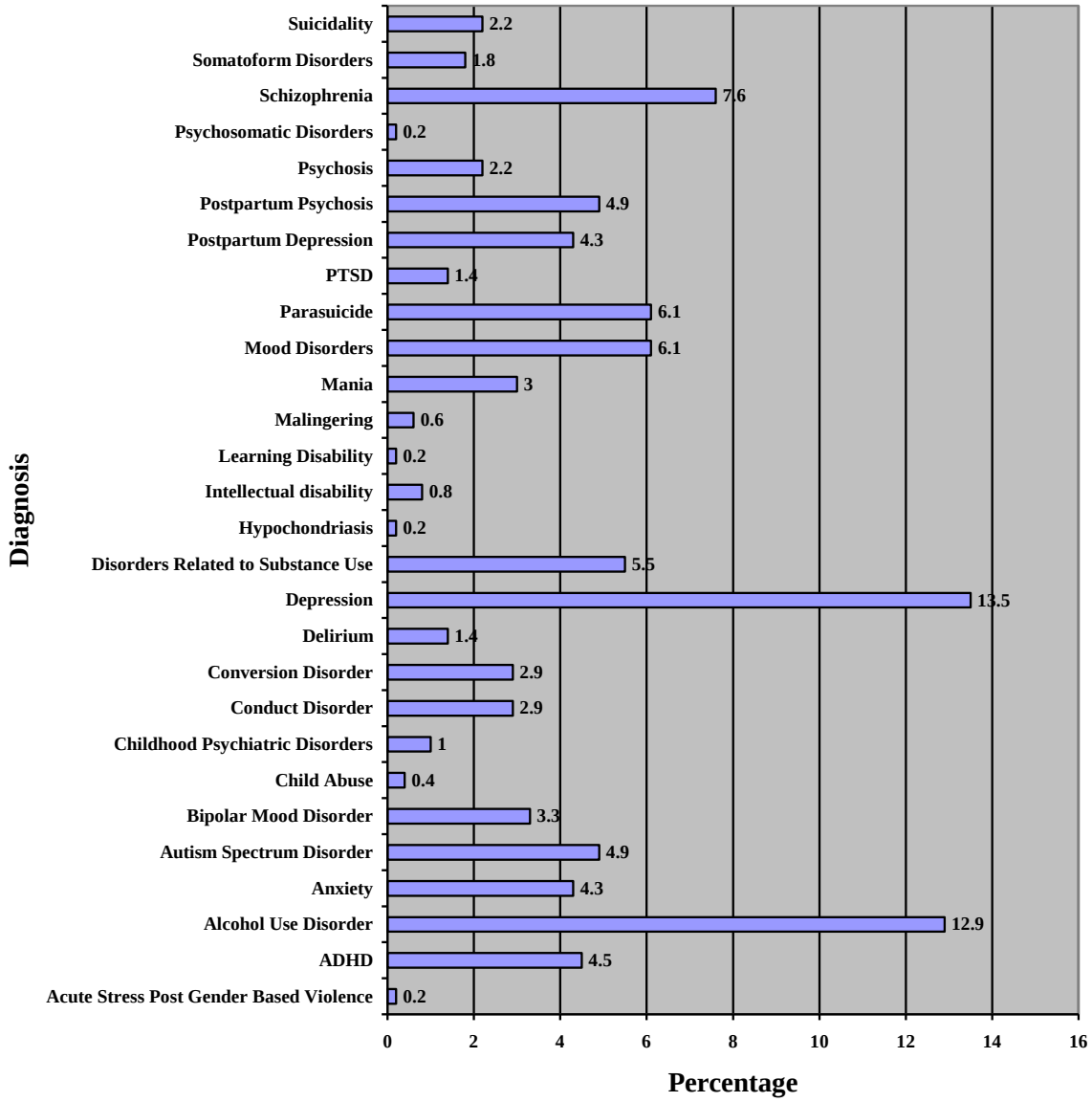


Figure 9. Common psychiatric diagnoses made by resident doctors

4.9.4 Opinion of Resident Doctors on Management of Psychiatric Illnesses

From figure 10, the majority of the doctors reported that they could recognize symptoms of psychiatric illness (81.5%). However, a smaller population knew the available treatment options for these illnesses (61%) and relevant investigations for the conditions (48.5%). Most of the doctors were not comfortable with initiating treatment for psychiatric illnesses (85.5%). More than a half (55%) of the doctors did not feel well equipped to recognize and manage the adverse effects of drugs used to treat psychiatric illnesses.

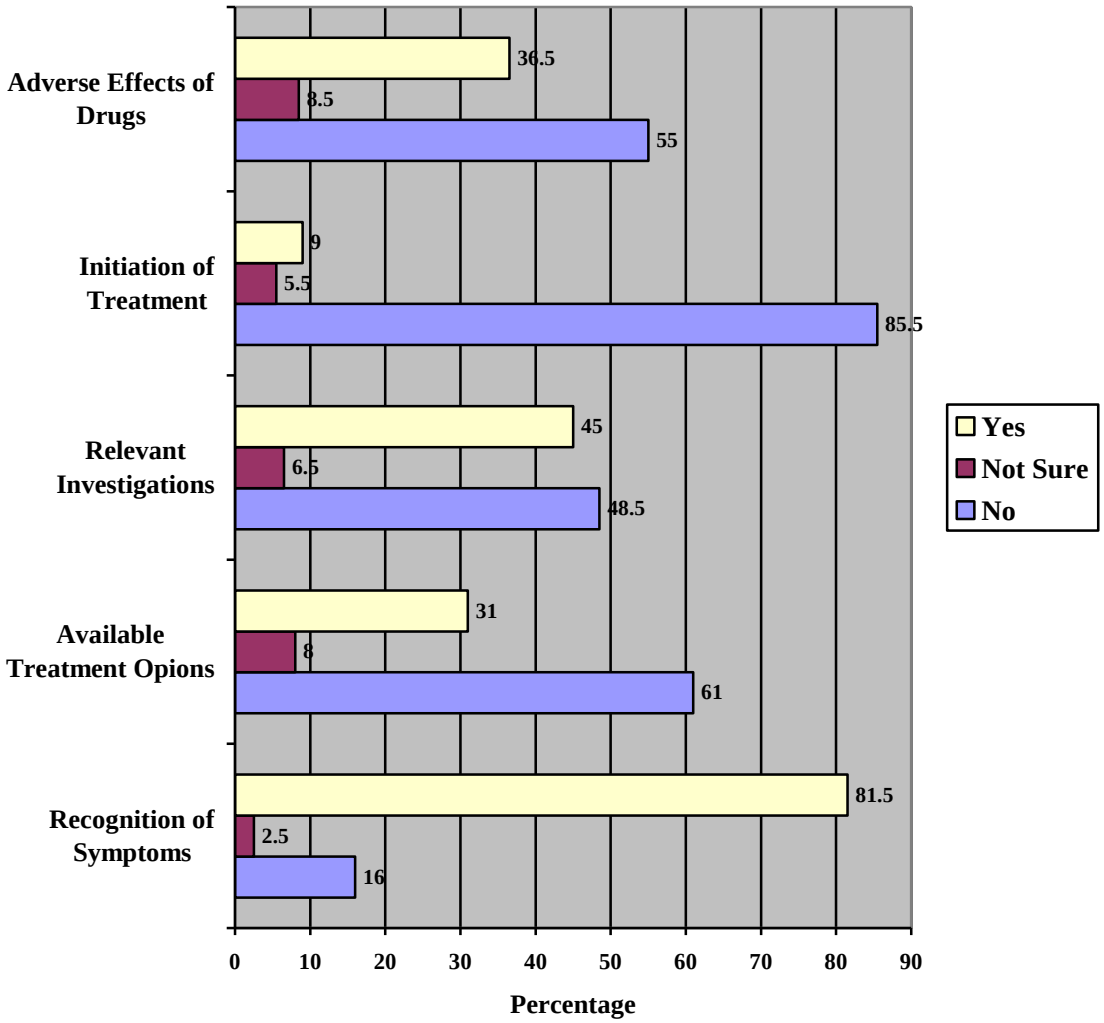
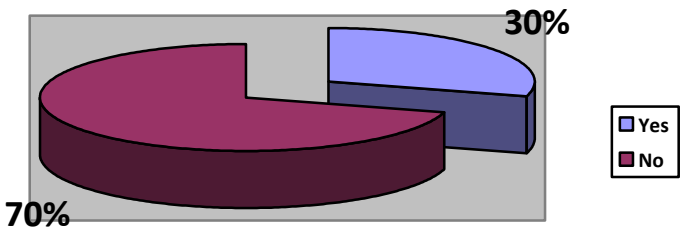


Figure 10. Knowledge of resident doctors on management of psychiatric illnesses

Majority of the students (70%) were of the opinion that their undergraduate psychiatry training was inadequate to equip them to handle psychiatric illnesses encountered during and after their internship, as shown in figure 11.



. *Figure 11.* Residents' opinion on adequacy of undergraduate psychiatry training

More than two thirds (68%) of the respondents had no psychiatry rotations during internship. Majority (78%) of the resident doctors were of the opinion that there was need for incorporation of psychiatry rotations during internship. This is represented in figures 12 and 13.

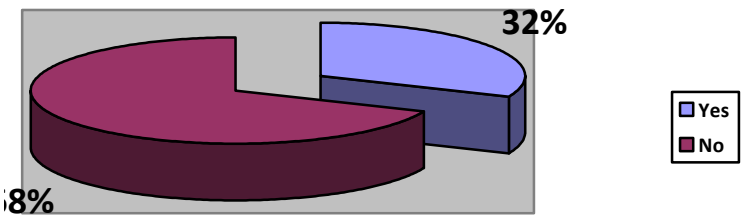


Figure 12. Psychiatry rotations during internship

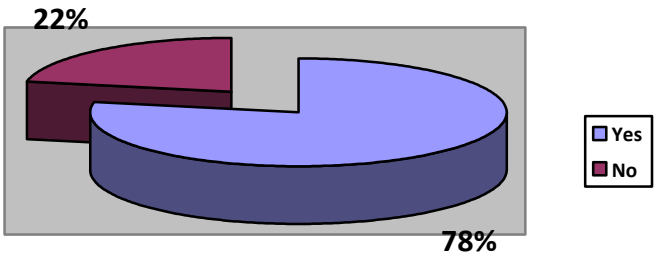


Figure 13. Opinion on need for psychiatry rotations during internship

About two thirds (63%) of the students report no direct contact with the psychiatry department during their postgraduate training. Of the students who reported having direct learning contact with the department of Psychiatry, 71% were of the opinion that the training they received did not offer adequate exposure for psychiatric conditions they encountered during their practice. The resident doctors who had no direct learning contact with the department of Psychiatry were asked if they were of the opinion that they would benefit from some form of training in Psychiatry during their studies, and 69% were of the opinion that they would. This is represented in figures 14, 15 and 16.

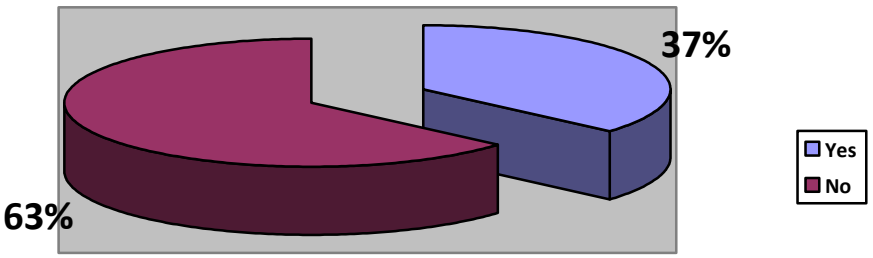


Figure 14. Psychiatry rotations during postgraduate training

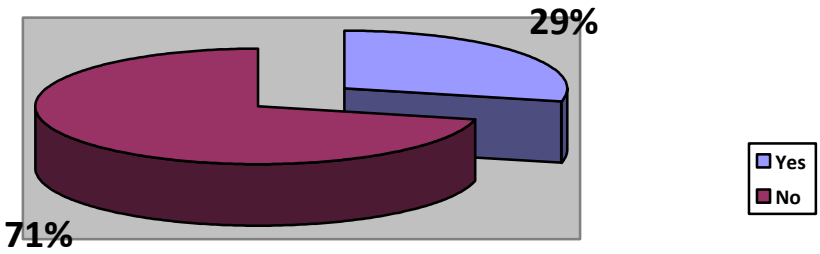


Figure 15. Adequacy of postgraduate psychiatry training

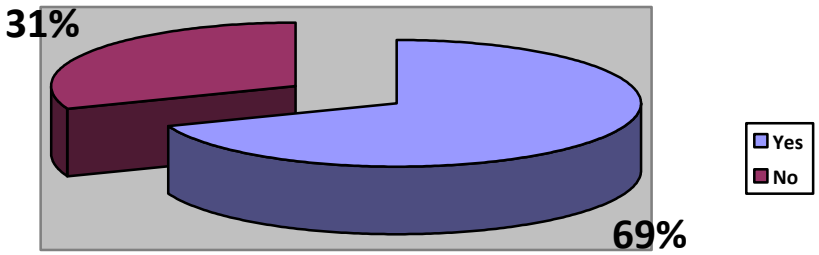


Figure 16. Residents 'opinion on need for psychiatry postgraduate training

About a third (31%) of the students reported to obtaining information relating to psychiatry online and a fifth (20%) from consultation with colleagues. Other common sources of information were undergraduate teaching (16%) and experience obtained before joining postgraduate school (15%). The other sources from which information were obtained were textbooks, Continuous Medical Education and Postgraduate Rotation experience. This is represented in figure 17.

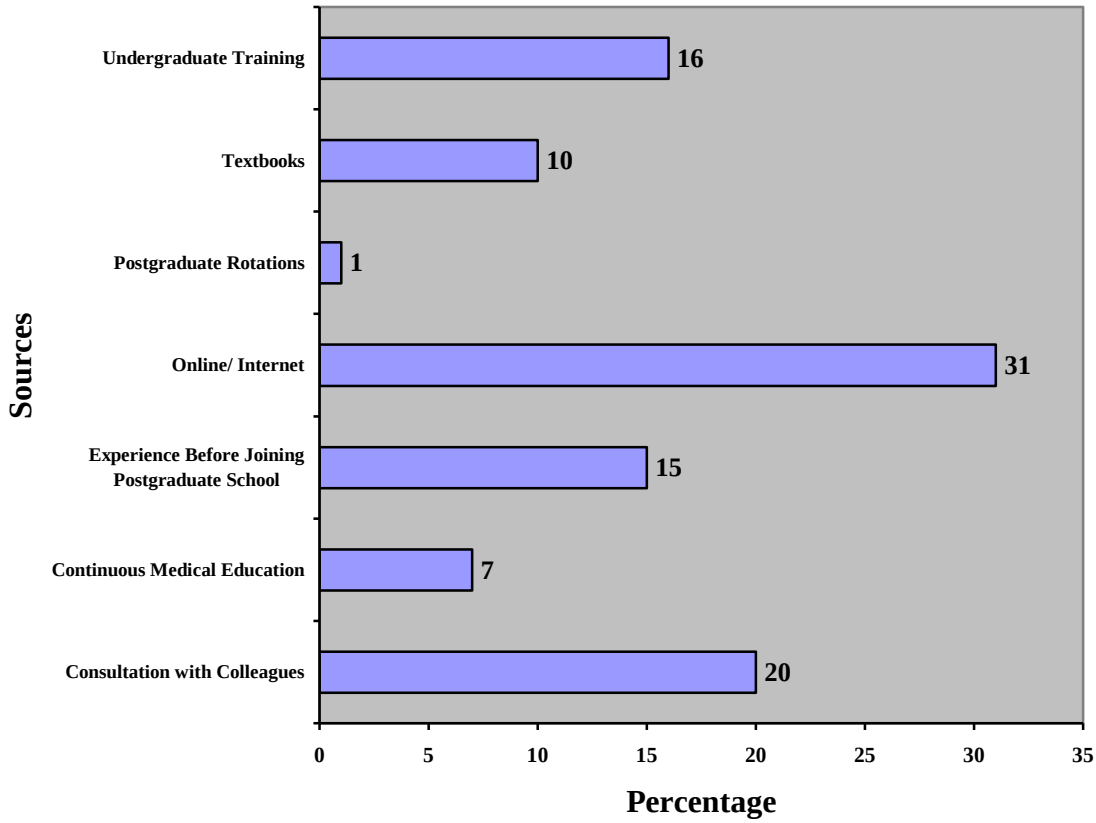


Figure 17. Sources of information

More than a half (57%) of the resident doctors chose Continuous Medical Education (CME) as their preferred form of mental health training, while 25% and 16% preferred incorporation of mental health into their curriculum and short rotations on mental health respectively, as shown in figure 18.

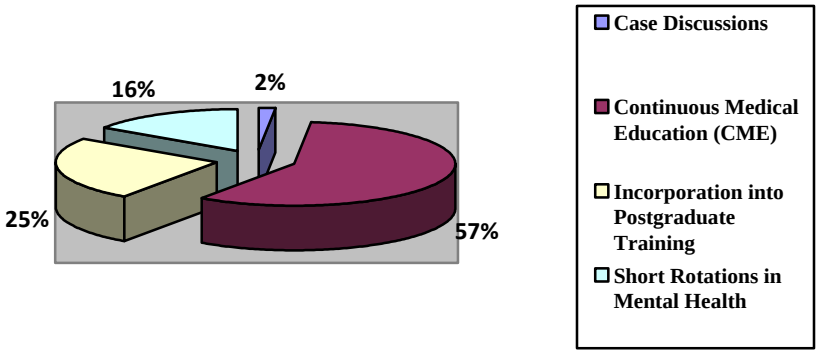


Figure 18. Preferred form of mental health training

4.9.5 Perception on Mental Health Stigma

Majority (83%) of the resident doctors were of the opinion that there is stigma against mental illnesses, while 9% perceived there to be no stigma. 8% reported that they were not sure about the matter.

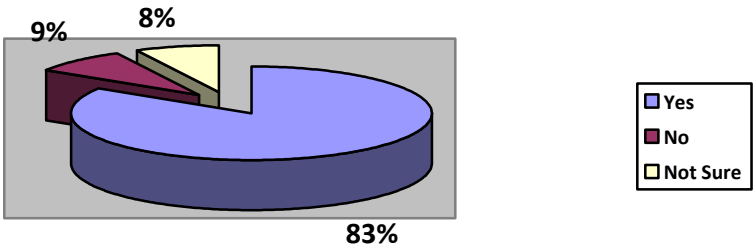


Figure 19. Perception on presence of stigma against mental illnesses

4.9.6 MICA Scores

Mental Illness: Clinician's Attitudes Scale (MICA) is a tool which consists of 6 items, each with 6 options to be chosen from and which have a score of between 1 and 6. The final score is obtained by summing up the individual scores, with possible scores of 16 to 96. A high score indicates a more negative (stigmatizing) attitude towards mental illness by the clinicians.

The minimum score among this cohort was 45, while the maximum score obtained was 65, with a mean of 52.05 and standard deviation of 3.252. These scores show an overall negative attitude by the clinicians towards mental illnesses.

Table 8

Descriptive Statistics for MICA Scores

Minimum, Maximum, Range	45 to 65 (16)
Mean	52.05
Standard Deviation	3.252
Median	52
Mode	53

Independent T Test was used to test for differences between in attitudes of resident doctors on the basis of sex, if they had psychiatry rotations during internship and if they have psychiatry trainings during their postgraduate training. Having psychiatry rotations during internship was the only variable found to be statistically significant ($p=0.000$).

Analysis of variance (ANOVA) was utilized to test for differences in clinician's attitudes as per the years of practice before joining postgraduate studies, their year of study and their specializing department. None of the three variables were found to be statistically significant. This is represented in table 9.

Table 9

Association between Demographic Variables and MICA Scores

Variable	Category	N	Mean(SD)	Group Differences
Gender	Male	100	52.09±3.32	t=-0.128;
	Female	98	52.03±3.23	*P*=0.899
Internship	Yes	63	51.49±3. 3	*t*=3.888;
Rotations in Psychiatry	No	137	53.25±2.83	***P*=<0.005**
Postgraduate	Yes	67	52.38±3.49	*t*=1.083
Training in Psychiatry	No	82	51.85±3.11	; *P*=0.281
Number of Years	One	27	53.48±2.44	$F_{(2,104)}$=0.532;
worked before joining Postgraduate	Two	47	52.19±3.00	*P*=0.809
	Three	48	51.23±2.46	
	Four	38	49.95±2.55	
	Five	20	51.20±3.71	
	Six	12	51.92±4.06	
	Seven	4	52.25±2.87	
	Eight	4	50.50±1.00	

Specialty	ENT	22	51.50±3.29	$F_{(2,104)}$=-0.714;
	General Surgery	28	52.43±3.07	*P*=0.639
	Internal Medicine	38	52.08±3.84	
	Neurosurgery	12	52.08±3.84	
	Obstetrics&Gynaecology	41	51.56±3.03	
	Orthopaedic Surgery	22	51.64±3.32	
	Paediatrics	37	52.81±3.13	
Year of Study	First	47	52.09±3.89	$F_{(2, 104)}$=0.78; *P*=0.996
	Second	44	52.16±3.17	
	Third	49	52.12±3.02	
	Fourth	40	51.98±3.28	
	Fifth	14	51.47±2.33	
	Sixth	6	52.4±3.65	

CHAPTER FIVE: DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a discussion of the findings of this study, in the context of the literature reviewed in the second chapter. It also presents the limitations of the research, conclusions drawn from study findings, and recommendations to the various relevant stakeholders and future researchers.

5.2 Discussion

5.2.1 Referral rate

The referral rate in this context represents the number of patients who utilized psychiatry services, as compared to the total number of patients at the hospital in a year, and this can be used to infer the frequency of utilization of the services. This study found that 0.42% and 0.2% of the total inpatients were referred to CLP in for 2016 and 2017 respectively. The former fall within the rates found in the literature reviewed, which ranged between 0.4 and 6.8%. The 0.4% rate was similar to that reported by Aghanwa (2002) in Fiji. The lower rate in 2017 could be explained by the doctors' strike that lasted for the first 3 months, as it is the resident doctors who mostly initiate the referral chain were on strike. Makanyengo et al. (2005) in a similar study reported a higher referral rate of 1.15%, but this included all patients referred to the KNH Patient Support Center and various psychiatry clinics, including the outpatients and patients sent who had been referred for Pre a Post HIV Counseling, whom the current study excluded.

5.2.2 Demographic characteristics of Patients utilizing CLP services.

The range in this study was 2 to 86 years. This comparable to range reported in previous studies of 1 to 99 years (Keertish et al. (2013) and Lücke et al. (2017). The mean age of respondents in this study was 26.46±10.55 and 30.65±14.96 for the 2016/2017 and June 2018 data respectively. This is slightly lower than the mean of 31.74 to 38.75 that was reported in majority of the previous studies (Aghanwa, 2002; Al Habeeb et al., 2002; Ajiboye & Adekelan, 2004; Alhamad et al., 2006; Manabendra & Uttam, 2013; Risal & Prasad, 2013; Keertish et al., 2013; Copello et al., 2013). The mean was similar to that found by Al Habeeb et al. (2002) and Kumar and Anushanemani (2015) who reported mean ages to be 25.99 and 28.5 years respectively. The age categories finding showed the largest number of respondents were 20-29 years old representing 40.3 and 50% for the 2016/2017 data and 30-39 years old representing 24.5 and 25% for the June 2018 data. This distribution is similar to that reported by Kumar and Anushanemani (2015) who reported that 87.3% of the patients were between 15 and 45 years. Bhoghale et al. (2000) also reported that 70% of the patients were in the same category.

In 2016/2017, slightly above half of the patients referred to CLP were female (50.3%). This is similar to findings from prior studies that there were more female patients, ranging between 51.28 and 72.3% , specifically 55.3% by Ajiboye and Adelekan (2004), 55.1% by Fariduzzaman et al.(2012), 54.3% by Arbabi et al. (2012), 54.6% by Risal and Prasad (2013), 51.8% by Juhás and Agyapong (2016), 56.7% by Onofa (2014) , 51.28% by Kumar and Anushanemani (2015), and 60% by Lücke et al.(2017). However, among the patients referred in June 2018, there were more males than females referred to CLP (57.1% versus 42.9%) respectively. This is similar to the findings by Grover et al. (2015)

who reported 60.3% of the patients were male and by Vijay and Uddey (2017) who reported that 55.9% of the patients were male.

Majority of the patients were single (64.81 and 82.1% in 2016/2017 and June 2018 findings respectively). This finding is similar to that reported by Sharp et al, 2011 of the patients were unmarried, but contrasting to other studies with findings of there being more married patients among this population group. (54.7% by Bhogale et al. (2000), 49% by Ajiboye and Adelekan (2004) and 63.6% by Arbabi et al (2012)). These differences could be due to dissimilarity in other socio-demographic characteristics, such as age, among the studied populations.

In this study, majority of the patients had at least a primary school (57.1%) and secondary school (35.7%) education. This is similar to what was found in other studies, which reported a majority of the patients having a basic education or were educated or literate; 93.8% were literate as reported by Bhogale et al (2000), Ajiboye and Adelekan (2004) reported that at least 21% had attained secondary school education. 86.5% had a basic education, as reported by Arbabi et al. (2012) and Onofa (2014) reported that 59.4% were educated.

Over a half (57.1%) the patients in this study were employed. This finding was contrary to prior studies, which reported that majority of the patients referred to CLP were unemployed. Christodoulou et al. (2008) reported 64.4% of the patients were housewives, Sharp et al. (2011) reported that only 35.8% were employed and Onofa et al. (2014) reported that 52.7% were unemployed.

As pertaining to the patient's economic status, 52.4% reported to have a monthly family income of 10,001 and 20,000 Kenyan shillings, which, as per the Kenya National Bureau of Statistics classification falls in the lower income earners group. This finding is similar to that reported by Yousafzai et al. (2015) and Kondaparthi et al. (2013) in which 53% of the patients to be of low socio-economic standings.

5.2.3 Source of referrals utilizing CLP Services.

From this study, a third of referrals were from Internal Medicine (33.96%) while over a fifth (22.6%) were from Obstetrics and Gynaecology. Although internal medicine accounted for the largest amount of referrals, it was lower than that reported in other studies. Lücke et al. (2017) reported a high referral from internal medicine of 90%, while Kumar and Anushanemani (2015) reported an 84.6% referral rate from the same department. The referrals from obstetrics and gynaecology were similar to the 21.3% recorded in Saudi Arabia by Alhuthail (2009). Other studies, however, reported much lower referrals from this department: 9% by Ajiboye and Adelekan (2004), 3.3% by Singh et al. (2009), 3.3% by Keertish et al. (2013) and 5.1% by Vijay and Uddey (2017).

5.2.4 Reasons for Psychiatric Consultations

The reasons for referrals were numerous, the most frequent were patients presenting with symptoms of low mood (14.5% in 2016/2017), evaluation after a suicidal attempt (12.6% in 2016/2017 and 17.9% in June 2018), psychosis (8.8% in 2016/17 and 7.1% in June 2018), a previous history of psychiatric illness (8.2% in 2016/17), alcohol use (6.9% in 2016/17), and abnormal or bizarre behavior (6.9% in 2016/17 and 28.6% in June 2018). This corresponds to the reasons that were cited in prior studies in various continents.

Christodoulou et al. (2008) reported psychotic symptoms (41.3%), suicide attempts (22.1%), past psychiatric history (18%), disruptive behavior and non-compliance (4.9%) and unexplained medical symptoms (8%) as being the commonest reasons for liaison consultations in Greece. Manabendra and Uttam (2013) reported that the commonest reasons for consultations in a hospital in Delhi were a suicide attempt (30.3%), altered sensorium (15%) and alcohol and other drug abuse and dependence in 9.8% of the cases. Keertish et al. (2013) still in an Indian teaching hospital reported that 23% of the consultations to liaison psychiatry were due to medically unexplained symptoms, 21% for abnormal behavior and 13.1% for substance abuse. Nkporbo et al. (2014) reported that deliberate self-harm, intellectual disability and substance abuse and its complications were the commonest reasons for consultations in Ghana.

5.2.5 Co-morbid conditions in patient utilizing CLP services

The co-morbid conditions of the patients referred to CLP were numerous, but the commonest in 2016/17 were physical injuries after trauma (19%), pregnancy and puerperal conditions and states (15.7%), infectious diseases (11.3%), cancer (10.7%), acute poisoning (10.9%) and burns (17.9%) in June 2018. This finding was complementary to that reported by various studies around the world. Ajiboye and Adelekan (2004) reported that 31.9% of the co-morbid conditions were infections (typhoid enteritis, TB, HIV encephalopathy, puerperal sepsis), 14.9% neurological disorders (seizures, quadriplegia, spinal cord injury) and 10.6% obstetric conditions. Risal and Prisad (2013) found out that the commonest co-morbid conditions among patients who utilized CLP services in an Indian teaching hospital included acute poisoning (30.5%) and alcoholic liver disease (12.7%). Nkporbo et al. (2014) reported

acute poisoning, hypertensive disease, CVD, complicated DM, HIV encephalopathy, and head injury as the commonest primary conditions among referred patients.

5.2.6 Psychiatric diagnoses made by Consultation Liaison Psychiatrists

In this study, the commonest psychiatric diagnoses made were depression, alcohol use disorders, puerperal psychosis, Bipolar Mood disorder, anxiety and schizophrenia. This is consistent with the diagnoses reported in previous studies. Ansseau et al. (2004) documented that the most frequent disorders in a Belgian adult primary care population were mood disorders (31%), anxiety disorders (19%), somatoform disorders (18%) and alcohol abuse or dependence (10.1%). Manabendra and Uttam (2013) reported the commonest diagnoses as being depression, alcohol and other substance use, BMD, personality disorders, schizophrenia, adjustment disorder, and acute psychosis. Kumar and Anushanemani (2015) also had a similar disease pattern, the commonest diseases being alcohol withdrawal (21%) and depression (14%).

Makanyengo et al. (2005) reported the commonest psychiatric diagnoses made at KNH were alcohol related disorders, acute and transient psychoses, depressive disorders, dissociative and conversion disorders, and dementia. This study had few patients with conversion, dissociative disorders, and dementia, and this could be explained by the differences in the two study population. Makanyengo et al. (2005) included patients referred from the hospital's casualty and those seen in other psychiatry clinics within the hospital, such as the youth and adolescent clinics.

A comparison of the diagnoses made using the MINI 6 Plus tool and those extracted from patients clinical records files showed that 28% were corresponding, 39% were

corresponding to multiple diagnoses, however past symptoms important to the current diagnoses had been missed, and 33% had diagnoses that were not corresponding. This therefore brings up gaps and discrepancies in the diagnoses made by Consultation Liaison psychiatrists, suggesting that there is need to adopt a more standardized diagnostic tool on first contact with the referred patients.

5.2.7 Knowledge, attitude and practices toward psychiatric treatment and referral patterns by non-psychiatric doctors.

A total of 200 resident doctors from 7 departments completed the online questionnaire. Majority 81.5% of the doctors could recognize symptoms of psychiatric illnesses and make a diagnosis while 45% had information on the relevant investigations, 31% on the available treatment options, and 36.5% on the adverse effects of psychotropic medications. Only 9% of the interviewed clinicians were comfortable initiating treatment for patients diagnosed with mental illnesses. This finding is similar to the findings by Chaudhary and Mishra (2009) who reported that majority of the non-psychiatric doctors in Punjab had poor knowledge and skills for diagnosis and treatment of mental illnesses. Wakil et al. (2013) in Nigeria had almost homogeneous findings, in that majority of the doctors could recognize symptoms and initiate treatment, but only 10% knew about treatment options beyond medication. Liu et al. (2009) similarly found out that majority of physicians reported incomplete knowledge and skills, and this led to reduced confidence in managing patients with depression.

Of the seven departments that were studied, only two (Internal medicine and Pediatrics) have a rotation in psychiatry, each for a period of two months. Despite the rotations, 71% of the doctors were of the opinion that they did not find the exposure adequate enough to

equip them to handle mental illnesses in their practice. This is comparable to findings by Al-Osaimi and Al-Haidar (2008) that studied a group of pediatricians in Riyadh and found that a significant number reported lack of adequate training in child psychiatry, which led to poor clinical skills when faced with childhood psychiatry disorders.

The average MICA score of 52.05 obtained from the resident doctors was above half the total score of 96, suggesting a negative (more stigmatizing) attitude towards mental illnesses than what would have been expected among health care professionals, given the exposure and knowledge they have. This is similar to what was reported by Alhamad et al. in 2006. Negative attitudes among these clinicians could lead to minimal referrals for the psychiatric consultation, as shown in this study of 0.4 and 0.2% in 2016 and 2017 respectively. The only variable that was found causing a significant difference in the mean MICA scores was having a psychiatry rotation during internship, showing that these rotations ameliorated the doctor's attitudes towards mental illnesses.

5.3 Conclusion

This study found that there was poor utilization of Consultation Liaison services at KNH. The departments commonly utilizing the services were Internal Medicine and Obstetrics and Gynecology. Reasons for referral that were repeatedly identified were low mood, evaluation after a suicidal attempt, psychosis, a previous history of psychiatric illness, alcohol use, abnormal or bizarre behavior and suicidal ideation. The most common co-morbid conditions of patients referred to CLP were trauma, pregnancy and puerperal conditions and states, infectious diseases, cardiovascular conditions, burns, cancer and acute poisoning. The commonest psychiatric diagnoses of patients referred to psychiatry were depression, alcohol use disorders, puerperal psychosis, Bipolar Mood disorder,

anxiety and schizophrenia. There is a good grasp of knowledge in identification of mental illness, but most of the doctors were less knowledgeable when it came to relevant investigations, available treatment and adverse effects of psychotropic drugs. Very few doctors were comfortable initiating treatment for mental illnesses. A negative (stigmatizing) attitude was found among the resident doctors, which could contribute to low referral rates and lead improper treatment of mental illnesses.

5.4 Recommendations

1. The Consultation Liaison Psychiatry Department need to:

a) Adopt a more efficient way of receiving consultations, so that the patients can be attended to in a timely manner. The current system involves dropping consults to the department, awaiting the doctor on call to physically come and pick up the consultation sheets. This sometimes takes more than a day before they are responded to.

b) Devise a computerized system for better record keeping, from the time consultations are received to ensure that all vital information (such as in patient number, name, ward and bed) is captured for adequate follow up of patients.

c) Adopt a concise standardized diagnostic tool so as to be able to ensure that all diagnoses and symptoms are picked on initial evaluation of referred patients.

2. The College of Health Sciences/ Department of Psychiatry should organize for regular continuous medical education sessions on mental health and common illnesses among

their postgraduate student population to enable better identification of disorders and management in the various departments.

3. The Ministry of Health / Kenya Medical Practitioner and Dentists Board need to incorporate Psychiatry rotations into their internship program, as this study has shown that resident doctors who went through a rotation in psychiatry have a less negative attitude towards mental illnesses.

4. Further research need to be undertaken on mental health stigma among health providers, and how to ameliorate it, as negative attitudes towards mental illnesses could lead to poor management and low referral rates.

5.5 Limitations

1. Part of the data used for this study was secondary, and thus had, as expected, a number of gaps. It was difficult to retrieve all the patient files as some of the requests received did not have the in Patient numbers that were used for identification by the personnel at the records department. Some of the patient files were also not well documented, in some cases the consultation had not been noted down or noted down illegibly, some missed the diagnosis, among other discrepancies.

2. The psychiatric diagnoses given in the patient files did not use a specific diagnostic classification, thus the researcher had to group similar diagnoses, and this could have led to bias.

REFERENCES

Abiodun, O., Ogunremi O. (1990). Psychiatric morbidity in medical and surgical wards of a Nigerian general hospital. *Journal of Psychosomatic Research.* Volume 34(4), 409 – 414.

Aghanwa H. (2002). Consultation-liaison psychiatry in Fiji. *Pacific Health Dialog.* 9(1), 21-8.

Aghanwa, H., Morakinyo, O., & Aina, O. (1996). Consultation-liaison psychiatry in a general hospital setting in West Africa. *East African Medical Journal*, 73(2), 133–136.

Ajiboye, P., & Adelekan, M. (2004). A prospective analysis of in-patient consultation-liason psychiatry in a Nigerian teaching hospital. *East African Medical Journal*, 81(12), 620–625.

Alhamad, A. M., Al-Sawaf, M. H., Osman, A. A., & Ibrahim, I. S. (2006). Differential aspects of consultation-liaison psychiatry in a Saudi hospital. I: Referral pattern and clinical indices. *Eastern Mediterranean Health Journal*, 12(3–4), 316–323.

Alhamad, A. M., Al-Sawaf, M. H., Osman, A. A., & Ibrahim, I. S. (2006). Differential aspects of consultation-liaison psychiatry in a Saudi hospital. II: Knowledge and attitudes of physicians and patients. *Eastern Mediterranean Health Journal*, 12(3–4), 324–330.

Al-Habeeb, T. A. (2002). A comparison of psychiatric referrals within the teaching hospital with those from primary care and general hospitals in Saudi Arabia. *Journal of Family & Community Medicine*, 9(3), 57–65.

Alhuthail, Y. R. (2009). Timing of Referral to Consultation-Liaison Psychiatry. *International Journal of Health Sciences*, 3(2), 175–170.

Al-Osaimi, F. D., & Al-Haidar, F. A. (2008). Assessment of pediatricians' need for training in child psychiatry. *Journal of Family and Community Medicine*, 15(2), 71–75.

Ansseau, M., Dierick, M., Cnockaert, P., Smedt, J. D., Haute, M. V., & Mijnsbrugge, D. V. (2004). High prevalence of mental disorders in primary care. *Journal of Affective Disorders*, 78(1), 49-55.

Arbabi M., Laghayeepoor R., Golestan B., Mahdanian A., Nejatisafa A., Tavakkoli A., … Mohammadi MR. (2011), Diagnoses, requests and timing of 503 psychiatric consultations in two general hospitals. *Acta Medica Iran,* 50(1), 53-60.

Athokpam R., & Mhetre B. (2015). A consultation liaison psychiatry at a tertiary hospital

in the north-eastern part of India. *Indian Journal of Psychiatry*, 57(5), 17-18.

Barrimi, M., Elghazouani, F., Aarab, C., Tliji, A., Rharrabti, S., Lahlou, F., … Aalouane, R. (2014). Experience of liaison psychiatry in Morocco: Transversal study over 24 months. The *Encephalon,* 40(5), 373-379.

Bhogale, G. S., Katte, R. M., Heble, S. P., Sinha, U. K., & Patil, B. A. (2000). Psychiatric referrals in multispeciality hospital. *Indian Journal of Psychiatry,* 42(2), 188–194.

Chapagai, M., Dangol, K., Ojha, S., Rana, M., & Tulachan, P. (2014). A descriptive study of referral in department of psychiatry in tertiary hospital in Nepal. *Journal of Psychiatrists' Association of Nepal,* 2(2), 22–25. https://doi.org/10.3126/jpan.v2i2.9721

Chaudhary, R. K., & Mishra, B. P. (2009). Knowledge and practices of general practitioners regarding psychiatric problems. *Industrial Psychiatry Journal*, 18(1), 22–26. http://login.research4life.org/tacsgr0doi_org/10.4103/0972-6748.57853

Christodoulou, C., Fineti, K., Douzenis, A., Moussas, G., Michopoulos, I., & Lykouras, L. (2008). Transfers to psychiatry through the consultation-liaison psychiatry service: 11 years of experience. *Annals of General Psychiatry*, 7(1), 10.

Copello A., Walsh K., Graham H., Tobin D., Griffith E., & Day E. (2013). A consultation-liaison service on integrated treatment: A program description. *Journal of Dual Diagnosis*. 9(2), 149-157. Retrieved from https://doi.org/http://dx.doi.org/10.1080/15504263.2013.777987

De Hert, M., Correll, C. U., Bobes, J., Cetkovich-Bakmas, M., Cohen, D., Asai, I., … Leucht, S. (2011), Physical illness in patients with severe mental disorders: Prevalence, impact of medications and disparities in health care. *World Psychiatry,* 10(1), 52–77. doi:10.1002/j.2051-5545.2011.tb00014.x

De Giorgio, G., Quartesan, R., Sciarma, T., Giulietti, M., Piazzoli, A., Scarponi, L., … Piselli, M. (2015). Consultation-Liaison Psychiatry- from theory to clinical practice: An observational study in a general hospital. *BioMed Central Research Notes*, 8(1), 475. http://doi.org/10.1186/s13104-015-1375-6

Engel G. (1977). The need for a new medical model: A challenge for biomedicine. *Science.* 196(4286), 129-36.

Fariduzzaman S., Bakar M, Biswas D., & Mujtaba S. (2013) Consultation-liaison psychiatry in a medical college hospital. *Bangladesh Medical Journal Khulna*, 46(1), 21-23.

Fulop G., & Flahavan, C. (2008). Providing a liaison psychiatry service in the absence of a consultant liaison psychiatrist. *Psychiatric Bulletin*, 32(8), 295–298.

Garekar H. (2015). Utilization and interventions in psychiatry consultation service in a general hospital in New Delhi, India. *Indian Journal of Psychiatry*, 57 (5), 87-88.

Ginés, J. M., Martín, M., Alvaro, P., García, B., Arcega, J. M., Nascimento, M. T., … Bulbena, A. (2013). Consultation-liaison psychiatry and antipsychotics. *European Psychiatry*, 28(1), 1-6. https://doi.org/10.1016/S0924-9338(13)77188-8

Gomez J. (1987). *Liaison Psychiatry- Mental Health Problems in the General Hospital*, 2nd edition, London: Croom Helm; 56.

Göktaş, K., Yilmaz, E., Kaya, N., & Akman, C. (2004). Bir eğitim hastanesinde istenen psikiyatri konsültasyonlarının değerlendirilmesi * Evaluation of referred psychiatry consultations at an education hospital. *Anadolu Psikiyatri Dergisi*, 7(1), 27–32.

Goyal S. G., Sagar R., & Sharan P. (2017). Sociodemographic profile and psychiatric diagnosis of patients referred to consultation-liaison psychiatric services of general hospital psychiatric unit at a Tertiary Care Center. *Journal of Mental Health and Human Behaviour*, 22(1), 45-49.

Grover, S., Sarkar, S., Avasthi, A., Malhotra, S., Bhalla, A., & Varma, S. K. (2015). Consultation-liaison psychiatry services: Difference in the patient profile while following different service models in the medical emergency. *Indian Journal of Psychiatry,* 57(4), 361–366.

Grover, S., Sahoo, S., Aggarwal, S., Dhiman, S., Chakrabarti, S., & Avasthi, A. (2017). Reasons for referral and diagnostic concordance between physicians/surgeons and the consultation-liaison psychiatry team: An exploratory study from a tertiary care hospital in India. *Indian Journal of Psychiatry*, 59(2), 170–175.

Guthrie, E. A., McMeekin, A. T., Khan, S., Makin, S., Shaw, B., & Longson, D. (2017). An analysis of whether a working-age ward-based liaison psychiatry service requires the input of a liaison psychiatrist. *British Journal of Psychiatry Bulletin*, 41(3), 151–155.

Huyse, F. J., Herzog, T., Lobo, A., Malt, U. F., Opmeer, B. C., Stein, B., … Tienari, P. (2001). Consultation-Liaison psychiatric service delivery: Results from a European study. *General Hospital Psychiatry*, 23(3), 124–132.

Jalloh A. (2016). *Pattern of psychiatric morbidities and gaps in diagnosis among patients at the Sierra Leone psychiatric hospital, Freetown* (Master's Thesis). Retrieved

from http://erepository.uonbi.ac.ke/handle/11295/97536

Jiang, R., Zhou, M., Dang, W., & Liu, C. (2009). Characteristics of consultation-liaison psychiatry in a psychiatric hospital in Beijing. *Chinese Mental Health Journal*, 9(11), 695.

Judd, F., Stafford, L., Handrinos, D., Laios, L., Breadon, C., Cornthwaite, L., … Bryant, C. (2010). Consultation-Liaison Psychiatry in a Maternity Hospital. *Australasian Psychiatry,* 18(2), 120–124.

Juhás M., & Agyapong V. I. O. (2016). Patients assessed by the liaison psychiatric team in the emergency department of a regional hospital in Canada - general characteristics and gender differences. *International Journal of Psychiatry in Clinical Practice,* 1501(5), 1–8.

Kagee A. (2008) Symptoms of Depression and Anxiety among a Sample of South African Patients Living with a Chronic Illness. *Journal of Health Psychology*, 13(4), 547 – 555.

Kassam A., Glozier N., Leese M., Henderson C., Thornicroft G. (2010). Development and responsiveness of a scale to measure clinicians attitudes to people with mental illness (medical student version). *Acta Psychiatrica Scandinavica*, 122(2), 153-161.

Keertish, N., Sathyanarayana, M. T., Kumar, B. G. H., Singh, N., & Udagave, K. (2013). Pattern of Psychiatric Referrals in a Tertiary Care Teaching Hospital in Southern India. *Journal of Clinical and Diagnostic Research : JCDR*, *7*(8), 1689–1691. http://doi.org/10.7860/JCDR/2013/6425.3238

Kigamwa A. (1991). Psychiatric morbidity and referral rate among medical in-patients at Kenyatta National Hospital. *East African Medical Journal*, 68(5), 383-8.

King, M., Nazareth, I., Levy, G., Walker, C., Morris, R., Weich, S., . . . Torres-Gonzalez, F. (2008). Prevalence of common mental disorders in general practice attendees across Europe. *British Journal of Psychiatry*, 192(5), 362-367). Retrieved September 01, 2017, from http://bjp.rcpsych.org/content/192/5/362.short

Kondaparthi, P., Ravinder, D., & Saikrishna. (2013). Patterns and profiles of referrals to psychiatry at a teaching hospital located in rural area. *Indian Journal of Psychiatry*, 55(5), 95-95.

Kumar G., & Anushanemani K. (2015). Inpatient Psychiatric Referrals to General Hospital Psychiatry Unit in a Tertiary Care Teaching Hospital in Andhra Pradesh. *IOSR Journal of Dental and Medical Sciences*, 14(1), 26-29.

Leigh, H., & Streltzer, J. (2015). *Handbook of Consultation-Liaison Psychiatry*.

University of California, San Francisco: Hoyle Leigh & Jon Streltzer

Lipowski Z. (1974) Consultation-liaison Psychiatry: An overview. *American Journal of Psychiatry,* 131(1), 623-30.

Lipowski Z. (1967). Review of consultation psychiatry and psychosomatic medicine: II Clinical aspects. *Psychosomatic Medicine*, 29(3), 201–224.

Liu S., Lu R., & Lee M. (2008). Non-psychiatric physicians' knowledge, attitudes and behavior toward depression. *Journal of the Formosan Medical Association*, 107(12), 921–31. https://doi.org/10.1016/S0929-6646(09)60015-2

Lücke, C., Gschossmann, J. M., Schmidt, A., Gschossmann, J., Lam, A. P., Schneider, C. E., … Müller, H. H. (2017). A comparison of two psychiatric service approaches: findings from the Consultation vs. Liaison Psychiatry-Study. *Bio Medical Central Psychiatry*, 17(8), 1171-4.

Lyne, J., O'Donoghue, B., Bonnar, M., Golden, D., McInerney, C., Callanan, I., & Ryan, M. (2010). Reasons for referral and consultation liaison psychiatry diagnoses. *Irish Journal of Psychological Medicine*, 27(3), 123–129.

Makanyengo M., Othieno C., & Okech V. (2005). Consultation liaison psychiatry at Kenyatta National Hospital, Nairobi. *East African Journal of Medicine,* 82(2), 79-84.

Manabendra M., & Uttam M. (2013). Psychiatric co- morbidity among referred in-patients and need for C-L psychiatry. *Delhi Psychiatric Journal*, 16(1), 120-127.

Munjal G., & Ahuja N. (2003). Consultation-liaison Psychiatry. In:Vyas JN,Ahuja N (2nd Edition), *Textbook of Postgraduate Psychiatry* (423-31). New Delhi: Jaypee Brothers.

Muramatsu R., Goebert D., Sweeny H., & Takeshita J. (2008). A descriptive study of a unique multi-ethnic consultation-liaison psychiatry service in Honolulu, Hawaii. *The International Journal of Psychiatry in Medicine*, 38(4), 425–435.

Nakabayashi, T. I. K., Guerra, K. A., de Souza, R. M., Loureiro, S. R., Contel, J. O. B., Cabrera, C. C., … Crippa, J. A. S. (2010). A comparison of consultative psychiatric services in two Brazilian university hospitals using a standardized protocol for recording liaison consultations. *Cadernos de Saude Publica*, 26(6), 1246–1260.

Ndetei D. M., Khasakhala L. I., Kuria M. W., Mutiso V. N., Ongecha-Owuor F. A., & Kokonya D. A. (2009). The prevalence of mental disorders in adults in different level general medical facilities in Kenya: A cross-sectional study.

Annals of General Psychiatry, 8(1), 1744-1859.

Ndetei D. M., Khasakhala L., Mutiso V., & Mbwayo A. (2011) Knowledge, attitude and practice (KAP) of mental illness among staff in general medical facilities in Kenya: Practice and policy implications. *African Journal of Psychiatry*, 14(1), 225-235.

Nkporbo K., Ugboma L., & Chike P. (2014). Pattern and prevalence of psychiatric consultations in other non psychiatric in patient facilities in University of Port Harcourt Teaching Hospital: A 5 year review. *Nigerian Health Journal.* 14(7), 13-20.

Onofa L. Udofia O., Fatiregun A., Adebowale T., Majekodunmi O., & Akinhanmi A. (2014). Clinical and demographic profile of patients using a liaison-psychiatry service in a general hospital setting in Abeokuta, Nigeria. *African Journal of Psychiatry,* 17(01), 493-502. https://doi.org/10.4172/1994-8220.1000105

Pasnau R. (1982) Consultation- liaison psychiatry at the crossroads: In search of a definition for the 1980s. *Hospital Community Psychiatry*, 33(1), 989-995.

Philip, C. J. J., Prabhakaran, A., & Nair, A. B. (2013). A descriptive study on clinical profile of patients attending consultation-liaison psychiatry in a tertiary care centre in Kerala. *Indian Journal of Psychiatry*, 55(1), 98.

Poli R., Carreca A., Colmegna F., Ferraris S., Gagliardi E., Tamborini S., & Toscano M. (2017). *Journal of Psychosomatic Research*, 96(1), 32-34.

Risal A., & Prasad S,. (2013). Psychiatric morbidity patterns in referred inpatients of other specialties. *Journal of Nepal Medical Association,* 52(189), 238-44.

Rothenhäusler H B. (2006). Mental disorders in general hospital patients. *Psychiatry Danube*, 18(3-4), 183-92.

Rukundo Z., Musisi S., & Nakasujja N. (2013). Psychiatric morbidity among physically ill patients in a Ugandan Regional Referral Hospital. *African Health Sciences*, 13(1), 87–93.

Sarkar S., Balasundaram S., & Backer A. (2015). Consultation-liaison services in a tertiary hospital of Pondicherry. *Indian Journal of Psychiatry*. 57(5), 85.

Sharp, J., Innes, I., & Brown, T. (2011). Referrals to a Liaison Psychiatry outpatient clinic. *Scottish Medical Journal*, 56(3), 125–9.

Sheehan DV., Sheehan K., Shytle R., Janavs J., Bannon Y., Rogers J., …, Wilkinson B. (2010). *Journal of Clinical Psychology,* 71(3), 313-36.

Shyangwa P. M., Joshi D., Sherchan S., & Thapa K B. (2009). Psychiatric morbidity among physically ill persons in Eastern Nepal. *Nepal Medical College Journal*, 11(2), 118-22.

Singh, D., Ajinkya, S., Nabi, J., Manzoor, A., & Ghildiyal, R. (2013). Patterns of consultation-liaison psychiatry among in-patients at a tertiary care hospital in Navi-Mumbai. *Indian Journal of Psychiatry*, 55(1), 51. Retrieved from http://ovidsp.ovid.com/ovidweb.cgi?T=JS&CSC=Y&NEWS=N&PAGE=fulltext&D=emed11&AN=70991139

Singh P., Vaidya L., Shrestha D., Tajhya R., & Shakya S. (2009). *Nepal Medical College Journal*, 11(4), 272-274.

Skakic, O., & Trajanovic, L. (2009). Consultative psychiatry examinations of patients--review of twelve months retrospective follow up. *Medicinski Pregled*, 62(11–12), 569–572.

Sockalingam, S., Alzahrani, A., Meaney, C., Styra, R., Tan, A., Hawa, R., & Abbey, S. E. (2016). Time to Consultation-Liaison Psychiatry Service Referral as a Predictor of Length of Stay. *Psychosomatics*, 57(3), 264–272.

Sundarnag, G., Manjunatha, N., Vyjayanthi, S., Virupakshi, J., & Murali, T. (2014). Changing trends in inpatient psychiatry referral at general hospital in India. *Indian Journal of Private Psychiatry*, 8(1), 27-32.

Thompson C., Dogra N., & McKinley R. (2010). Survey of general practitioners' attitudes towards psychiatry. *The Psychiatrist*, 34(12), 525-528.

Vasilian C., & Tamasan S. (2013). The role of liaison psychiatry in the general hospital. *European Psychiatry*, 28(1), 1-3.

Wakil M., Abdul I., Abdulmalik J., Salawu F., & Ahidjo A. (2013). Attitude towards psychiatric treatment in the University of Maiduguri Teaching Hospital: A preliminary report. *African Journal of Psychiatry*, 16(1), 182-186.

Wand, A. P., Corr, M. J., & Eades, S. J. (2009). Liaison psychiatry with Aboriginal and Torres Strait Islander peoples. *Australian and New Zealand Journal of Psychiatry*, 43(6), 509-517.

Wang J., Wang Q., Wimalaratne I., Menkes D., & Wang X. (2017). Chinese non-psychiatric hospital doctors' attitudes toward management of psychological/psychiatric problems. *Bio Medical Central Health Services Research*, 17(576), 2521-2528.

Wimalaratne, I. (2013). An evaluation of a general hospital-based consultation-liaison psychiatry service. *Australian and New Zealand Journal of Psychiatry*, 47(1), 92.

Wong M., & Yiu M. (2014). Consultation-liaison service in a regional hospital in Hong Kong. *East Asian Archives of Psychiatry*, 24(2), 51–57.

Yassini A., Yassini S., Yazdi F., Poormovahed Z., & Kholasezadeh G. (2011). Evaluation of psychiatric consultations in Yazd Shahid Sadughi general hospital. *Procedia - Social and Behavioral Sciences* 30(1), 1561 – 1564

Yousafzai A., Jehangiri A., Kazim M., & Shah M. (2015). Demographic and clinical characteristics of patients referred to psychiatric unit in a tertiary care hospital. *Journal of Ayub Medical College Abbottabad*. 27(1), 208-11.

Zarghami, M., Farnia, S., Khalilian, A.-R., & Amirian, T. (2014). Study of attitudes and practice of physicians regarding consultation-liaison psychiatry in teaching hospitals of Mazandaran, Iran. *Iranian Journal of Psychiatry and Behavioral Sciences,* 8(2), 38–43.

Zhao, X.-H., Hong, X., Shi, L.-L., Li, L., Cao, J.-Y., & Wei, J. (2011). Analysis of data from consultation-liaison psychiatry service for the inpatients in a tertiary general hospital. *Chinese Mental Health Journal*, 25(1), 30–34.

APPENDICES

Appendix 1: Informed consent for Patients attending Consultation Liaison Psychiatry

My name is Sarah Wawa, a post graduate student in the department of psychiatry at the University of Nairobi. I am currently undertaking a study Consultation Liaison Psychiatry services at the Kenyatta National Hospital. I am going to give you information and invite you to be part of this research.

This consent form may contain words that you do not understand. Please ask me to stop as we go through the information and I will take time to explain. If you have questions later, you can ask me.

Consultation Liaison Psychiatry refers to the cooperation between different department at the hospital and the department of psychiatry, or mental health. This study seeks to demonstrate how the psychiatric services at KNH are used, and who uses them.

The research will involve you filling in a questionnaire that will take approximately 30 minutes.

You are being invited to take part in this research because of you having been referred to the mental health unit. Your participation in this research is entirely voluntary. There will be no monetary reimbursement for participation. Your privacy and confidentiality will be maintained, and your name will not appear in any of the reports generated.

If you have any questions, you can ask them now or later. If you wish to ask questions later, you may contact any of the following:

1. Sarah Wawa, 0705-321 800/ katarawawa@gmail.com (researcher)

This study has been reviewed and approved by the KNH/ UoN Scientific, Ethics Review Committee , which has the task of ensuring that research participants are protected from harm. Their contacts are as below if you wish to seek clarification. KENYATTA

NATIONAL HOSPITAL – UNIVERSITY OF NAIROBI ETHICS REVIEW

COMMITTEE (KNH-UON ERC)

P.O.BOX 20723 – 00202

NAIROBI, KENYA

Email address uonknh_erc@uonbi.ac.ke

Website : http://www.erc,uonbi.ac.ke

Part 2: Certificate of Consent

I have read the foregoing information and I consent voluntarily to be a participant in this study.

Print Name of Participant_____

Signature of Participant _____

Date _____

I have accurately read out the information sheet to the potential participant, and to the best of my ability made sure that the participant understands about the study and what is required of them.

Name of Researcher_____

Signature of Researcher _____

Date _____

Appendix 2: Informed consent for Registrars

My name is Sarah Wawa, a post graduate student in the department of psychiatry at the University of Nairobi. I am currently undertaking a study Consultation Liaison Psychiatry services at the Kenyatta National Hospital. I am going to give you information and invite you to be part of this research.

This consent form may contain words that you do not understand. Please contact me after you go through the information and I will take time to explain.

Consultation Liaison Psychiatry refers to the cooperation between different department at the hospital and the department of psychiatry, or mental health. This study seeks to demonstrate how the psychiatric services at KNH are used, and who uses them. It also seeks to assess the postgraduate students from the departments that commonly consult on their knowledge, attitude and practices as concerns medical illnesses.

The research will involve you filling in a questionnaire online that will take approximately 10 minutes.

You are being invited to take part in this research because you currently are a postgraduate student in the eligible departments. Your participation in this research is entirely voluntary. There will be no monetary reimbursement for participation. Your privacy and confidentiality will be maintained, and your name will not appear in any of the reports generated.

If you have any questions, you can ask them now or later. If you wish to ask questions later, you may contact any of the following:

2. Sarah Wawa, 0705-321 800/ katarawawa@gmail.com (researcher)

This study has been reviewed and approved by the KNH/ UoN Scientific, Ethics Review Committee , which has the task of ensuring that research participants are protected from harm. Their contacts are as below if you wish to seek clarification. KENYATTA

NATIONAL HOSPITAL – UNIVERSITY OF NAIROBI ETHICS REVIEW

COMMITTEE (KNH-UON ERC)

P.O.BOX 20723 – 00202

NAIROBI, KENYA

Email address uonknh_erc@uonbi.ac.ke

Website : http://www.erc,uonbi.ac.ke

Part 2: Certificate of Consent

I have read the foregoing information and I consent voluntarily to be a participant in this study.

Print Name of Participant_____

Signature of Participant _____

Date _____

I have accurately read out the information sheet to the potential participant, and to the best of my ability made sure that the participant understands about the study and what is required of them.

Appendix 3: Questionnaire for registrars

Questionnaire Number:

Part 1: Demographic characteristics:

Year of study: .....

Sex: **Male** ☐ **Female** ☐

Area of specialization: ……

Years in practice before postgraduate studies …….....

Part 2: Knowledge and Practice:

1. In your current department of practice, do you encounter psychiatric conditions?
   Yes ☐ **No** ☐

2. If yes, how often do you encounter psychiatric conditions?
   Rare ☐ **Often** ☐ **Frequent** ☐ **Daily** ☐

3. Have you ever asked for a psychiatrist consultation since you began your training?
   Yes ☐ **No** ☐

   If yes, how often? **Always** ☐ **Rarely** ☐ **Frequently** ☐

4. What psychiatric conditions are more common in your department?

i.……

ii. ……

iii. …….....

iv. .....

5. Do you feel well equipped to handle psychiatric conditions commonly encountered in your departments? In terms of the following:

Recognition of symptoms	**Yes** ☐	**No** ☐	**Not sure** ☐
Treatment options	**Yes** ☐	**No** ☐	**Not sure** ☐
Relevant investigations	**Yes** ☐	**No** ☐	**Not sure** ☐
Initiation of treatment	**Yes** ☐	**No** ☐	**Not sure** ☐
Adverse effects of medications	**Yes** ☐	**No** ☐	**Not sure** ☐

6. Where do you get information on management of psychiatric illnesses?

   Textbooks ☐ **Online** ☐

   Continuous medical education ☐ **Consultations with colleagues** ☐

   Undergraduate training ☐

   Practice before joining postgraduate studies ☐

   Other ☐ **(specify)……**

7. In your opinion, was your undergraduate psychiatry training you had adequate to equip you to handle psychiatric illnesses during and after internship?

   Yes ☐ **No** ☐

8. Did you have any psychiatry rotations during internship? **Yes** ☐ **No** ☐

   Do you consider it to be an important part of the practice that should be incorporated during this period? **Yes** ☐ **No** ☐

9. In your postgraduate studies, do you have any direct psychiatry training (lectures, rotations etc.) ☐ **Yes** **No** ☐

   If yes, do you think it provides adequate exposure for your practice?

   Yes ☐ **No** ☐

   If no, do you think it would be useful for you in the management of your patients to have a form of psychiatric training? **Yes** ☐ **No** ☐

10. In what form would you prefer postgraduate training on mental health to be?

    CME ☐ **Incorporated into PG curriculum** ☐

    Short rotations in MH unit ☐

    Other ☐ **(specify)** **.....**

11. Do you consider there to be stigma towards mental illnesses and those suffering from them? Yes ☐ No ☐

Appendix 4: Socio-demographic characteristics for patients referred to CLP

Questionnaire number:

1. Age: ..... years
2. Gender: Male ☐ Female ☐
3. Marital Status: Single ☐ Married ☐ Divorced/separated ☐ Widowed ☐
4. Education level: Did not complete primary school ☐
   Completed standard 8 ☐
   Completed Form Four ☐
   College/ University ☐
5. Are you employed or in business? Yes ☐ No ☐
6. What is your occupation? .....
7. What is your total family income in kshs? .....

Additional medical Information (To be obtained from the records)

1. Referring specialty/ Unit .....
2. Medical diagnosis .....
3. Reason for referral .....