

Title: Barriers to physical health care in persons with severe mental illness: a facility based mixed method study in Ethiopia

by

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Abstract

Background

People with severe mental illnesses (SMI) face barriers that contribute to poor physical health outcomes. However, these barriers have not been systematically investigated in Ethiopia.

Aim: The aim of this study was to examine barriers to care for physical co-morbidities among SMI patients. It achieves this by: i) estimating the prevalence of physical co-morbidities in SMI in-patients in a psychiatric referral hospital over a two month period; ii) describing potential associations of various socio-demographic and clinical factors with the occurrence of physical co- morbidities in admitted patients with SMI; and iii) exploring barriers in recognition and management of these physical co-morbidities in the immediate curative medical care environment of admitted SMI patients in the psychiatric referral hospital.

Methods: The study used a mixed methods design that included: i) a quantitative cross-sectional facility-based record review; and ii) a qualitative exploration of potential or experienced barriers to physical health care provision by patients, caregivers, mental and general health professionals. The quantitative component estimated prevalence and examined risk factors associated with the presence of co-morbid physical health conditions among people with SMI. For this, clinical records of all admitted patients with diagnosis of SMI were reviewed over a two-months period. To check the reliability of the clinical records, a pilot test was done for two weeks before actual data collection. By using systematic random sampling of the records reviewed, 30 patients were selected for physician assessment in order to check the accuracy of the information included in records. The qualitative section was conducted using semi-structured interviews with SMI patients and their caregivers and focus group discussions with service providers.

Results: For the record review, 73% of the patients were male with the mean age of 32.3 years. Most of them were single (69.6%), orthodox Christians (53.6%), and from the capital city, Addis Ababa. Prevalence of physical co-morbidities from review of 289 clinical records of patients on admission was 10.0%, compared to over half (53.3%) of the 30 patients undergoing the additional physician review and 16 had physical co-morbidity. Diagnosis of schizophrenia and urban residence were significantly associated with physical co-morbidity in SMI patients ($p < 0.05$). The participants in the qualitative study described four types of barriers to accessing health care for physical illnesses in SMI patients: i) psychiatric care provider-related, ii) non-psychiatric physicians-related, iii) patient and illness-related and iv) systems-related.

Conclusion: Physical illnesses in SMI patients' under diagnosis might be exacerbated by poor documentation in the clinical records. Numerous barriers exist that hinder access to physical health care in this group of patients and interventions geared towards tackling these barriers are required.

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List of abbreviations

ASMH	Amanuel Specialized Mental Hospital
DSM-IV-TR	Diagnostic and Statistical Manual of Mental Disorders 4 th edition text revised
E.C	Ethiopian Calendar
FDRE	Federal Democratic Republic of Ethiopia
FGD	Focus Group Discussion
HIV	Human Immune Deficiency Syndrome
ICD-10	International Classification of Diseases 10 th edition
IP	In Patient
MOH	Ministry of Health
PC	Psychiatric Condition
SMI	Severe Mental Illness
SNNPR	Southern Nations, Nationalities and People's Region
SPSS	Statistical Package for the Social Sciences
SSI	Semi-Structured Interview
VDRL	Venereal Disease Research Laboratory
WMA	World Medical Association

Operational definition of terms

Severe Mental Illness (SMI) : A psychiatric morbidity including schizophrenia, schizoaffective disorder, bipolar disorder & major depressive disorder (Moore, 1998; William E. Narrow., 1998).

Psychiatric Conditions (PC): One or more of the alphabetically listed DSM-IV-TR mental health-related conditions (American Psychiatric Association, 2000).

Physical co morbidity (PC): One or more of the ICD-10-CM coded diagnosis for selected General Medical Conditions and Medication-Induced Disorders (World Health Organization, 1992).

Barrier: as defined in the Modern Oxford dictionary, a barrier represents any obstacle that hinders access. In the context of this research, a barrier is an obstacle to equitable access to physical health care in SMI patients.

In Patient (IP): Patient that is admitted for 24 hours or more.

Referrals: Patients sent from or to Amanuel Mental Specialized Hospital from other higher, lower and horizontal general health facilities.

Physical Care: Care given for co-morbid medical conditions primarily curative in nature for this study but not ruling out promotive, preventive and rehabilitative services.

Acute: As described in Oxford Medical dictionary, a disease of rapid onset, severe symptoms, and brief duration, usually less than six months (Reference, 2002).

Chronic: Describes a disease of long duration, usually more than six months, involving very slow changes.

Urban: relating to a town or city.

Rural: relating to, or characteristics of the countryside rather than the town.

Infection: Refers to invasion of the body by harmful organisms (pathogens), such as bacteria, fungi, protozoa, rickettsiae, or viruses.

Hypertension: Elevation of the arterial blood pressure above the normal range expected in a particular age group.

Cancer: Refers to malignant tumour, including carcinoma and sarcoma.

1 Introduction

1.1 Background

People with a severe mental illness (SMI) are at increased risk for a range of physical illnesses and conditions. They have increased morbidity and mortality rates compared with the general population (Vreeland, 2007). There are a range of factors contributing to the higher rates of co-occurring physical illnesses in persons having a diagnosis of SMI, such as sub-optimal health care, unhealthy lifestyle, and long-term use of antipsychotic medications (Saraceno et al. 2007).

Persons with SMI face a number of challenges in accessing quality health care when they develop physical illnesses (Druss et al, 2001). Druss and colleagues also reported similar difficulties encountered by individuals with SMI in receiving preventive medical care. Some of these challenges include as a result of the SMI the patients face difficulty to communicate with clinicians and have poor motivation to follow up; lack of interest from primary care physicians to treat patients with SMI; mental health professionals' lack of knowledge and skill to provide medical care to this group and the fragmentation of medical and mental health care service (Druss, Desai, 2002).

Although many studies and interventions address the psychiatric aspects of SMI, it is not the case regarding physical morbidities associated with these psychiatric disorders (Fitzpatrick, Powe, Cooper, Ives, & Robbins, 2004). Barriers to health care are major aggravating factors of poor health status (Drapalski, 2008).

Observations while working as a psychiatrist in Amanuel Specialized Mental Hospital (ASMH) have indicated that there may be a problem with access to physical health care in the hospital and when patients are referred to general hospitals. As my colleagues and I observed through the years, there is unsatisfactory physical health care delivery in this specialized mental hospital. Thus, the objective of the study is to conduct an in-depth analysis of known and other potential barriers to physical health care in admitted patients with SMI for verification and validation of these observations as well as to explore ways of overcoming these potential barriers.

Tackling the issue of access to physical health care in the management of people with SMI has both an overall importance for increasing evidence and knowledge and in the successful

implementation of the current mental health strategy of Ethiopia and the strategic plan of ASMH. The hospital's strategic plan sets out its core values as 'community first, collaboration, commitments, change and trust (Amanuel Specialized Mental Hospital Strategic Planning Document 2001-2005 E.C., 2008). The National Mental Health Strategy (FDRE MoH, 2012) mandates that mental health be integrated into primary health care to expand access to mental health care. It promotes a decentralized approach in which health services are available at local hospitals, district and regional health centres and tertiary facilities. It also ensures that those who require services have access to treatment as close to their home as possible and in the least restrictive environment. By integrating mental health services into the primary health care system, it is envisioned that those with both physical and mental health related needs will be treated in a seamless and comprehensive manner. The strategy also aspires to deliver effective and quality services. These include, among others, developing legislation to protect the human rights of mentally ill people, working with professional associations and academic institutions to promote quality training and care, and organize, launch and support anti-stigma campaigns to educate about the causes and treatments of mental disorders. The national mental health strategy of Ethiopia was launched in 2012 in order to address the mental health needs of all Ethiopians through quality, evidence-based, culturally competent, equitable and cost-effective care (MoH., 2012). The findings of the study will also help in the analysis of the needs gap relative to the access to physical health care for patients. It is also a human rights concern that people with SMI receive the required medical care for not only their mental health problems but their physical health care needs as well (Maj, 2009). This has to be in line with an integrated mental health care strategy of the country both in mental health and medical health care facilities.

In this study I aim to elucidate barriers to physical health care experienced by patients with SMI. It is hoped that the results of this study would inform the development of interventions to overcome these barriers at ASMH in Ethiopia and elsewhere. ASMH, established by Italians in 1938, is the only psychiatric hospital for the whole country. It is located in Addis Ababa, capital city of Ethiopia in the Horn of Africa. The study uses a mixed methods approach including a review of case records using a checklist for the quantitative component and semi-structured interviews and focus groups with patients, caregivers and service providers for the qualitative component, The mixed methodology is preferred as it gives a better understanding of the problem compared to single method (Creswell, 2009).

1.2 Outline of dissertation

I start the dissertation by presenting a review of the literature on SMI and barriers that people with SMI face in accessing adequate health care for their physical illnesses. I did the literature review using standard review methods with the use of key words on Web of Science and Google Scholar. After the literature review, I present the aim and objectives of the study. The study design, which is cross-sectional and mixed qualitative and quantitative, led to my choice of methods of data collection. The methods section elaborates on the design, setting, sampling strategy, measurement instruments and data obtained with specification of data collection and management procedures within the study setting. This is followed by a data analysis section that indicates procedures, methods and tools used in compilation and analysis of the data. The main body of the dissertation ends with conclusions made based on the results of the study recommendations, followed by references used, and appendices.

1.3 Aim and Objectives

1.3.1 Aim

To determine the prevalence of physical co-morbidities and examine barriers to care for physical co-morbidities in patients with severe mental illness.

1.3.1 Objectives

1. To estimate the prevalence of physical co-morbidities in patients with SMI admitted to a psychiatric referral hospital over a two month period.
2. To describe potential associations of various socio-demographic factors with the occurrence of physical co-morbidities in admitted patients with SMI.
3. To explore barriers in recognition and management of these physical co-morbidities in the immediate curative medical care environment of admitted patients with SMI in the psychiatric referral hospital.

2 Literature review

2.1 Search method and number of studies located

In this study I used the tools of systematic review rather than performing formal systematic review of literatures. The articles and materials were selected based on the study question combining prevalence of physical co-morbidity in line with barriers to health care in SMI inpatients. Comparison was also made with related studies from similar settings, especially Sub-Saharan Africa. The literature reviewed here were guided by the research question and objectives of the study. In order to review the related literatures on the study topic, I searched Google Scholar and Web of Science using terms (record review) AND (“mental AND physical”) AND (“Illness or Co-morbidity”) AND (“Medical Professional or Caregiver”) AND (psychiatric inpatients) AND (barriers to health care). A total of 2550 articles were obtained and 100 were manually selected, making the total publications identified as 2650. Of these, 1650 articles were excluded based on review of their titles. Through a review of abstracts of the remaining 1000 articles, 550 were not found to be relevant to the research question, and accordingly, excluded. The remaining 452 articles were briefly reviewed and 265 were excluded as they deal with other issues, such as articles on general psychiatric illnesses, two or more co-occurring psychiatric illnesses and facilitators for services. The full text of 187 publications and additional 5 documents from local sources were reviewed. Out of these papers, 79 full texts were obtained as they directly addressed barriers to physical health care in SMI. Additional papers were also obtained from links through a review of available hard documents locally, based on their context/relevance to the study and their accessibility, making a total of 84 sources used in the literature review for the dissertation. See flow diagram below (figure 1) for illustration of the procedure.

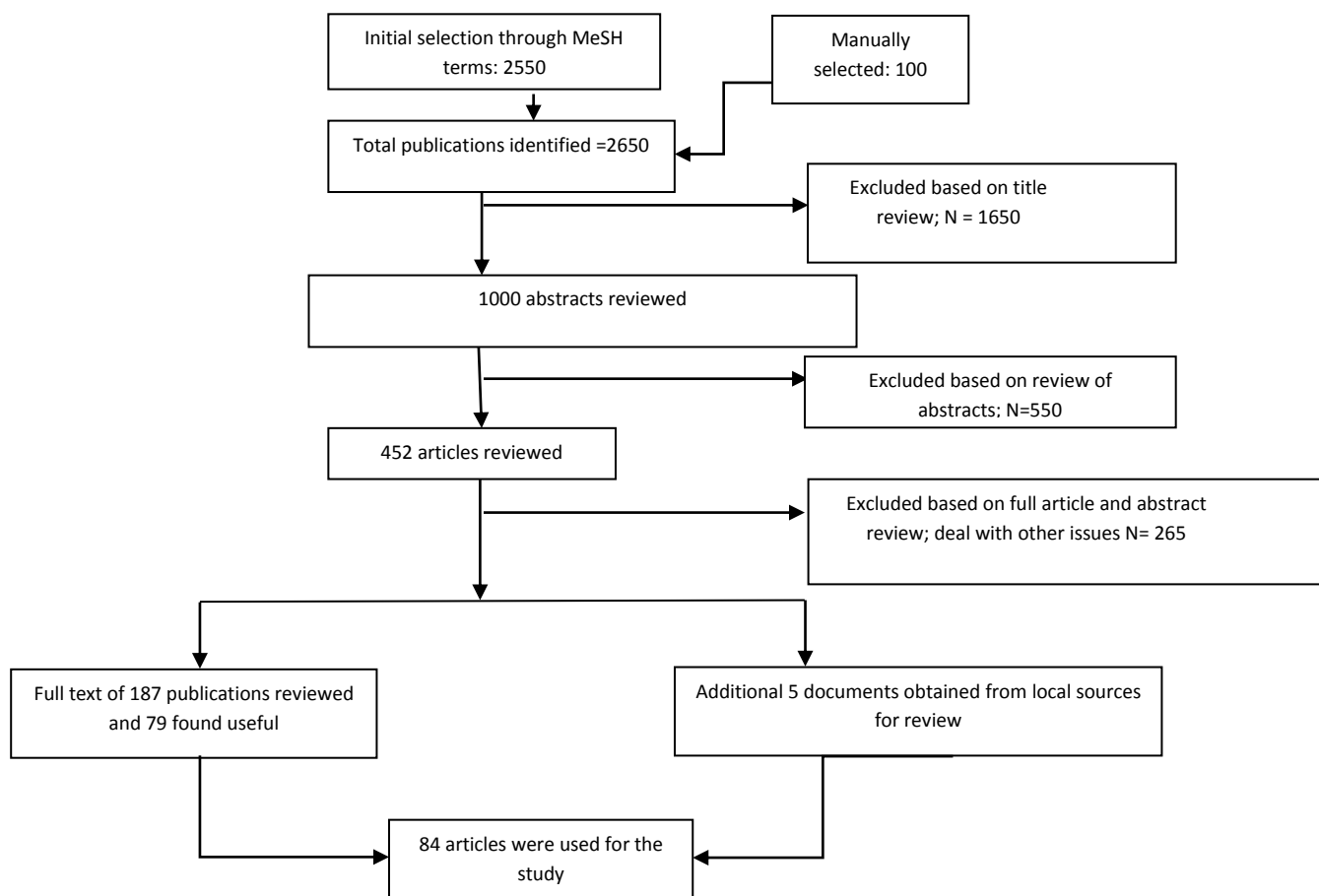


Figure 1: Flow diagram illustrating the process of article selection for the literature review

2.2 What we know about the issue from the literature?

Barriers to health care can be described within a framework of four major categories or a combination of these. Broadly speaking these are geographic, cultural, socioeconomic and organizational barriers (De Hert, Cohn, & Bobers, 2011b; McGraw-Hill, 2002). Poor access to health care for physical co-morbidities can lead to further deterioration in a person's mental health status. This is particularly the case for SMI because of its severity and associated high degree of morbidity and premature mortality (De Hert, Cohn, et al., 2011b). Not seeking care (Phelan, Stradins, & Morrison, 2001), tendency to focus on mental illness only (Colton & Manderscheid, 2006; Phelan et al., 2001), stigmatization (Phelan et al., 2001) and financial barriers (Saraceno, Van Ommeren, & Batniji, 2007) are said to be among the main patient, provider and system related barriers to physical care.

De Hert and colleagues (De Hert, Cohn, & Bobers, 2011a) classified these barriers to the recognition and management of physical diseases in patients with SMI in five major groups:

psychiatric care provider related, general physician related, patient factors, illness related and systemic factors. The above classification of factors as geographic, cultural, socioeconomic and organizational affect the patients' access to and quality of health care. All these factors in one way or another exist within the five classifications listed here.

These five major areas will be summarized into four categories. Some factors overlap, for example psychiatric and non-psychiatric professional-related ones, patient and illness-related ones. Thus, summarizing into four categories would help to understand them better. These factors are: a) factors related to professionals; b) factors related to patients and their illness, as well as their caregivers; c) services and/or systemic factors; and d) treatment related factors. Psychiatrist-related factors and other physician-related factors can be put as professional-related because there are barriers in common. Examples of such barriers are: provision of suboptimal and worse quality of care by clinicians to patients with SMI, lack of assessment, monitoring and continuity of care of the physical health status of people with the illnesses, regarding or labelling physical symptoms of SMI patients as psychosomatic complaints, lack of adequate human and material and financial resources to deal with the behavioural and emotional difficulties encountered by SMI patients. On the other hand, patient and illness-related factors can be categorized together. For example, cognitive impairment caused by SMI can cause the patient not to seek adequate physical care, become less compliant to treatment given, have difficulty comprehending health care advice and carry out required changes in lifestyle. Treatment-related factors can be linked to services/systems and professionals and adverse consequences of psychotropic medications (De Hert, Correll, & Cetkovich-Bakmas, 2011).

According to De Hert and colleagues (2011), the first category of factors determining access to adequate health care are related to the roles and practices of psychiatrists and other physicians (professional-related factors). These authors suggest that psychiatrists focus on mental rather than physical health, and will often consider physical complaints as psychosomatic symptoms. A related shortcoming is the lack of psychiatrists' knowledge on physical medical issues (Colton & Manderscheid, 2006; Greening, 2005; Kane, 2009). On the other hand, general or non-psychiatric physicians often stigmatize people with mental disorders, and offer suboptimal care to patients with SMI (Colton & Manderscheid, 2006; Greening, 2005; Kane, 2009). Furthermore, several studies described the stigma related to mental illness adversely affecting access to optimal health care services for those with SMI (De Hert, Cohn, et al., 2011b). Staff

at general medical facilities are often unequipped to handle behavioural and emotional problems of patients with SMI and to manage the complexity and time intensity of coordinating both medical and psychiatric medications (De Hert, Correll, & Cetkovich-Bakmas, 2011; Fleischhacker, Cetkovich-Bakmas, & De Hert, 2008).

The second category of factors, patient and illness-related factors include not seeking adequate physical care, difficulty comprehending health care advice and/or not carrying out required changes in lifestyle due to symptoms of the SMI, fewer medical visits due to severity of mental illness and less compliance with treatment. Less direct but related factors associated with patients and their illness include lack of awareness of physical problems due to cognitive deficits or due to a reduced pain sensitivity associated with antipsychotic medication, migrant status and/or cultural and ethnic diversity, lack of social skills and difficulties communicating physical needs (Phelan et al., 2001; Robson & Gray, 2007; WHO, 2005). In the above review, it was discussed that there is difference in culture among the service providers and their clients where older Chinese clients remains unresponsive to the service delivery (De Hert, Correll, et al., 2011; Fleischhacker et al., 2008).

The third category of factors relate to services or systems These include financial barriers, lack of access to health care, lack of clarity and consensus about who should be responsible for detection and managing physical problems in medical and mental health systems of care. According to their study, services in low- and middle-income countries are underfunded and under resourced. Furthermore, mental and medical services are not integrated; they are expensive and insurance coverage for such services is lacking (Saraceno et al., 2007; Zeber, Copeland, McCarthy, Bauer, & Kilbourne, 2009).

The fourth important group of factors are treatment-related factors which include the deleterious impact of psychotropic medications on physical health. Some of the adverse effects of these medications include derangement of blood levels of cholesterol and triglyceride, sexual dysfunction, cardiac toxicity, reduction in salivary flow, problems related to vision and balance (Robson & Gray, 2007).

The barriers described above (provider, patient, system and treatment related factors) are potential barriers in the immediate physical health care and related environment for patients with SMI. Some of these have been clearly documented in existing literature as described above, while others may still be uncovered. Patient-related factors disadvantage patients owing

to the presence of a mental illness. Although few studies exist in the literature about caregiver factors, these may be viewed in close proximity to core patient and illness related factors. For example, the caregivers may experience burden related to caring for their family members' psychiatric illnesses (Steele., 2010). Steele and her colleagues (2010) describe caregivers' psychiatric problems adversely affecting SMI patients' access to physical health care. Poor collaboration among mental health professionals and families of SMI patients also hinders access to health services for the patients (Kaas, 2003). These two factors (patient/illness and caregiver) may be amenable to immediate interventions. These interventions include improving caregiver-patient relationships by addressing their psychiatric needs, supporting them to take individual responsibilities for healthy choices to promote health and educate them on stigma and coping styles.

The underlying complex structural and management-related factors, referred to as systemic factors, have a more distal effect on access to physical health care, in that they may pose long-term effects on the care provision for patients with SMI and be less amenable to change. The immediate effect of negative provider, patient, and system and treatment factors is to compromise the standard of care being provided, and increase morbidity, which eventually leads to poorer quality of life and increased mortality. Experience in ASMH has highlighted the barriers to health care access for people with SMI and many of these are reflected in published literature, as described above. Validation of these known barriers and uncovering others in the study context and investigation of interrelationships between these is the theoretical basis the study addresses. A better understanding of these barriers within the ASMH context will contribute to the planning of interventions to improve the care patients receive.

2.3 Gaps in knowledge: What we don't know?

The extent to which the barriers are understood and have been investigated is not sufficient for use in the design of an appropriate intervention strategy within the ASMH context. Awareness of the barriers by providers, patients and caretakers including their view and opinion of plausible approaches for addressing these need to be thoroughly evaluated, particularly in the context of the new mental health strategy and ASMH strategic plan (Demisse, 2012; MoH., 2012).

The literature on barriers to and facilitators of physical health care among persons with SMI using mixed qualitative and quantitative methods is scarce. While the qualitative component

helps in understanding the gaps and participants' experiences, the quantitative part of the study helps for verification and to provide a sampling base from which to select my interview participants, and find out the prevalence data for the physical co-morbidities. The mixed methodology is particularly important in Ethiopia, firstly, to obtain verifiable objective indicator data in line with the hospital key performance indicators to motivate for resources for intervention (Demisse, 2012). Secondly, barriers, which are not yet identified or poorly understood in our particular context and which are assumed to exist according to some observations, require in-depth analysis through the qualitative component.

The practical grouping and systematic investigation of barriers by including patients, their caregivers, and health professionals for plausible solutions most suiting the particular situation are limited in Sub-Saharan Africa.

2.4 Potential implications of this study: How it will fill the gap?

Little has been documented for the context of Ethiopia and more particularly the ASMH on barriers to health care access for people with SMI and strategies for addressing these. This study aims to provide such documentation.

The study will have implications at practice, policy and academic levels. Through enriching literature on investigating and understanding the barriers, the results can be used in the design of appropriate intervention strategies to overcome the negative outcomes and improve the care patients receive.

Concurrent and eventual increased awareness of the barriers by providers, patients and caretakers is needed. Additionally, their views for plausible approaches to addressing the barriers, particularly in the context of the new mental health strategy and ASMH strategic plan, is crucial (Demisse, 2012; MoH., 2012).

The study will supplement anecdotal observations and the ongoing analysis of ASMH's in-service provision for persons with SMI. This study is expected to fill the gap not only in the investigation of barriers by identifying them, but to develop a few suggestions for interventions most suited to the particular situation.

Further to these, the findings of this study will be analyzed within the context of a well structured framework for overall care set out in the Mental Health Strategy of the country

(FDRE MoH, 2012) and the strategic plan of ASMH for 2012/2013. The study will inform both mental and general medical professionals about the challenges faced by people with SMI and provide some suggestions on how to respond accordingly. In doing so the research will contribute to the integrated care approach which the Ethiopian Ministry of Health Mental Health Strategy is planning to implement, so that equity and continuity of care could be ensured in a holistic way.

The focus of this study is on curative care for patients with SMI and co-morbid physical health conditions being treated as in-patients in ASMH. Other important and related components of promotive, preventive, and rehabilitative issues will only be addressed and analyzed as far as these arise in the interviews. The ASMH has a mission to reduce morbidity, mental disability, and mortality through the provision of quality preventive, curative, and rehabilitative health service as well as capacity building through training of professionals and research. It has a vision to foster a healthy, productive and prosperous population. The research should contribute to the effective implementation of the national mental health strategy of Ethiopia. It is expected to assist in the formulation of workable policy recommendations that emanate from the strategy, and give further substance to the implementation of the ASMH strategy as well.

With respect to academics, findings of the research could be used for training professionals in mental health and other disciplines who will join the workforce at all health care facilities. The study will contribute towards expansions of the scientific knowledge regarding integrated mental and physical care for those who need it.

3 Methods

3.1 Study setting

The study was conducted at Amanuel Specialised Mental Hospital (ASMH) located in the country's capital, Addis Ababa. Before the occupation of Ethiopia by the Italians in 1936, there were three hospitals serving a population of less than one hundred thousand inhabitants of the town (Araya M. & F., 1993). During their occupation, the Italians established a new hospital, named Amanuel Specialised Mental Hospital for the indigenous Ethiopians on the outskirts of Addis Ababa. When the Italians built the hospital there, they had not anticipated that it would be in the centre of one of the largest open markets in Africa (Fekadu, 2007; Pankhrust, 1990). It is now situated in one of the most impoverished areas in Addis Ababa. The hospital took its name from the neighbouring Ethiopian Orthodox Church, St. Amanuel. After the Italians left, the hospital became an asylum for mentally disturbed vagrant patients (Giel, 1986, 1999).

There are 250 health professionals and 344 support staff currently working in the hospital ("Federal Ministry of Health Key Performance Indicators, 2005 E.C. Hospital Report ", 2013). These include 12 psychiatrists (including one neuro-psychiatrist), 59 psychiatric nurses, 10 psychologists, 2 sociologists and a social worker. Other medical staffs include 12 General Practitioners, 20 Health officers, 66 clinical nurses, and a public health professional.

Various patient groups are treated in the hospital, such as those suffering from psychosis, mood disorders, somatoform and anxiety disorders, and neuropsychiatric disorders, as well as those with co-morbid psychiatric and medical conditions.

The hospital provides most of the in-patient mental health services for the whole country with a bed capacity of 270. About 168 patients with schizophrenia are admitted to the wards each month. The hospital report (Amanuel Specialized Mental Hospital, Human resource Directorate report 2005 E.C., 2013) shows the bed occupancy rate to be 91.2%, average length of stay 33.4 days and average waiting time to get the service 79.2 minutes. The hospital provides outpatient services in a crowded setting.

An average of 400 out-patient clients are provided with medical and counselling services every day. In terms of individual diagnostic categories, each year about 41,500 people with

schizophrenia are followed up as outpatients and just fewer than 5000 new cases are seen. Figures for other categories of SMI were not available at the time of writing.

The key programs of the hospital are providing quality mental health service, research and training, integrating and supporting mental health services at facility level in different regions in the country. Since 2007 the hospital has managed to improve the clinical service through renovation and expansion of facilities, decentralization of mental health care while improving the service (Amanuel Specialized Mental Hospital, Human resource Directorate report 2005 E.C., 2013).

3.2 Study design

This is a sequential mixed method study which includes:

- 1) A quantitative cross-sectional facility-based record review to estimate prevalence and examine risk factors associated with the presence of co-morbid medical conditions among people with SMI.
- 2) A qualitative exploration of potential or experienced barriers to physical health care provision by mental and general health professionals.

I selected a mixed methods design as it could inform us better on the participants' setting from subjective view through the qualitative part and objective reality through the quantitative part. The combination of the two methods could provide a rich database on the study topic (Creswell, 2009). According to Creswell, the mixed method approach utilizes the strengths of quantitative as well as qualitative methods to reveal more reliable and in-depth findings. Moreover, the complex problems in health science research are known to be addressed by the use of the combined methods (Creswell, 2009).

3.3 Study 1: Quantitative component of study: Record review

The quantitative component of the study examines the prevalence of and risk factors associated with co-morbid medical conditions among people with SMI. It primarily focused on clinical records but to evaluate the reliability of the clinical records, also included a full physician assessment on 10% of patients included in the main record review.

3.3.1 Data and information to be collected

I collected data and information that included age, weight, rural/urban residence, substance use, psychiatric diagnosis, chronicity of illness, family history of medical illness, and duration

of exposure to psychotropic medications and their associations with physical co-morbidity using a structured record review of admitted SMI inpatients. (See Appendix 2.5 for a copy of the record review form). All clinical records of admitted patients with diagnoses of SMI from 15 August to 15 October 2015 were reviewed. The information obtained from the clinical record include the physical and psychiatric illness and its treatment, impact of treatment, seriousness of the problem, prognosis, whether or not the physical illness is detected, diagnosis made, and duration of the physical illness.

3.3.2 Measurement instrument

The record review contains the following information: 1. Socio-demographic characteristics of the study participants such as age, sex, marital status, education, residence, ethnicity and religion (as set out in Appendix 2.5). Clinical characteristics include duration of illness, duration of treatment, duration of admission to hospital, exposure to depot anti-psychotic medication, family history of psychiatric or chronic medical illness, and substance use. 3. Information regarding physical co-morbidity such as type and duration of illness, impact of treatment, seriousness and prognosis of the physical illness, pain and impairment associated with the illness.

The record review is mainly used as a registration or enumeration form for recruitment of patients with SMI including both those with and without physical co-morbidities and collecting the data for the prevalence estimate. The record review form was prepared based on existing hospital record files with therapeutic plans, clinical assessments and patients' clinical progress. Record reviews were completed in English by the principal investigator and three trained health professionals. The instrument was further refined after pilot pre-testing for two weeks.

3.3.3 Study population and sampling procedure

The source population for this study was all patients admitted to ASMH from 15 August to 15 October 2014. This period was chosen as the study required a feasible and realistic period for data collection. Two months would allow for some variation across months but would not be too long to fit within the scope of the study requirements. In the first record review, I reviewed all clinical records within 48 hours post-admission of the 308 patients admitted.

There were data that were not obtained at the time of admission which might be dependent on the duration of admission. Such data as patients' vital signs or results of laboratory investigations could not be extracted during the specified time unless the patients were

evaluated in the emergency case team and for those with suspected physical conditions. As a result, the second record review was performed at discharge as some of the data which were not available on the records during the first 48 hours post-admission were available at discharge, such as laboratory test results, vital signs, and patients' demographic information. (see results section Table 5 for this).

To determine if the record review showed realistic results, I did a full review of body systems and physical assessment on 30 admitted SMI patients selected from the initial record review (around 10%). The selection of the patients was based on systematic random sampling of the 289 records of the admitted patients. In the procedure, the first patient was chosen at random and every 5th patient's record was selected. The body system review and physical assessment was performed by a physician using a short screening tool (see Appendix 2.6). The information contained in the form included patients socio-demographic data, frequently occurring symptoms observed in patients with physical illnesses, such as cough, fever, headache, diarrhea, vomiting and constipation. This was followed by physical examination by a clinician, reaching a diagnosis and initiating a treatment plan.

3.3.4 Procedure and flow of record review

For the quantitative study patients were recruited on admission, at the emergency and general outpatient clinics through review of all clinical records post-admission. Both verbal and written consent was obtained from the patients or their care givers before the record review (see Appendix 3 for the consent form). If a patient with SMI developed a physical illness during his/her hospital stay (e.g. by history and via vital signs determination, systemic symptoms, signs, diagnosis, and laboratory investigations), they would be noted as having a physical comorbidity even if they did not have one at admission. For these, clinical records were reviewed by the principal investigator and trained study assistants. Clinical records of all admitted patients during the study period were reviewed, whether or not they had a physical comorbidity on admission.

3.3.5 Collection and compilation of completed record review forms and quality control

Completed record review forms were reviewed weekly by the principal investigator and study assistants for completeness and errors till completion of data collection. Incomplete or wrong information were rectified by the study assistants. Three health workers with a minimum of

diploma in clinical or psychiatric nursing were trained over one day as data collectors for the record review.

3.3.6 Data analysis for the record review

For this component of the study a data entry format for the record review was developed by using the SPSS version 21 program. The data entered were cleaned and checked for consistency and analyzed. The data collectors had good agreement on the extraction and completeness of the data. Various frequencies and potential significance for associations through multiple regression test were run by the investigator. First, frequency of important variables was run that included socio-demographic and clinical characteristics of the participants, risk factors for physical co-morbidity, type of physical co-morbidities.

This was followed by analytical statistics including Chi-squared test and multiple regression test of factors associated with physical co-morbidity such as age, sex, marital status, residence, substance use, duration of illness and treatment. This analytic stage was performed to determine predictors of physical co-morbidity in SMI patients while adjusting for confounders. The findings from the 289 clinical records were compared to the with physician assessments of the 30 patients selected. The selected patients' demographic characteristics, subjective complaints based on literature review of common presentations (De Hert, Cohn, et al., 2011b) and clinical observations. Additionally, description of overall co-morbidity and specific co-morbidities detected during the assessment was done (see Appendix 2.6 for the procedure).

3.4 Study 2: Qualitative component

The qualitative component of the study covers barriers to recognition and care for physical co-morbidity related to patient and illness, provider, caregiver and systemic factors using semi-structured interviews (SSI) and focus group discussions (FGD). These are applied to a purposively selected population of patients, providers and care givers as described in section 4.5.2 below.

3.4.1 Interview procedure

Through SSIs, knowledge of physical care in SMI, perceived barriers to physical care, practices related to physical care and mechanisms of interaction of these in the care of SMI were areas of discussion. This was done with a focus on identification of new and examination of existing

associations between physical care in SMI in patients and barriers to this care. Health care providers, patients and caregivers were asked the same questions (Boyce, 2006).

On the other hand, through the FGD, in addition to collection of data on the same areas as in SSI, the focus was on examination and analysis of identified associations between physical care barriers and physical care to explore potential service delivery improvement or interventions (Basch, 1987).

The main objective of this part of the study was to explore the experience of patients, care givers and service providers about receipt of general physical care.

3.4.2 Source, study population and selection

The study participants for this part of the study comprised patients admitted to ASMH identified as having physical co-morbidity during the survey period, their caregivers and service providers (both psychiatric and general medical care). Five eligible participants with SMI and their caregivers were selected for semi-structured interviews (SSI) through a review of all clinical records post-admission and at discharge. In addition to these five participants the study conducted two SSIs in the pilot study. These seven participants (patients with SMI and physical co-morbidities) had to have caregivers with them and be able to express themselves coherently. The participants were not recruited from the additional assessment of 30 patients.

For the FGD, participants were mental health and general medical care providers who have experiences in treating SMI patients. Two mental health professional FGDs were conducted in ASMH. These mental health professionals also manage the physical illnesses in the hospital as the patients develop them while on the wards. Participants were psychiatric nurses, general practitioners, health officers, and psychiatrists. For the non-psychiatric professionals, one FGD was conducted in Black Lion Specialised Hospital where most of referrals are made from ASMH for treatment of physical illnesses in SMI patients. The participants were clinical nurses and physicians who have experience in treating SMI patients (Basch, 1987).

For SSI a total of seven patients (two in the pilot and five in the main study) and their caregivers were purposively selected based on diagnosis of SMI in the inpatients and related physical co-morbidities, as identified from the record review. The selected SMI patients with co-occurring physical illnesses and their caregivers were interviewed about their views regarding receipt of services for the physical health problems (Boyce. & Neale, 2006). For the

focus group, three groups with five to six participants per group were conducted. Two groups comprised of clinical case teams from the mood and psychosis wards at ASMH and one group from Black Lion Specialized Referral hospital health care providers. Separate FGDs took place for professionals from ASMH and Black Lion hospital. FGDs were carried out in the hospital premises of selected hospitals (ASMH, Black Lion Hospital).

3.4.3 Measures and instruments

1. SSI with patients (see appendix 2.1 – 2.3), caregivers and providers: In the interview we discussed the various groups of barriers experienced by service users and providers in the health care access and utilization for physical health conditions of SMI patients in Ethiopian context.
2. Focus Group Discussion with mental health and general medical care providers (See appendix 2.4): The topics covered were the experiences of service providers regarding access of health care for SMI patients when they develop co-morbid physical illnesses. The issues discussed were prevention, early detection and treatment of physical health conditions in patients with SMI, referrals made among different health facilities in Ethiopia.

3.4.4 Data collection and management

For this component of the study, a research assistant with a Masters in Social Work and having experience in conducting qualitative interviews and focus group discussions, together with the researcher, conducted the in-depth interviews and focus group discussions.

3.4.5 Data analysis

After verbatim transcription, translation and editing of SSI and FGD recordings, Open Code qualitative data coding software (Bryman, 1994) was used for coding. The transcripts were analyzed by the investigator and study assistant using the framework method of data analysis (Smith & Firth, 2011; Srivastava & Thompson, 2009) .

This is a qualitative data analysis approach developed by Jane Ritchie and Liz Spencer in the 1980s. It involves familiarization, identifying thematic framework, indexing, charting, mapping and interpretation (Ritchie & Spencer, 1994).

Framework analysis works best for qualitative research that aspires to answer specific research questions, when the time frame is limited, and where a pre-designed sample and a priori issues

have been identified (Srivastava & Thomson, 2009). The approach allows the researcher to set the framework for analyzing the data well in advance, but also allows for emerging themes to be included as the transcripts are reviewed. The approach provides a roadmap for the researcher on how to undertake the data analysis.

The framework analysis technique follows a five-stepped approach (Lacey & Luff, 2001). The first step includes familiarization of oneself with the data. Second, the data will be coded, summarized and synthesized. The third part involves looking for associations or patterns among themes to make sure that views and statements of various participants are presented in a balanced way. Finally, the data will be interpreted and meanings will be sought. This could be summarized as familiarization, labelling concepts, defining and developing categories based on their properties and dimensions and interpretation.

Audio recordings and transcriptions of FGD were compiled, classified and analyzed. These were tabulated analytically as outputs as descriptive and narrative texts showing key patterns identified. Specific verbatim quotes were used in the final study dissertation. The SSIs and FGDs were conducted in Amharic as it is the participants' language. These were transcribed verbatim and then translated to English. The findings from the qualitative study were crosschecked within all SSIs and FGDs in order to ensure conformability, dependability and credibility. I checked the experiences of participants for consistency regarding conformability. I also reviewed the information found for dependability among all participants. In addition to this I checked credibility of the subjective view of the participants as to whether these were believable or not. I also checked the trustworthiness of the data with my own observation in the area. I crosschecked the information found in SSIs and FGDs with the actual reality in ASMH as I am working there. The qualitative data were assessed for the saturation level by reviewing each subsequent transcript for any further new ideas expressed by participants. The findings from the qualitative study revealed almost the same but socio-culturally different results with other previous studies on the topic. The findings from SSIs gave subjective experiences of patients and caregivers on the care for physical illness of patients with SMI. On the other hand the FGDs provided experiences in the settings from professionals' point of view and these were compared to data on prevalence of physical co-morbidity and frequencies in each types of co-morbidity generated in the quantitative study. This was also similar in other literature in the area.

3.5 Ethics

A number of ethical considerations, in accordance with World Medical Association's Declaration of Helsinki (WMA, 2013), were adhered to during the study. First, ethical clearance was obtained from ASMH ethics committee, Addis Ababa University and the University of Cape Town Human Research Ethics Committee in the Health Sciences Faculty, in the Republic of South Africa. See ethic permission letters in Appendix 6 and 7 and consent forms in Appendix 3.

For this the research proposal was submitted to the three places at the same time. Secondly, before the interviews and focus group discussions were conducted, written informed consent was obtained from each participant, after the purpose and benefits of the study were explained to them. Third, permission was sought from the participants regarding review of their clinical records. Fourth, the research participants were informed that the information gathered would be stored in a secure place and strict confidentiality would be maintained. Names of all participants were coded and the coded forms were kept separately. The Epidata file did not include names. Fifth, participants were interviewed in a private room and in Amharic, an official government language in Ethiopia.

3.5.1 Voluntary Participation

Participation in the study was voluntary and participants had the right to refuse taking part in the research at any time and this did not result in denial of any treatment. Apart from being thanked for participation, there was no financial gain for the participants.

3.5.2 Capacity and Informed Consent

Since the study involved interviewing vulnerable populations, capacity to give informed consent was determined by the principal investigator and study assistants who are health professionals, through clinical assessment, as follows:

Each participant was provided with adequate information regarding the aims and benefits of the study. I assessed their ability to retain information, for example recent memory, was determined through asking the question 'What did you have for breakfast?' for an assessment before lunch. In order to assess an SMI patient's level of orientation, the following questions like 'What is your name?' 'Who am I?' 'What place is this?' 'Where is it located?' 'What city

are we in?’ were asked. Attention was also assessed by asking the patient to spell the days of the week or months of the year backward. Furthermore, the patients’ level of insight into the illness was determined through the question ‘Are you aware of being ill’ or ‘Do you understand your health condition?’

If the patient could not give informed consent, his or her next of kin or guardian was asked to give permission for participation of the patient in the study. Any person who refused to participate in the study was not included. Only caregivers of patients included in the study were part of the study.

Participants were given adequate information about the aims and objectives of the study, and then they had the right to give an informed consent prior to interviews and review of their clinical records. For participants who could not read and write the information sheet and consent forms were read out to them. The research assistant or the researcher signed the consent form signifying that he or she has provided the required information for participants to give informed consent. Participants signed or marked the consent form indicating that they gave an informed consent. There was not any penalty for those who did not consent to participate in the study. They received the appropriate care for their mental and physical health conditions.

3.5.3 Privacy and Confidentiality

Interviews were conducted in a private room to ensure participant’s privacy. Issues discussed during the interviews were handled with confidentiality. Patients’ clinical records were reviewed after obtaining permission from the patient or caregiver. Anonymity was maintained by not writing names from the records and during interviews, rather code numbers were used. The code numbers were used during data analysis and report writing. Data obtained from the interviews, clinical records and any information related to the participants were locked in a cabinet and will be destroyed after five years. A password protected database was developed to store electronic data and access to all study data is limited to the researcher only.

3.5.4 Risks to Participants

There were no invasive procedures performed on participants in the study. Thus, the overall risk in the study was minimal. During the interviews participants were provided with refreshments.

Participants were informed that all the information they provided was confidential, and as already discussed information gathered for the purpose of this research was not used against them. The participants could express any concerns they might had or refuse to reply to questions they did not want to answer. The participants did not need to give any information that they did not wish to discuss. They were told that the interviews could be stopped at any time if they wanted to stop or refuse to consent for their clinical records to be reviewed by the investigator and study assistants.

4 Results of the Study

4.1 Quantitative Study

4.1.1 Record review 15 August to 15 October 2014

During the study period, a total of 289 clinical records of patients with severe mental illness were reviewed.

4.1.1.1 Demographic characteristics of patients

Out of these 289 patients, 211 (73%) were male patients and 78 (27%) female patients. The mean age of the patients was 32.3 years and standard deviation was 10.23 years with the minimum of 18 and maximum of 69 years. Of these 289 patients the majority were single (69.6%), just over half were followers of Orthodox Christian religion (53.6%) and just under half lived in Addis Ababa (46.7%). More than half of the patients had either secondary or post-secondary level of education (59.6%) and the majority (79.2%) could get family support whenever they needed it. Details are provided in Table 1.

Table 1. Socio-demographic characteristics of patients with SMI from record reviews (N=289)

Characteristics		Number	Percent (%)	
Gender	Male	211	73.0	
	Female	78	27.0	
	Total	289	100.0	
Age	<25	65	22.5	
	25-34	123	42.6	
	35-44	64	22.1	
	45 and above	37	12.8	
	Total	289	100.0	
Marital status	Single	201	69.6	
	Married	52	18.0	
	Other*	23	8.0	
	Not recorded	13	4.4	
	Total	289	100.0	
Employment	Employed	44	15.2	
	Unemployed	182	63.0	
	Other	34	11.8	
	Not recorded	29	10	
	Total	289	100.0	
Ethnicity	Amhara	123	42.6	
	Oromo	72	24.9	
	Tigray	12	4.2	
	Other	57	19.7	
	Not recorded	25	8.6	

Characteristics		Number	Percent (%)	
	Total	289	100.0	
Religion	Orthodox	155	53.6	
	Protestant	36	12.5	
	Moslem	64	22.1	
	Other	12	4.1	
	Not recorded	22	7.7	
	Total	289	100.0	
Residence	Urban	204	70.6	
	Rural	58	20.1	
	Not recorded	27	9.3	
	Total	289	100.0	
Region	Addis Ababa	135	46.7	
	Oromia	70	24.2	
	Amhara	28	9.7	
	SNNPR	40	13.8	
	Other	9	3.1	
	Not recorded	22	7.7	
	Total	289	100.0	
Education	No formal education	26	9.0	
	Primary	66	22.8	
	Secondary	97	33.6	
	Post-secondary	75	26.0	
	Not recorded	25	8.6	
	Total	289	100.0	
Means of income for family	Farming	35	12.1	
	Trading	6	2.1	
	Government employee	39	13.5	
	Other**	80	27.5	
	Not recorded	129	44.8	
	Total	289	100.0	
Family support (indirect indicators as found in the record)	Support Available whenever it is needed	229	79.2	
	Available much of the time but not always	20	6.9	
	Support available only sometimes	7	2.4	
	Support not available except very occasionally	17	5.9	
	Not recorded	16	5.6	
	Total	289	100.0	

* Divorced & widowed

** Daily laborer, private employee

4.1.1.2 Clinical characteristics of patients

Regarding service utilization of patients in the study (N=289), the table below shows that 54.7% had at least 7 months or more contact with services, just over a third (34.7%) had duration of engagement with services of at least seven months, over two thirds had duration of illness more than six months (70.0%), more than half had a diagnosis of schizophrenia (57.1%). Those that had diagnoses of mood disorders (bipolar disorder and major depressive disorder)

accounted for nearly one-fourth of the patients (23.8%). Since the most common diagnosis was schizophrenia, the majority of the hospital patients have been receiving a service under psychosis case teams (42.1%). About a third of the patients (30.1%) were receiving services from emergency and acute psychiatric case teams. A majority of the patients in this study had a hospital stay of at least a month (60.9%). Table 2 summarizes these findings.

Table 2 : Clinical characteristics of patients with SMI from record reviews (N=289)

Characteristics	Number	Percent (%)	
Diagnosis	Schizophrenia	165	57.1
	Other psychotic disorders	43	14.9
	Bipolar disorder	50	17.3
	Depressive disorder	19	6.5
	Other, including catatonia	12	4.2
	Total	289	100.0
Duration of illness (in months)	≤ 6	51	17.6
	7-24	41	14.2
	25-48	30	10.4
	49-72	32	11.0
	Above 72	99	34.3
	Not recorded	36	12.5
	Total	289	100.0
Duration of engagement with services, including current admission, (in months)	≤ 6	47	16.3
	7-24	31	10.7
	25-48	30	10.4
	49-72	25	8.7
	Above 72	72	24.9
	Not recorded	84	29
	Total	289	100.0
Duration of admission to hospital (in months) for current admission	< 1	29	10.0
	1-6	18	6.2
	Above 6	158	54.7
	Not recorded	84	29.1
	Total	289	100.0
Service	Emergency	88	30.4
	Mood	51	17.6
	Psychosis	122	42.1
	Other (addiction, geriatric, private wing)	28	9.5
	Total	289	100.0

4.1.1.3 Prevalence of co-morbidity

A total of 29 patients were found to have physical co-morbidity based on the records, giving a prevalence of 10.0% co-morbidity identified through a record review. This is both on admission and on discharge. Among all the patients, if a positive screen on a laboratory test is included as an indicator of physical co-morbidity a total of 110 patients were identified as having a physical co-morbidity, giving a prevalence of 38.1%. However, the laboratory findings were not clinically significant for consideration of physical co-morbidity as these were not accompanied by a formal diagnosis. Only the 29 patients identified at admission had an actual clinical diagnosis of a physical co-morbidity.

Out of these 29 clinical diagnoses, infection accounts for 51.7% (N=15) of the physical co-morbidity with HIV infection accounting for half of these 15 patients' co-morbidity. Other than infections, diagnoses included hypertension, diabetes mellitus, dental injury, glaucoma and gastritis as set out in Table 3. There was one case of liver cancer and one case of rabies encephalitis that died while on treatment in the medical intensive care unit of a specialized medical referral hospital.

Table 3: Physical co-morbidity of patients with SMI (N= 29)

Characteristics		Number	Percent
Overall co-morbidity	Acute	5	17.2
	Chronic	24	82.8
	Total	29	100.0
Specific co-morbidity	Infection	15	51.7
	Hypertension	4	13.8
	Diabetes mellitus	1	3.4
	Cancer	1	3.4
	Dental injury, glaucoma, peptic ulcer disease, epilepsy, tardive dyskinesia, catatonia due to a medical condition	8	27.5
	Total	29	100.0
Detail on treatment (N=29)	Initiated for the physical illness pending laboratory results	16	53.2
	Not initiated because laboratory results are not available	5	16.7
	Not initiated because diagnosis is not settled	2	6.7
	Not initiated because it is a medical emergency requiring urgent referral	1	3.4
	Other	5	16.7
	Total	29	100.0
Impact of treatment on psychiatric illness as judged by a physician (N=28)	Improved	6	21.4
	Worsened	10	35.7
	Remained the same	12	42.9

Characteristics		Number	Percent
	Total	28	100.0
Impact of treatment on physical illness as judged by a physician (N=28)	Improved	8	26.6
	Worsened	10	35.7
	Remained the same	10	35.7
	Total	28	100.0
Co-morbid physical illness duration (in months) (N=16)	< 12	8	50.0
	12-24	5	31.2
	> 24	3	18.8
	Total	16	100.0
Co-morbid physical illness seriousness if left untreated as assessed by physician (N=27)	Very serious	12	44.5
	Not serious	10	37
	Other	5	18.5
	Total	27	100.0
Co-morbid physical illness pain (reported by patient) (N=31)	Very severe	3	9.7
	Severe	10	32.2
	Moderate	4	12.9
	Mild	6	19.4
	None	8	25.8
	Total	31	100.0
Co-morbid physical illness impairment as reported by patient (N=29)	Yes, all the time	4	13.8
	Yes, some of the time	15	51.7
	No	10	34.5
	Total	29	100.0
Treatment received for physical co-morbidity (N=28)	Yes	18	64.2
	No	10	35.8
	Total	28	100.0
Type of treatment (N=22)	Intravenous fluids with 40% glucose and vitamins	1	4.5
	Antibiotics	6	27.2
	Miscellaneous	10	45.2
	Other	5	22.7
	Total	22	100.0

4.1.1.4 Potential risk factors for patients with SMI and a physical co-morbidity

According to the clinical records, out of all patients in the study, a third of them used khat (32.5%); tobacco use was documented in about a fourth of the patients (28.0%). There was much missing data especially on alcohol use. It was not clear whether or not the participants used other substances like cannabis because in the records it was not documented in about a third of them (29.5%) or put as 'no substance use' in 55.0% of them. Details are provided in Table 4 below.

Table 4: Potential risk factors for physical co-morbidity (N=289)

Characteristics	Number	Percent
Current treatment for psychiatric condition Antipsychotic medications	171	59.2

Antidepressant medications		15	5.2
Mood stabilizing medications		20	6.9
More than one of the above medications		68	23.5
Other		11	3.8
Not recorded		4	1.4
Total		289	100.0
Depot antipsychotic medication	Yes	141	48.8
	No	145	50.2
	Not recorded	3	1.0
	Total	289	100.0
Family history of Chronic medical illness	Yes	24	8.3
	No	166	57.4
	Don't know	61	21.1
	Not recorded	38	13.1
	Total	289	100.0
Family history of mental illness	Yes	52	18.0
	No	177	61.1
	Don't know	30	10.4
	Not recorded	30	10.4
	Total	289	100.0
Alcohol use	Yes	19	6.6
	No	171	59.2
	Don't know	65	22.5
	Not recorded	34	11.8
	Total	289	100.0
Khat use	Yes	94	32.5
	No	153	52.9
	Not recorded	42	14.6
	Total	289	100.0
Tobacco use	Yes	81	28.0
	No	131	45.3
	Not recorded	77	26.7
	Total	289	100.0
Other substance use	Yes	13	4.5
	No	159	55.0
	Not recorded	117	40.5
	Total	289	100.0

4.1.1.5 General health characteristics of patients with SMI and a physical co-morbidity

With regard to the general health characteristics of the patients, more than three-quarters of them got their vital signs determined near the time of discharge from hospital with the exception of temperature measurement, which was performed in just over half of the sample (56.4%). The number of patients whose vital signs were checked within 48 hours post-admission to hospital were less by 6.7– 9.3% compared to that of the time of discharge as described below. But the frequency of patients whose vital signs were examined increases when we review at the time of discharge from hospital. Regarding laboratory assessment, less

than a quarter of the patients got the service (Fasting blood glucose, liver function tests, renal function tests, urinalysis, other investigations) within 48 hours of admission. At discharge this increased to nearly half of the patients who had laboratory investigations. Other investigations were complete blood count, lipid profile, serum uric acid levels, stool examination, erythrocyte sedimentation rate, HIV test, and serology for syphilis (VDRL) and thyroid function tests. Details are found in Table 5 below.

Table 5: General health characteristics of patients with SMI (N=289)

Vital signs or investigation		Information available within 48 hours post admission (N=308)		Information available at time of discharge (N=289)	
		Number	Percent	Number	Percent
Blood pressure	Yes	232	75.3	237	82.0
	No	4	1.3	4	1.4
	Not recorded	53	18.3	48	16.6
	Total	289	100.0	289	100.0
Vital signs: Pulse rate	Yes	219	71.20	226	78.2
	No	2	0.6	1	0.3
	Not recorded	68	23.50	62	21.5
	Total	289	100.0	289	100.0
Vital signs: Respiratory rate	Yes	217	70.5	226	78.2
	No	3	1	1	0.3
	Not recorded	69	23.9	62	21.5
	Total	289	100.0	289	100.0
Vital signs: Temperature	Yes	145	47.1	163	56.4
	No	9	2.9	10	3.5
	Not recorded	135	46.7	16	40.1
	Total	289	100.0	289	100.0
Investigations done: fasting blood Glucose	Yes	23	7.5	101	34.9
	No	264	91.3	188	65.1
	Not recorded	2	0.6	-	-
	Total	289	100.0	289	100.0
Investigations done: liver function tests	Yes	30	9.7	115	39.8
	No	257	88.9	174	60.2
	Not recorded	2	0.6	-	-
	Total	289	100.0	289	100.0
Investigations done:	Yes	30	9.7	111	38.4

renal function tests	No	255	88.2	177	61.2
	Not recorded	4	1.3	1	0.4
	Total	289	100.0	289	100.0
Investigations done: urinalysis	Yes	26	8.4	112	38.8
	No	252	87.2	170	58.8
	Not recorded	11	3.6	7	2.4
	Total	289	100.0	289	100.0
Investigations done: other*	Yes	33	10.3	116	40.1
	No	240	83.0	163	56.4
	Not recorded	16	5.2	10	3.5
	Total	289	100.0	289	100.0

* complete blood count, uric acid, lipid profile, stool analysis, provider initiated testing and counselling (for HIV infection), thyroid function test, erythrocyte sedimentation rate, VDRL test for syphilis.

4.1.1.6 Factors associated with physical co-morbidity among patients with SMI and physical co-morbidity

A Chi-square test was run to examine the independent association between different socio-demographic characteristics (sex, age, marital status, residence, education level and employment level), substance abuse and psychiatric diagnosis and physical co-morbidity among participants in the study. The results of this analysis are presented in Table 6.

Table 6: Bivariate analysis of factors associated with physical co-morbidity among patients with SMI (N=289)

Variable		Any screening positive for physical co-morbidity					Chi-square test, X ²	Degree of freedom, Df	P-value
		Yes	%	No	%	Total			
Sex	Male	79	37.4	132	62.6	211	0.1	1	0.8
	Female	30	40	45	60	75			
Age	<25	34	41.5	48	58.5	82	1.25	3	0.74
	25-34	36	34.3	69	65.7	105			
	35-44	25	39.1	39	60.9	64			
	45 and above	15	41.7	21	58.3	36			
Marital status	Single	75	37.5	125	62.5	200	3.8	2	0.29
	Married	20	38.5	32	61.5	52			
	Other	11	50	11	50	22			
Residence	Urban	89	43.8	114	56.2	203	6.13	1	0.01
	Rural	14	24.6	43	75.4	57			

									*
Education	No formal education	8	30.8	18	69.2	26	3.1	3	.38
	Primary	22	33.3	44	66.7	66			
	Secondary	43	44.3	54	55.7	97			
	post-secondary	26	35.1	48	64.9	74			
Employment	Employed	16	37.2	27	62.8	43	.02	2	0.99
	Unemployed	70	38.5	112	61.5	182			
	Other	13	38.2	21	61.8	34			
Alcohol use	Yes	10	52.6	9	47.4	19	2.11	2	0.34
	No	69	40.3	102	59.7	171			
	Don't know/can't remember	22	34.4	42	65.6	64			
Khat use	Yes	33	35.1	61	64.9	94	3.2	2	0.19
	No	66	43.1	87	56.9	153			
	Not recorded	9	28.1	23	71.9	32			
Tobacco Use	Yes	30	37	51	73	81	3.8	2	0.44
	No	57	43.5	74	56.5	131			
	Not recorded	22	35	41	65	63			
Psychiatric Diagnosis	Schizophrenia	70	41	101	59	171	9.4	3	0.04*
	Other psychotic disorders	12	28.6	30	71.4	42			
	Bipolar disorder	24	48	26	52	50			
	Depressive disorder	8	33.3	16	66.7	24			

As it is shown in the Table 6, 110 (38.1%) participants were screened positive on laboratory investigation. But only 29 participants had diagnosable physical co-morbidity; this is because not all laboratory abnormalities were equivalent to physical illness. It was also shown that 43.8% of urban dwellers as opposed to 24.6% of rural dwellers were screen positive on the laboratory result. The risk of being screened positive for urban compared to rural dwellers was 41.7%. However Table 6 used caseness for screen positive rather than only laboratory diagnosis. The independent chi-square test revealed that only residence and psychiatric diagnosis were significantly associated with physical co-morbidity, ($X^2= 6.13$, $df=1$, $p=0.01$ and $X^2= 9.4$, $df=3$, $p=0.04$) respectively. Table 6 shows that 78.7% were urban dwellers and majority of the participants, 59.6 % were diagnosed as having schizophrenia. The number of Schizophrenia patients here includes catatonic and similar diagnosis which were treated

separately in table 2 above. A higher proportion of patients with bipolar disorder (48%), followed by schizophrenia (41%) were also screen positive. In addition to the bivariate analysis, the overall predictive power of the variables was examined using a logistic regression model. There was no variable which significantly predicted physical co-morbidity, as p values were greater than >0.05 for all variables. The model is shown in the Table 7.

Table 7: Multivariate analysis of factors associated with co-morbid physical conditions among patients with SMI (N=289)

Variables	Odds ratio	95% C.I.		P value
Age	1.00	0.93	1.09	0.91
Sex				
Male	1.00			
Female	4.08	0.52	31.78	0.20
Marital status				
Formerly married*	1.00			
Single	0.67	0.12	4.21	0.67
Married	0.00	0.00	-	0.99
Educational level				
No formal education	1.00			
Primary	3.35	0.11	100.76	0.48
Secondary	0.93	0.03	30.47	0.970
Post-secondary	0.62	0.01	25.90	0.81
Residence(rural)				
Urban	1.00			
Rural	0.52	0.06	4.24	0.54
Employment				
Others **	1.00			
Employed	1.065	0.15	7.23	0.95
Unemployed	6.086	.455	81.37	0.17
Region				
Out of these regions	1.00			
Addis Ababa	0.26	0.05	1.36	0.11
Oromia	-	0.00	.	0.99
Amhara	1.40	0.09	20.03	0.80
SNNPR	-	0.00	.	0.99
Diagnosis				
Others diagnoses	1.00			
Schizophrenia	0.96	0.13	7.22	0.97
Other psychotic disorders	0.61	0.12	2.91	0.54
Bipolar disorder	-	0.00	.	0.90
Depressive disorder	0.70	0.00	.	1.00
Duration of illness	1.00	0.98	1.02	0.95
Duration of treatment	1.00	0.98	1.03	0.66
Duration of admission	1.00	0.98	1.03	0.55
Depot Anti psychotic medications				
No	1.00			

Variables	Odds ratio	95% C.I.		P value
Yes	2.65	0.61	11.35	0.19
Alcohol use				
Not recorded	1.00			
Yes	0.81	0.10	6.79	0.84
No	1.12	0.10	13.34	0.93
Khat use				0.26
Not recorded	1.00			
Yes	0.36	0.09	1.51	0.17
No	0.10	0.00	3.11	0.19
Tobacco use				
Not recorded	1.00			
Yes	1.20	0.17	8.70	1.00
No	0.70	0.09	5.80	1.05

* Divorced, Widowed and Separated

**Those who are working but not employed (example daily labourers)

4.1.2 Additional physical assessment of 30 patients

Symptom inquiry and physical examination was performed by a physician on 30 patients selected based on systematic random sampling from the 289 clinical records, as described in the methods section. This was done in order to check how accurate the clinical records in detecting physical health conditions in SMI patients. The prevalence of physical co-morbidity in SMI in-patients in ASMH was found to be only 10.0% through a review of the records. In order to see if this is a reliable figure I decided to investigate this prevalence through a physician assessment of this sub-sample. Table 8 summarizes the symptoms noted in these 30 patients.

Table 8: Description of symptoms noted for 30 patients

Symptoms	Number	Percent
Cough	6	19.4
Fatigue	5	16.1
Headache	4	12.9
Abdominal discomfort	3	9.7
Diarrhea	3	9.7
Myalgia/arthralgia	3	9.7
Increased libido	3	9.7
Urinary complaint (urinary frequency/urgency/burning sensation on urination)	3	9.7
Feelings of dizziness	2	6.5
Decreased libido	2	6.5
Blurring of vision	1	3.2
Wound on the skin/itching or burning pain on the skin	1	3.2
Abnormal discharge from genitalia	1	3.2
Constipation	1	3.2
Tooth ache	1	3.2

Regarding diagnosis of the physical conditions, approximately a quarter of the patients (22.5%) evaluated by a physician had a diagnosis of infectious disease of viral (mainly HIV), bacterial or fungal etiology.

There were patients with SMI who had more than one physical condition like an upper respiratory infection with fungal infection of the skin, bronchial asthma with an injury to the left forearm due to a fall. The number of patients with co-morbidity and the nature of this co-morbidity are presented in Table 9.

Table 9: Description of co-morbid diagnosis for 30 patients, Addis Ababa, Ethiopia Jan 2015.

Diagnosis	Number	Percent
No physical co-morbidity	14	46.7
Infection	7	22.5
Dental problems	3	9.7
Hypertension	2	6.5
Others (e.g. bronchial asthma, mental retardation, injury to the left forearm, underweight, medication adverse effects)	4	12.8
Total	30	100.0

During physician assessment, 16 out of the 30 patients (53.3%) were found to have at least one physical condition but none of these illnesses were documented on the clinical records. The main record review was not found to be sufficiently accurate in detecting physical illnesses in SMI in-patients at ASMH as documentation of such findings could not be obtained during review of the records. This study found more evidence for the existence of physical co-morbidities in SMI in-patients near or at the time of discharge from the hospital. Treatment was initiated for those who screened positive for physical co-morbidities in consultation with the treating professionals in their respective case teams. This indicates the gap in assessment and documentation of physical co morbidities.

4.2 Qualitative Study

In this study five parallel in-depth interviews with patients and caregivers were conducted. In addition to this we also ran two focus group discussions with health professionals at ASMH and one focus group discussion with health professionals from Black Lion hospital. The results from these transcripts were analyzed using an open code qualitative analysis software. The results found from the analysis will be presented below with four major themes for analysis: psychiatric care provider related; non psychiatric physician related; system related and patient and illness related.

4.2.1 Psychiatric Care Provider Related Barriers

4.2.1.1 Psychiatrists' attitude towards physical illness

The gap in the medical health care delivery of ASMH was a widely expressed view among the all participants. They repeatedly discussed that the care for the physical illness was very much limited as a result of multiple barriers. One of these barriers, Psychiatrists' attitude towards physical illness, was stated by one psychiatric professional as follows:

In this long period of service I served here in this hospital, the professionals here in this hospital believe that they are here to treat only psychiatric illnesses. They believe that their responsibility is for the mental illness as it is a psychiatric specialized hospital. If there is a need for counselling or managing symptoms, they are ready to treat the patient but not for any physical illness. Firstly, they don't understand that there is the physical illness within the psychiatric illness which they are suffering from. If the patient says I have abdominal pain or something related with that, they don't believe his word and couldn't understand their idea properly. For most of the psychiatrists there is no understanding of the need. The patients stay here long without being referred to other hospitals for better care. However there are also some professionals who try to help the patients properly.

[Psychiatric Health Professional, FGD 1]

One of the professionals here made my mother to cry. ...eh... there was an ART medication which is round one. ...yes... At the beginning it was the big one for ART ...eh... then when I finish that, they gave me the small round one. However my mother told him that it was not the one I used to take. I told her that it is the right one as I know it. She didn't believe at all. She asked me to take out of my mouth. Then I took out. Then he spoke to my mother emotionally. He was the one who wear a green overalls. ...eh... then she cried after that. At that time my father and my brother talked him and finally he becomes calm.

[Patient SSI 1]

The psychiatric health professionals shared the view that the setting of ASMH as a specialized psychiatric hospital influenced negatively on the care for physical illness.

4.2.1.2 Health professionals understanding of their role in the care for physical illness

There is also a gap mentioned from the health professionals' side in understanding their role properly at ASMH. Though the roles and responsibilities of the health professionals are clearly identified, these were not sufficiently internalized by the psychiatric health professionals. One participant in the focus group discussion with psychiatric professionals described this as follows:

... the psychiatrist might not be interested to provide medical care as he is employed in a psychiatric hospital and is responsible for providing psychiatric care.

[Psychiatric Health Professional, FGD 1]

This results in the focus being on the psychiatric illness instead of also the physical illness.

4.2.1.3 Not taking patients' history properly

The caregivers interviewed also mentioned that not taking patients' history properly was one of the barriers in physical illness management. As a result of this a patient has lost his life as described in the following quote.

I told to one physician about the case after that especially as he was bitten by the rabid dog and took vaccination. When I came there in ASMH for the first time I told my suspicion of rabies to one nurse. ...okay... I asked him if there might be some ways this might be the case but he told me to keep silent until the doctors investigate that as it might divert their idea. They might be confused with your information he said. I was observing the symptoms from the beginning - the one is saliva and secondly he opens his mouth too much. Taking all these symptoms, I guessed the case to be rabies. When they took him up stairs here, I talked to one doctor about this case that there is nothing found in the investigation. He stayed long hours with us and we assessed too many issues around the patient's history. Finally the doctors came to this assumption. It was not only by their investigation but with my indication.

[Caregiver SSI 3]

All the participants (patients, caregivers, psychiatric and non-psychiatric professionals) stated a possible barrier on not listening the patients and caregivers about their illness and symptoms.

4.2.1.4 Lack of initial screening

The professionals at ASMH stated that lack of initial screening for physical illness was one barrier to care for physical illness. As they expressed it, the medical case team or the

emergency department are not screening patients when they are admitted for psychiatric illness. This was borne out by the record review discussed above. This is encapsulated in the following quote.

As there is no clear rule for the examinations undertaken when they are admitted, there are some case teams where baseline examination is done when they are admitted for care. As my colleagues already said it before, as the illness doesn't happen because of virus or bacteria, they don't think that it is necessary to take medical tests when they are admitted. However sometimes there are some physical illnesses which are found as they are tested at the beginning. There are some patients who are treated as some physical illnesses are found from their baseline assessment.

[Psychiatric Health Professional, FGD 1]

Psychiatric health professionals agreed that the gap in the initial screening of admitted patients is a barrier for the care of the physical illness.

4.2.1.5 Lack of follow up for the physical illness

The patients and caregivers also discussed lack of follow up for their physical illness throughout the process of their treatment for the psychiatric illness. The absence of care for their physical illness while they attend the psychiatric care was a common theme among these participants.

I didn't have any follow up. I stopped it (alcohol) automatically [on my own]. The illness, hypertension and gastritis, began immediately after a week as I stopped taking alcohol.

[Patient SSI 5]

No there was no care yet.

[Patient SSI 1]

In line with this, the psychiatric health professionals indicated the gap in follow up for psychiatric patients after referred to the medical case team.

When any one gets a physical illness in many places he will be referred to the medical case team of the hospital. Afterwards they (the psychiatric health professionals) don't even check whether that person is treated or not.

[Psychiatric Health Professional, FGD 1]

The caregivers also shared this view throughout their narrative of the barrier for the care for physical illness.

There is no treatment for his physical illness while for his psychiatric illness they are doing a lot for him. I am getting help for the psychiatric illness. Eh... There might be services for his physical illness for the future.”

[Caregiver SSI 2]

I think it was good if there was follow up for the physical illness which he is suffering from. Eh... Regarding his legs Eh... I knew nothing whether he is paralyzed or not yet. I would be happy if this is investigated. Eh... It is not only about the psychiatric illness but for his physical illness to move with his leg.

[Caregiver SSI 2]

The medical health professionals also shared this view as follows:

The other is if there is strict follow up. If the family learns how to follow the patient, it will be easy for the care as they could follow the patient well.

[Medical Health Professional, FGD 1]

All the participants (patients, caregivers and health professionals) indicated the gap in follow up for the physical illness of psychiatric patients during their stay at ASMH.

4.2.1.6 Lack of proper medical treatment

The barrier to physical care at ASMH is in part due to a lack of basic medical equipment for the treatment of physical illnesses. The health professional also recommended the need for medical facility.

There is a situation in which these physical illnesses could be treated in separate case teams in our hospital set up. In some case teams sometimes psychiatric and physical illnesses are being treated together in some occasions. As there might be situations in which physical illnesses and psychiatric illnesses happen together and impact one another, these also screened within the laboratory facilities existing in our hospital.”

[Psychiatric Health Professional, FGD 1]

I prefer if he is given treatment for his gastritis and hypertension as I think he could be free of stress when he is free of these physical illnesses.

[Caregiver SSI 5]

It is in that way. It is up to this and with the medication other than the pill previously surgery especially this my one eye was disabled because of surgery ...Ehh... when I was operated for my right eye and my eye was damaged in 2002 I was immediately referred to St. Paul Hospital then I was taking eye drops and oil for five months. Finally the professor saw my eye and he recommended for surgery as my eye doesn't see anymore and my eye was taken out. That was all.

[Patient SSI 5]

There is no endoscopy test here.

[Caregiver SSI 5]

Yes they didn't see any medical examination. It is only with what I tell them that they prescribe medication.

[Patient SSI 5]

The participants of the study (patients, caregivers and psychiatric and medical health professionals) cited the problem of a lack of a medical diagnosis as a barrier. A medical diagnosis was not done for most of the medical cases for psychiatric patients.

4.2.1.7 Lack of enough space and basic medical facilities

The caregiver for a patient referred to Black Lion Hospital (general hospital) also mentioned the barrier which they experienced:

We also complained for the doctor as we are tired of pumping the oxygen [the oxygen cylinder works manually]. Then he ordered the big oxygen cylinder.

[Caregiver SSI 3]

Even to help the patient here it is difficult as it is full of challenges moving from one ward to the other for example from a ward which has oxygen to bring from that room to ward 10, it is too difficult to move from there to here as the hospital has steps and is not convenient.

[Psychiatric Health Professional, FGD 1]

There are problems with the set up. There is no enough space for an OPD (Outpatient department) for a medical ward. It is too difficult to admit physical patients in wards.

[Medical Health Professional, FGD 1]

All the participants discussed lack of space and basic medical facilities as a barrier for delivering care for physical illness.

4.2.1.8 Low motivation of the health staff in providing care for physical illness

In addition to all these, the health professionals discussed that the motivation of the staff to provide care for physical illness is low.

There is no staff who has an interest to work on such complicated cases adjusting IV and urinary catheter.

[Psychiatric Health Professional, FGD 1]

The professionals at ASMH gave a possible explanation for the lack of motivation as differences in how staff are paid for working in what is understood to be a high risk context.

There was some problems with relation to the payment for working in high risk conditions for psychiatric nurses and psychiatrists working in that area. However the clinical nurse, cleaner and guards are not covered with this payment. These workers complain as they are working in similar environment. It is right that they are working in a similar environment. As a result of this there is a tendency of having less motivation for the work. It will be good if there is a study on this area and if they deserve it they should be benefited for it.

[Psychiatric Health Professional, FGD 1]

All the participants discussed how the psychiatric care provider related barriers affected the care for physical illness.

4.2.2 Non-psychiatric Physicians Related Barriers

4.2.2.1 Resistance to admit a person with psychiatric illness

The study participants, in the ASMH professionals' focus group discussion, explained that the problem for physical care of people with severe mental illness begins with the resistance to admit the psychiatric patients by general hospital professionals. The physicians might have reason for this, such as fear of harm to themselves and fear of disturbing other patients.

Okay what we face in such cases is the patient with severe mental illness is referred for further treatment, there is a resistance to admit or accept for treatment. It might be because of the disturbance he creates in the health facility or even when he arrive at the health facility.

[Psychiatric Health Professional, FGD 1]

There is also another challenge from the health professionals' side. It is because the health professionals at the medical settings. It could be only if they had prior exposure to psychiatric cases that they could manage effectively. Unless they had exposure, they fear treating patient with psychiatric case.

[Medical Health Professional, FGD 1]

The professional might resist taking the patient because of his prior experience of resistance to admit the patient from the hospitals side.

[Medical Health Professional, FGD 1]

The health professionals fear to treat a mentally ill patient even we /the professionals too. They are cooperative merely because we are from Amanuel. They say there is no bed. No hospital is cooperative to accept a mentally ill patient. They believe that every psychiatric patient is aggressive, homicidal. In my experience I was insulted by a physician because I took a psychiatric patient. Thus there should be an awareness raising system. In my experience, I was at St. Paul hospital with a patient who was referred from our hospital. In the first time the physician refused to treat. I was sad by his action. I begged him but he told me that he will not treat any patient from Amanuel. Later the patient shouted at him and forced him to treat her. Then the physician was harsh to her while treating her. Finally she (the patient) educated him as she does not harm anyone as he thought. Limited awareness about mental illness from general medical practitioners is a problem in the referral process.

[Psychiatric Health Professional, FGD 2]

All professionals from ASMH agreed that there is problem in admitting a patient with psychiatric illness to a general medical hospital.

4.2.2.2 Lack of clear cut procedure to treat person with psychiatric illness

The health professionals from ASMH discussed their experience of barriers at the health facilities (Black Lion hospital and St. Paul hospital) for physical care.

It was very much difficult to do the nursing care and connecting her IV. It was as she was not cooperative to the care. Most of the time we do not provide them care as any other patient with physical illness because we are afraid of them. There is a gap in our relation with them because of our own attitude.

[Medical Health Professional, FGD 1]

When we talk to the patient there, as there is no clear cut procedure for handling them, the health professionals might resist admitting unless we gave our identification card as a precondition. We are forced to pay for the card but we are professionals helping the patient being employed with your qualification for a specified task.

[Psychiatric Health Professional, FGD 1]

Though we usually try to help these kind of patients, as the reality is different, they are not adherent. It was the family which helps us. If the patient cannot understand, the family could refuse to take medication. Even when we ask her about her illness history, she reports as she had no symptom which her mother says she has. The patient's mother explains with concrete examples of the symptoms. We easily understood her problem with her explanation. Later on we asked for consultation from the psychiatry and as they intervene in her treatment, we achieved better improvement in her health (the psychiatric as well as the physical illness). As the psychiatrists intervene and changed the drugs, we got a result of her bone marrow free of leukaemia.

[Medical Health Professional, FGD 1]

4.2.2.3 Stigma towards psychiatric patients

The participants of the focus group discussion at ASMH described how the professionals in general hospitals, where the psychiatric patients are referred for their physical illness, stigmatize the patients referred from ASMH.

In addition to this even the patient might be stigmatized because of his pyjama as they identify him as a psychiatric patient.

[Psychiatric Health Professional, FGD 1]

The medical health professionals, from Black Lion hospital as a general hospital, also discussed this as follows:

As far as they came here, they get the care but there is difference in the care delivery compared to other patients with physical illness. When we compare the care the care being delivered to psychiatric patients it is minimal. It might be because of the fear of the health professional. The illness could be communicable and also the psychiatric illness makes inconvenient for care delivery. The health professional avoid that patient in favour of their wellbeing. The care therefore is not equal with that of other patients. When a patient comes with concomitant physical and psychiatric illness the care is completely different.

[Medical Health Professional, FGD 1]

Yes while others see you as mad. Am I a mad person with this pyjama? The person with psychosis means a great deal. It is too difficult.

[Patient SSI 7]

Based on the views expressed above, there seems to be agreement among all participants (patients, caregivers and health professionals) that there is a problem in accessing general health care for physical illness.

4.3 Systemic barriers

4.3.1 Facilitator for services

4.3.1.1 Access to service

Amongst the participants of the study (patients, caregivers and health professionals) all of them had a sense that ASMH provided the required special care for their psychiatric illness and physical co morbidity up to a point. Most of the care givers acknowledged the contribution of the hospital in the health improvement of the patient's health condition, while psychiatric health professionals at ASMH commented on the support provided by the hospital to patients coming from all over the country. One health professional expressed this by saying:

As a general hospital or as a psychiatric specialized hospital there is a situation where many patients come here to get treatment. It is known that this hospital is delivering a

psychiatric treatment for patients who have psychiatric problem coming from all parts of the country. ...

[Psychiatric Health Professional, FGD 1]

The patients and caregivers in all SSIs testified as to the positive contribution of ASMH for their current improved situation. They commented nevertheless that the medical care being provided is inadequate. The professionals at ASMH also indicated that there were cases with both physical illness as well as psychiatric illness treated in the medical wards.

There is a situation in which these physical illnesses could be treated in separate case teams in our hospital set up. In some case teams sometimes psychiatric and physical illnesses are being treated together on some occasions. As there might be situations in which physical illnesses and psychiatric illnesses happen together and impact one another, these are also screened within the laboratory facilities existing in our hospital.

[Psychiatric Health Professional, FGD 1]

Our physicians don't have any unwanted behaviour related with our treatment. Honestly speaking from the very beginning up to the end the professionals in this hospital treats us with compassion, care and humanity. I can't express to you what my I feel. It is beyond my ability to express it. I simply say this hospital is 'my home'. I usually say I come to my home when I come here. One day my sister said you all the time say my home where is your home there is no any home here. However I say this is my home. The people here are sad for me and loves me very much.

[Patient SSI 1]

All patients, caregivers and professionals agreed on the positive contribution of ASMH despite the limitations in the care provided.

4.3.1.2 Financial problem

The other widely shared view among the study participants was the financial difficulties patients and their caregiver experienced in managing the health of the patient. They do not have enough money for the treatment and medication for the patient. This is due in large part to caregivers having to take care of the patients and hence not being able to earn anything.

Yes. I am living with my mother. ...okay... It is very difficult to get money and go to the hospital. ...okay... I came here even with the opportunity that one of my relatives gave me. I couldn't get even for my transport cost. ...eh... It is not easy for me to wait my turn in a series of patients in the hospital and also to return back for another appointment is tiresome. ...eh... I don't think any way to follow my treatment.
[Patient SSI 5]

The other problem in addition to the disorganized setting, the patients might be from a rural village far from Addis Ababa. Therefore they might not have any social as well as financial support during their stay here.
[Psychiatric Health Professional, FGD 1]

There is her younger brother who got job this year after completing his study. He is the one who is helping me for the medication as well as transportation for her treatment. I lend money from a woman to buy medication and I told him now to send me money to pay that loan. He is in Alemaya University working there as lecturer. He went there this year. It is him who helps me to care for her. If he wasn't there to help me, I wouldn't be able to care for her.
[Caregiver SSI 3]

All participants (patients, caregivers and health professionals) discussed that the patients and caregivers face financial problems throughout the treatment period.

4.3.1.3 Lack of bed, transportation and trained health professionals

All participants commented on the poor access for the health services. They stated that lack of beds and health professionals in the health facilities as barrier to the care for physical illness. The professionals who used to take patients to the other referral hospital also stated that lack of transportation is a barrier for the physical care of patients.

Yes he already was in coma. The doctor even called to different hospitals such as Zewditu and Tirunesh hospitals for the availability of bed but there was no bed. So that we came here [Black Lion Hospital] finally after the doctor approached the Black Lion hospital because of his critical condition. The other doctors already said take him to any private health facility before this doctor asked this hospital.
[Caregiver SSI 3]

We think of the inconvenience we face beginning from the driver up to the hospital as challenges. We are in hurry while we get treatment for the patient as we are concerned about the transportation. If we stayed at the hospital for long hours, the ambulance might return to ASMH. In that situation we cannot get any transportation. That doesn't seem even a medical care but it is worthless trip.

[Psychiatric Health Professional, FGD 1]

However, it is controversial whether it has enough beds, well-educated and trained physicians and specialists or not. It is because there are no enough physicians organized to treat the physical illness. It is not saying that the physicians who are working are not good but it could be better to deliver the service with two or three specialists.

[Psychiatric Health Professional, FGD 1]

Here what we have to see is the main challenge to get psychiatric patients treated for their physical illness is the absence of health professionals in all areas of the medical specialization. It is because the absence of medical specialist in the hospital when a psychiatric patient is sick with a physical illness is one obstacle for the care.

[Psychiatric Health Professional, FGD 1]

The health professionals here in the medical care setting do not have enough special training in psychiatric diagnosis. It is only for a short period. There is not that much exposure. They simply say 'we do not know'. Then diagnosing the illness in such situation is difficult for us. Though we try to consult the psychiatric unit with suspected psychiatric cases, the link is very weak. The patient could die or discharged without being diagnosed. The patients coming here for the physical illness might return without treatment for their psychiatric illness. The link between the departments is poor. Even those who came having the psychiatric illness couldn't get technical advice on the prescribed drugs with due consideration of their physical illness. It is very difficult to get advice on whether we should increase or decrease the dosage and also to see other alternatives.

[Medical Health Professional, FGD 1]

Similarly one of the FGD participants of the psychiatric health professionals described how this lack of professionals created a large gap in the psychiatric setting.

We treat minor medical illnesses which could be treated with antibiotics, such as diarrhoea, customarily in this hospital setting. It might be because of the shortage of physician, the hospital setup or the current system within the hospital.

[Psychiatric Health Professional, FGD 1]

Here all participants (patients, caregivers and health professionals) shared the view on the barriers being lack of beds, transportation and health professionals in the care of the physical illness.

4.3.1.4 Lack of medication

In addition to the barriers related to psychiatric, non-psychiatric and system factors the caregivers and patients raised lack of medication as a barrier for the care for physical illness. They discussed the challenge of getting the medication prescribed for the physical illness.

Regarding this the public hospitals don't have enough medication. This is the main problem there. It is because if you see the parents of this patient, they came from rural areas. They don't have enough money for the treatment there. If those medications were accessible there in the hospital, it could be with a lower price like 50 birr. I asked the pharmacist in the hospital ...Eh... he asked me how much I bought the medication and I told him that I bought it 200 birr. He told me that if it was available in the hospital pharmacy, it could be 50 birr only. If such things were available, the big problem is this.

[Caregiver SSI 4]

The caregivers and patients discussed lack of medication at the public health facilities as a barrier for the physical care.

4.3.1.5 Suggestions for changes to be implemented

All the participants of the study (patients, caregivers and psychiatric and medical health professionals) made suggestions on potential interventions to improve the situation. These suggestions emphasize the need for organizing ASMH as a general hospital in addition to being a psychiatric hospital. They also include establishing clear roles for the staff, setting up basic facilities and well trained human power to provide quality care for physical illness.

Okay what we think as the solution for these barriers is making the hospital complete as a general hospital. Employ those professionals which we already discussed before such as specialist for mothers and paediatrics, independent surgical specialist, neurologist as there is a psychiatrist. Have trained specialists or train the existing staff in those fields as one solution.

[Psychiatric Health Professional, FGD 1]

In addition to the psychiatric diagnosis, the medical illness should be seen. I think this hospital has a separate clinic for physical illness ...okay... but I was always seen by the psychiatrist without proper investigation for my physical illness.

[Patient SSI 5]

It will be good if there is at least one psychiatrist in a ward to consult these kind of cases. It is difficult to take the patients to the psychiatric unit as it is not conducive for the patients. The patients come here having physical illness. This makes difficult to move from one building to the other.

[Medical Health Professionals, FGD 1]

This shows that all the participants have similar views on the potential intervention which should be taken to improve the care delivered for the physical illness.

4.3.1.6 Recommendations on the health professionals' conduct and basic medical facilities

The professionals strongly recommended creating awareness for the professionals about their roles and responsibilities in caring for patients with severe mental illness.

The other problem we observed here is the awareness of the professional on their role and duty created problems on delivering quality care. There is no clear cut role on who collects samples, whether it is the nurse or the laboratory technologist. Sometimes when the nurses help the laboratory technologists they might exchange the blood chemistry sample with the haematology. There might be some confusion about which the CBC (complete blood count) sample is collected. This is the matter of not knowing clearly which one is for which sample. The laboratory technologist who is trained with all this might say 'I will work in the laboratory with the microscope so that I won't collect blood samples going here and there'. As a result of this here in this hospital it is the nurses who do this task. The nurses mightn't have the knowledge about the sample and

they might take CBC with the blood chemistry sample container. Finally it will be discarded as it won't be the right one.

[Psychiatric Health Professional, FGD 1]

It is better to treat the patient as a whole person instead of treating the physical or psychiatric illness. This needs strong coordination between the medical and psychiatric unit in the hospital [Black Lion Hospital]. There should be a strict follow up from both sides for the better treatment of the patient.

[Medical Health Professionals, FGD 1]

The other is making the hospital equipped with the necessary equipment from laboratory up to other electronic machines beginning from X-ray up to CT scan and MRI machines. If the hospital fulfils these needs the challenges could be solved.

[Psychiatric Health Professional, FGD 1]

The health professionals at ASMH has indicated the gap in the health professionals and basic medical facilities needed at the hospital.

4.3.2 Patient and Illness Related Barriers

4.3.2.1 Lack of caregiver

The major problem in the care for physical illness of patients with severe mental illness is lack of care givers or caring attendants. The patient's situation depends highly on the availability of a caregiver, quality care and follow up.

...patients with severe mental disorder mightn't have family or a caregiver with him.

There are challenges when these patients go with the staff.

[Psychiatric Health Professional, FGD 1]

The betterment of the patients with psychiatric illness depend on the care provided by the caregiver or their family. If the caregivers are caring, the treatment will be good.

However if they are not caring for them, the treatment will not be good. I had experienced caregivers who went back to their home letting the person here. The patients did not have anyone who could take samples for investigation and follow them.

[Medical Health Professionals, FGD 1]

... Secondly, I am too much exposed to long term loneliness. As I don't have anyone from my family, I am vulnerable for loneliness. ...Eh... I lost my father and also my mother. I also lost contact of my brother.

[Patient SSI 1]

Psychiatric illness has a tendency to expose the patients to different side effects and physical illnesses for example regarding HIV/AIDS are being treated here. Firstly, their families don't provide support and close care for some mentally ill patients and they are vulnerable to HIV/AIDS and poverty.

[Psychiatric Health Professional, FGD 1]

All participants (patients, caregivers and health professionals) agreed on the need for a caring attendant for the improvement of their health.

4.3.2.2 Caregivers' lack of knowledge about the illness and side effects

The caregivers reported that they do not clearly understand the illness and the associated side effects of the medication for the patient whom they care for.

I don't know. Even no one knows from the family. She says that she feels stressed and she cries and also wants to go out of home. She goes to any place which she doesn't know. If one of the family members tells her to do what she doesn't want, she will go out. It is this way.

[Caregiver SSI 4]

The other is the attendants should know much about the illness. Here in our community if a person has mental illness, he will not have any worth. The caregivers think to take him home and put him somewhere. Therefore the attendants should know about the illness and the progress which he could experience. If they have hope on the progress of the patient's health, they could explain why he behaves in that way within the community using their awareness about the illness and side effects of the medication.

[Medical Health Professional, FGD 1]

We used to say that she is safe now as she doesn't talk anything. ...okay... Then when the illness is to relapse, she will talk automatically. ...okay... she doesn't listen what others say. She doesn't give a turn for others to talk. She simply talks without any pause.

[Caregiver SSI 8]

According to the caregivers and medical health professionals caregivers are not sufficiently knowledgeable about the illness.

4.3.2.3 Vulnerability

As a result of the absence of a caregivers outside of the hospital context the patients are exposed to different physical and psychiatric risks. This includes the lack of shelter, and other basic needs. This was noted by patients, caregivers and professionals.

Some female patients could even be exposed to a street life. In that circumstance they might also face forced sex and rape.

[Psychiatric Health Professional, FGD 1]

He disappeared from our village. I was searching him from place to place but I couldn't get him. I got him after five years. I got him this time after he faced this accident. He faced a car accident for four times. This was the fourth time. When he got a car accident for three previous times nobody knows whether he got treatment or not.

[Caregiver SSI 2]

All the participants (patients, caregivers and health professionals) pinpointed the need for caregivers in order to improve the physical as well as the mental health of the patients both within and beyond the hospital and to limit the vulnerability of patients with SMI.

4.3.2.4 The Psychiatric illness itself

The participants (patients, caregivers and health professionals) described how the psychiatric illness itself is a barrier to accessing care for physical illnesses of people with severe mental illness.

Firstly, they couldn't give their history properly; when they go they will be unstable and might be considered as violent and distractive. There is this wrong assumption from other people and also from the health professionals.

[Health Professional, FGD 1]

Yes. His parents suffered a lot in addition to the inconveniences they passed through when they come from their area. It was too difficult to handle the patient. It was even more difficult when he is on the bed. His situation was so serious at that time. We had that challenge until the doctor comes there.

[Caregiver SSI 4]

Here when they come having psychiatric illness and physical illness at the same time, we used to give care for the physical illness. When we care for the physical illness, the psychiatric illness restricts us from giving a better care. It is somehow challenging.

[Medical Health Professional, FGD 1]

It is because the person with psychiatric illness doesn't tell you properly when he is sick and he doesn't know inappropriate things or acts. ...eh... he will be in an instinctive behaviour that he will do everything. I haven't ever seen such an illness and now I have seen him. I was so sad when I see that. It is because if anyone is sick his leg, his hand, his eye or any part of his body might be sick.

[Caregiver SSI 4]

All participants (patients, caregivers and health professionals) shared the view that the psychiatric illness itself is a barrier for the care for the physical illness.

4.3.2.5 Attitude of caregivers and patients about the hospital care

The caregivers described the hospital care as a barrier for the care for physical illness. This related to their and patients' views and attitudes about the modern medical treatment which is the focus of treatment at ASMH. They expressed the need to consider other forms of treatment, such as visits to the holy water and other alternative forms of treatment.

Then we asked permission to take him to the holy water...okay... But they asked us to wait in patiently for its result and the treatment [from Minilik Hospital]. They also told us that the illness could be treated there [Minilik Hospital]. However the family wanted to go out there and they let us to go.

[Care giver SSI 4]

It is because she now believes more in Holy water treatment. She said that her gastritis couldn't help with that. ...eh... she stopped the medication as it hearts her gastritis.

[Patient SSI 1]

All the caregiver and patient participants underlined that the attitude of caregivers and patients has a central point in the care for the physical illness. The attitude of the caregivers and patients towards the modern treatment as it doesn't help them, affects access to care.

4.3.2.6 Stigma from the community

The participants also raised the stigma from the community as a barrier for the care for the physical illness of people with severe mental illness.

If you are not sick mentally... you can get help for example if you go directly to the health facility or by calling someone to support through phone. It will be by calling and discussing or by calling to your work place or by searching someone to be around you and they also accompany you. Everyone can accept you without any problem if you have good mental state. However if your mental state is not normal, you will be a silly thing for anyone. This is the situation.

[Patient SSI 1]

Even my neighbours stigmatized me. Let me tell you one thing. I felt bad when all my neighbours they stigmatized me because my daughter is sick. I feel bad for this and cry when I remember that. ... It is not a reason for stigma but it is the awareness problem within the community. They ostracized us among the community member.

[Caregiver SSI 7]

The psychiatric illness - I have relapses when I see that my family don't eat the food which I was eating and they don't give that food even for the dogs. This act disturbs me and I feel bad about that. It is only my mother who eats the food left from me. My father eats here recently. It is only my mother who did everything and cares for me. If the virus was transmitted to her she might die as she doesn't eat food properly. However God saved her from that. She was tested here and already free from the virus.

[Patient SSI 7]

There should be much awareness raising work in the community. It is because if there is awareness throughout the community, there will be a better outcome towards facing the challenges faced throughout the treatment.

[Medical Health Professional, FGD 1]

All the caregiver and patient participants discussed stigma from the community as a barrier for the care for physical illness. The stigma which the community manifest hurts the patients and caregivers as they miss the psychosocial support which they could get.

4.3.2.7 Summary of qualitative findings

In general all participants of this study had concerns on the service delivered for the physical illness for patients with SMI. The participants all reported barriers that are related to psychiatric care providers; non psychiatric physicians; health system and patient and illness. The barriers faced by the participants resulted in poor health care delivery. This in turn resulted in complications in their physical and psychiatric conditions, even resulting in death for some patients with SMI. These barriers were evident in less than adequate medical care for physical co-morbidities in ASMH and poor follow up of physical illness in the other health facilities. Almost all of the participants recommended the need for medical as well as psychiatric care at the same setting. It was also underlined that the coordination and strong follow up of the two aspects, the medical care and the psychiatric care, needs are instrumental in determining favourable outcomes.

5 Discussion

This study was the first mixed method study conducted to examine barriers to care for physical co-morbidities among patients with SMI in Ethiopia. It explores the major types of physical co-morbidity and the barriers that affect the care delivery for those physical illnesses. The research aimed to examine prevalence of physical co-morbidities, associations of various socio-demographic factors and barriers to care for physical co-morbidities in SMI patients admitted to a psychiatric referral hospital over a three month period.

A particular strength of this study was the inclusion of all groups related with the issue (the patients, caregivers, health professionals from the psychiatric setting and those from the general health facility). The study also reviewed the medical records of the patients in addition to the qualitative findings. The findings found from the quantitative study, the prevalence of physical co-morbidity and the types of physical co-morbidity were supported with exploration of the major barriers for the care delivery of those cases.

This study included estimating prevalence of physical co-morbidity at different points in the study. These included the prevalence from the record review of 289 at the time (or within 48 hours) of admission with a repeated review of the records, including laboratory screening, at discharge and through the assessment of a sub-sample (N=30) of the 289 patients' records.

Both the record review on 289 patients and physician assessment on 30 patients systematically selected from the 289 showed evidence for the existence of physical co-morbidities in SMI patients. I worked out by running SPSS 21 in analytic statistics for any screen positive and detected physical illnesses using Kappa. Comparison of record review findings with physical examination performed by physician on 30 patients was done using kappa level of agreement; value was 0.13 which was poor. However, the two methods differ in certain ways as described below.

Those physical illnesses found from record reviews were few in number but more severe, some requiring urgent intervention. Examples of these include rabies encephalitis, pneumonia, diarrheal disease, sexually transmitted and urinary tract infections. Some of these patients were on invasive treatments on the wards, such as intravenous infusion and antibiotics, nasogastric tube feeding. Thus, their illnesses were more likely to be documented on the clinical records and identified on admission.

Those SMI patients evaluated by physician showed milder forms of physical co-morbidities which could easily be missed during psychiatric assessments. As a result, they may not be documented on the patients' records. Examples of such physical illnesses were skin and soft tissue infections, upper respiratory tract infections, bone and dental injuries. Some of these, like bone injuries with deformities resulting from accidents, were not amenable to treatment at the time of assessment.

5.1 The Prevalence of Physical Co-morbidity among people with SMI

This study had explored the prevalence of physical co-morbidity and the main barriers for medical care. There are a number of areas that this study clarified. The findings revealed the data on gender that the majority of patients admitted with SMI during the study period were male, and only a quarter were females. They were relatively young in age (<40 years), primarily single, living in Addis Ababa and unemployed. The most common diagnosis at discharge in the study was Schizophrenia followed by mood disorders; length of hospital stay of at least a month, also correspond to the previous study in the same setting (Fekadu, 2007). The finding in the prevalence of physical co morbidity among people with SMI reveals that schizophrenia is the main psychiatric disorder in admitted SMI patients at ASMH is understandable because there are high numbers of psychotic cases who are receiving the service at different psychotic case teams in addition to the emergency case team. In a study describing patterns of admissions to ASMH in 2007, similar psychiatric diagnostic findings were found in the same setting (Fekadu, 2007).

This study found a prevalence figure of 10% which is quite low compared to other studies which reported higher prevalence, increased morbidity and mortality rates in SMI patients. The study by Parks and colleagues (2006) showed that people diagnosed with SMI who have physical co-morbidity die at least 25 years earlier than people without SMI, largely owing to preventable medical conditions such as diabetes, cardiovascular disease and respiratory and infectious diseases (Parks et al., 2006). These authors report that 60% of premature deaths in persons with schizophrenia are due to medical conditions such as cardiovascular, pulmonary and infectious diseases. Specifically the study reports a prevalence of Obesity (45-55%), smoking (50-80%), Diabetes (10-14%) and hypertension ($\geq 18\%$) in patients with schizophrenia. While this study did not look at mortality in more detail, the findings from other studies highlight the importance of ensuring that physical illness is identified and treatment initiated early for effective management. However my study showed that only 10.0% of

admitted patients with SMI were identified as having a physical co-morbidity in ASMH. This is in strong contrast to a National Co-morbidity Survey Replication (NCS-R) which found that more than 68 percent of adults with a mental disorder (diagnosed with a structured clinical interview) reported having at least one general medical disorder, and 29% of those with a medical disorder had a co-morbid mental health condition (Druss, Zhao, Von Esenwein, Marrato, Marcus, 2011).

Furthermore, modifiable lifestyle risk factors such as psychoactive substance use (Maj, 2009; Parks et al., 2006) were reported as co-morbid problems with prevalence of 75% compared with 23% general population in United States. Similarly in the current study a third of the participants used khat and just over a quarter used tobacco. However, the inconsistencies in reporting and documenting use of these substances in case records may result in an underestimation of such use.

Relative to other factors determining mortality in patients with SMI, research suggests that physical illness co-morbidity is one of the significant factors for mortality in patients with SMI. Even in countries where the quality of the health care system is generally acknowledged to be good, about 60% of the mortality is due to physical illness (Parks, Svendsen & Singer, 2006). The current study also revealed over all co-morbidity prevalence of 10.0%. Half of the patients in this study got laboratory test by the time of their discharge from the hospital. This suggests that many milder forms of physical illness are missed at the time of admission and are sometimes identified during the in-patient period, which shows neglect and not following the required standard of care (Cohn & Sernyak, 2006). The more common diagnoses are infections, and specifically HIV infection. This was borne out by the range of diagnoses at the time of discharge. This signifies that close follow up and monitoring of the patients' health status are required (Marder et al, 2004).

Over all the study reveals that there is poor physical health care in the study context (AMSH) based on the results from the quantitative record review and the qualitative exploratory enquiry for barriers to the care for physical illness. The participants of the qualitative focus group discussion from the health professionals in ASMH reported that the physical care in the hospital was given low attention. However the integrated care model of both care for physical and psychiatric illness can contribute to better health outcome (Borba, 2012).

5.2 The barriers to access health care for physical Co-morbidities

The factors identified in this study as barriers and facilitators to accessing health care for physical co-morbidity are similar to those summarized by De Hert and colleagues and other researchers as described in the literature review (De Hert, Cohn, et al., 2011b). The factors identified were considered in four categories; namely, a) factors related to professionals; b) factors related to patients and their illness; c) services and/or systemic factors; and d) treatment related factors. Not seeking care (Phelan et al., 2001), tendency to focus on mental illness only (Colton & Manderscheid, 2006; Phelan et al., 2001), stigmatization (Phelan et al., 2001) and financial barriers (Saraceno et al., 2007) are said to be among the main patient, provider and system related barriers to physical care discussed in the literature and were also critical factors reported in this study.

The physical care related barriers which were investigated from this study under psychiatric care provider related barriers were psychiatrists' attitude towards physical illness; health professionals' understanding about their role in the care provision for physical illness; not taking patients' history properly; low motivation to manage the medical care; lack of initial screening, proper medical diagnosis and treatment; lack of enough space and lack of follow up. These barriers clearly showed that the ASMH gives much more attention and focus on mental illness care compared to the care for physical co-morbidity. The health staff's understanding and awareness about the physical care for psychiatric patients also had its own implication on the diagnosis and treatment of psychiatric patients' physical co morbidity (De Hert, Correll, et al., 2011; Fleischhacker et al., 2008).

Resistance to admit a psychiatric patient by non-psychiatric care providers is related to a lack of awareness and attitude about psychiatric illness and is a major barrier in non psychiatric health facilities. The Medical professionals believe the patients may disturb other medical patients and even they fear harm by the patients to themselves. In all health facilities, but specifically in AMSH, there is lack of clear procedures for screening and management of physical illness. This is related to lack of facilities for physical examination or follow up for the physical illness, insufficient number of beds for medical patients, lack of proper medical diagnosis, lack of necessary equipment and low economic status of the patients to pay for examinations which could be done in a private health facility. Mental health professionals also have erroneous belief towards physical illness, such as a tendency to interpret symptoms in a psychiatric way, low motivation to do physical examination and assessment for physical illnesses. Since the patients themselves may be unable to understand their illness, this affects

their health seeking behaviour. Patients also face transportation problem to go to the referral hospital.

Regarding patient and illness-related factors, lack of money (homelessness), and lack of awareness to their illness (not seeking adequate physical care) were found to be important barriers in other research studies (Phelan et al., 2001; Robson & Gray, 2007; WHO, 2005). The latter researchers added migrant status and/or cultural and ethnic diversity, lack of social skills and difficulties communicating physical needs as other potential barriers.

According to the findings from the quantitative study there was a difference in laboratory result and vital sign (blood pressure, pulse rate Respiratory rate and blood temperature) at the time of admission and at the time of discharge. Although there was an increase in the number of tests and results available at the time of discharge, there remains a limited use of these investigations for timely and effective identification of physical illness. Health professionals from ASMH and caregivers reported that there is a lack of basic health facilities to diagnose physical illnesses. The outcome is that there is gap in diagnosis of physical illness in the hospital setting.

As discussed above, many of the factors found in this study have been clearly documented in existing literature. Over all the study reveals that there is poor physical health care in the study context (AMSH) based on the results from the quantitative record review and the qualitative exploratory enquiry for barriers to the care for physical illness. The participants of the qualitative focus group discussion from the health professionals in ASMH reported that the physical care in the hospital was given low attention. However an integrated care model of both care for physical and psychiatric illness would contribute to better health outcome (Borba, 2012).

5.3 Limitations of this study

The researcher acknowledges the following limitations of this study:

Firstly, the study relied on record reviews to estimate the prevalence of physical co-morbidities in persons with SMI which did not give realistic results in in-patient setting. However, it did provide interesting findings on the lack of identification of physical illness especially when these are mild or moderate in severity.

Secondly, caregiver-related barriers to accessing physical health care in SMI patients were not thoroughly explored, including understanding the extent of collaboration among mental health professionals and caregivers of patients.

Finally, it is a facility-based study and the findings cannot be generalized to the whole community at large.

5.4 Recommendations for future research

This study gave an opportunity to explore the barriers in the care delivery for co-occurring physical illness in patients with SMI; it could be used as a baseline for further studies to understand barriers in the access of health care for this marginalized group of patients. In this regard community based studies, studies aimed at interventions for the barriers or on facilitators for services, are needed.

5.5 Recommendations for policy and practice

The findings in the study suggest that integrated mental and physical health care services are essential to address some of the barriers; this is in line with the Mental Health Strategy of the country. Protecting and promoting physical health in persons with SMI has ethical and public health relevance. Thus, it has implications for policy in that the human right issue of the mentally ill people needs to be addressed. Mental health professionals need to be trained on the prevention, early detection and treatment of physical illnesses in people with psychiatric disabilities. Guidelines are needed regarding the physical health assessment of the patients and responsibilities set for the different health professionals. There needs to be collaborative effort among the different stakeholders: service providers, patients' caregivers, policy makers and other concerned bodies.

6 Conclusion

This study found that physical illnesses in SMI patients are under diagnosed and also supplemented by poor documentation in the clinical records. This gap in ASMH created a situation which is characterized by poor health care for the physical co-morbidity of patients with SMI. The inadequate medical facility of the hospital and poor attention given for physical illness by the health professionals contributed to under diagnosis of the physical illness.

According to the study result, numerous barriers exist that hinder access to physical health care in this group of patients and interventions geared towards tackling these barriers are required. The attitude barrier among the health professionals, both the psychiatric and non psychiatric illness affected the health care provided to the psychiatric patients. In addition to this the hospital system for the care of psychiatric illness resulted with inconveniences for the patients and caregivers.

The coordination and collaboration of the psychiatric and medical health care was raised as a major suggestion by the study participants. Furthermore this study found the need for integration and scale up of the care provided to people with SMI.

Generally, the physical health care being given at ASMH needs modification with a wide range of attitudinal change work and improvement of the setting. This also needs joint effort of the community at large, the care givers, patients and health professionals with the leadership from the government.

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Appendices

Appendix 1: List of instruments for use in the study

SerialNumber	Title
1.	Semi-structured interviews
1.1.	Semi-structured Interview for admitted patients with SMI
1.2.	Semi-structured Interview for care givers of patients with SMI
1.3.	Semi-structured Interview for professional staffs providing care for patients admitted for SMI
2.	Focus Group Discussions
2.1.	FGD with care givers of persons with SMI
2.2.	FGD with professionals in ASMH caring for SMI patients
2.3.	FGD with professionals in general medical facilities caring for patients with SMI
2.4.	FGD with both professionals & caregivers
2.5.	Record Review Form
2.6.	Screening tool for physical/medical illnesses in persons with severe mental illnesses
3.	Record Review of all admitted patients with SMI

Appendix 2. Data Collection Instruments

Appendix 2.1: Topic Guide for semi-structured interviews (SSI)

Title: SSI: Interview for study: for patients with SMI admitted with physical illness

	Title: SSI : Interview for study “Barriers to physical health care in persons with severe mental illness: a facility-based mixed methods study in Ethiopia” for patients with SMI admitted with physical illness
	Consent form (for attachment)
	Identification of the patient
1	Name
2	Sex
3	Age
4	Facility
5	Medical record number
6	Ward
7	Bed number
8	Address & telephone number
	Background
1	When were you last admitted?
2	What were you admitted for?
3	Were you ever admitted before that? Elaborate?
4	What were the reasons for your admission to hospital?
	Psychiatric illness
5	Can you tell me what the psychiatric illness/s you are suffering from and how you came to know about it?
6	What were the different types of care you were receiving for the psychiatric illness/s you suffered during this time? (probes; grouping therapy, compliance, improvement)
7	What was the role expected and contribution of professionals you were receiving service for your psychiatric illness and how do you compare this to what they actually did?
	Physical illness
1	Was there a time in the last six months that you developed other physical illness together

	with this psychiatric illness/s that you are suffering from? I would be glad if you explain to me what happened and what it was in detail? (Probes: diagnosis category).
2	What were the different types of care you were receiving for the physical illness you were suffering from? (Probes: How was the diagnosis made, who complained what, or who noticed what? Whether no care was given or received and the category and specific nature of care)
3	How satisfied or unsatisfied were you about the care? (probes: type of therapy, specific treatments, referrals and its process)
4	What were the roles and contribution of your caregivers in relation to the physical illness you suffered?
5	(If no acceptance or satisfaction) What do you think was the reason behind your poor acceptance and lack of the satisfaction regarding the care you received (or not) for the physical illness you were suffering from?
6	In general what are your beliefs regarding the care provided for physical illness that you suffered together with psychiatric illness?
7	If you think that the care for physical illness available is unacceptable or unsatisfactory what do you think are reasons associated and behind these?
8	What solutions do you propose and what measures do you think should be taken?
9	Are there any additional comments or suggestions you have on the physical illnesses and care for your physical illness or for patients like you?
	Comparison of psychiatric and physical illnesses
	Tell me what differences you think exist between psychiatric and physical illnesses? Give me examples to explain your answer.

Appendix 2.2: Topic Guide for semi-structured interviews (SSI)

Title: SSI: Interview for study: for caregiver of SMI patient admitted with physical illness

	Consent form (for attachment)
	Identification
	Identification of the caregiver
1	Name
2	Sex
3	Age
4	Work
5	Address& telephone number
	Identification of the patient
1	Name
2	Sex
3	Age
4	Facility
5	Medical record number
6	Ward
7	Bed number
8	Address & telephone number
	Background
1	When was the patient you are providing care for last admitted?
2	What was he/she admitted for?
3	Was he/she ever admitted before that? Elaborate.
4	What were the reasons for admission to hospital?
	Psychiatric illness
5	Can you tell me what the psychiatric illness/s he/she is suffering from and how you came to know about it?
6	What were the different types of care you were receiving for the psychiatric illness/s

	you suffered during this time? (probes; grouping therapy, compliance, improvement)
	What was the role expected and contribution of professionals you were receiving service for your psychiatric illness and how do you compare this to what they actually did?
	Physical illness
1	Was there a time in the last six months that he/she developed other physical illness together with this psychiatric illness/s that he/she is suffering from? I would be glad if you explain to me what happened and what it was in detail? (Probes: diagnosis category).
2	What were the different types of care he/she were received for the physical illness he/she was suffering from? (Probes:How was the diagnosis made, who complained what, or who noticed what? Whether no care was given or received and the category and specific nature of care)
3	How satisfied or unsatisfied were you about the care? (Probes: type of therapy, specific treatments, referrals and its process)
4	Explain to me in detail how satisfied or unsatisfied you were with the care for the physical illness he/she was provided with (Probes: for each illness linking diagnosis with specific care provided or not, type of therapy, specific treatments, referrals and its process)
5	If not satisfied: What do you think was the reason behind the patient's or your lack of the satisfaction regarding the care he/she received (or not) for the physical illness he/she was suffering from? (Probe independently for the response regarding patient and caregiver and linking each illness with related care provided).
6	What were the roles and contributions of different professionals in relation to the care for physical illness of the person you were providing care for? (probe: linking specifics)
7	In general what are your beliefs regarding the care provided for physical illness that the person you were providing care for was receiving?
8	If you think that the care for physical illness available is unacceptable or unsatisfactory what solutions do you propose and what measures do you think should be taken?
9	Are there any additional comments or suggestions you have on the physical illnesses and care for physical illness for patient for whom you and other similar patients?
	Comparison of psychiatric and physical illnesses
	Tell me what differences you think exist between psychiatric and physical illnesses? Give me examples to explain your answer.

4	What is the difference between psychiatric and physical illness?
5	What are the major psychiatric diagnoses that show physical co-morbidity?
6	What are the reasons for this co-morbidity?
7	What processes do you follow when you admit a patient with SMI? Do you include a physical examination and laboratory tests?
8	Is there a delay in identification of a physical illness in patients with SMI? If yes, on average how long does it take for patients with SMI to get proper diagnosis & treatment for the physical illness?
9	What do you think are the reasons for the delay in detection & treatment for the physical co-morbidities?
10	Is it possible to overcome the problem? (Probe: Consider the different factors that individually or as a group contribute to the delay in diagnosis & treatment of physical illness in patients with SMI, like patient/illness, professional-related, treatment & service-related factors).

Appendix 2.3: Topic Guide for focus group discussions (FGD) (both professionals)

1.	Facilitator	
2.	Note taker	
3	Participants	
3.1	Sex: number of men and women	
3.2	Age range	
3.3	Position range	
3.4	Qualification/profession range	
4.	Venue	
5.	Estimated time	
6.	Started at	
7.	End at	
1.	General issues	
1.1	What do we know about the difference between a psychiatric illness and physical illness?	
1.2	What happens when a patient with SMI is referred for physical or medical care?	
1.3	Given physical illness is a medical co-morbidity super imposed or occurring together with psychiatric illness (severe mental illness), how do we rate the status of the care for physical illness we come across (=30 min)	
1.4	What are the barriers in the delivery of care for physical illnesses that occur in patients with psychiatric illnesses (SMI) (=30 min)	
2.	Specific & Key issues	
2.1	What are the major solutions that we think could overcome these barriers to care for physical illness in patients with psychiatric illness (=30 min)	

Appendix 2.4: Record Review Form

Screening and Comparison

Case team _____ ward _____

Medical record number (MRN) _____

Date of completion _____

Ser.No	Characteristics	Variables	Value	Value code
1	Age (years)	[] [] years		AGE
2	Sex	Male Female	1 2	SEX
3	Marital status	Married Never married Divorced Windowed Co-habituating	1 2 3 4 5	MARITALST
4	Education level attained	No education Primary Secondary post-secondary	1 2 3 4	EDULEVEL
5	Residence	Rural Urban	1 2	RESIDENCE
6	Employment	Employed Unemployed Other	1 2 3	EMPLOYE
7	Religion	Orthodox Christian Protestant Christian Catholic Christian Muslim Other	1 2 3 4 5	RELIGION
8	Ethnicity	Amhara Oromo Tigray Other	1 2 3 4	ETHINICIY
9	Region	Addis Ababa Oromia Amhara Southern Nation(SNNPS) Other	1 2 3 4 5	REGION
10	Distance from Addis Ababa	[] [] [] in kilometers		DISTANCE
11.1	The means of income for your family	Farming Trading Government employee	1 2 3	INCOMEANS

		Other, Specify	4	
11.2	Number of adults earning an income in household	[] []		ADULTHH
11.3	Is there enough money each month	Yes No	1 2	ENOUMONEY
11.4	Relative family support	Support Available whenever it is needed Available much of the time but not always Support available only sometimes Support not available except very occasionally	1 2 3 4	RELATIVFM
12	Clinical information Diagnosis	_____		DIAGNOSI
13	Duration of illness	[] [] months		DURILLNES
14	Duration of treatment	[] [] months		DURTREAT
15	Duration of admission to hospital	[] [] months		DURADMIS
16	Depot antipsychotic medication	Yes No	1 2	ANTIPSY
16.1	If yes to 16, duration:	[] [] months		IFYESDURA
17.1	Family history of Chronic medical illness	Yes No Don't know/can't remember	1 2 3	CHRONMEDL
17.2	Family history of mental illness	Yes No Don't know/can't remember	1 2 3	MENTAILL
17.3	Family history of alcohol use	Yes No Don't know/can't remember	1 2 3	ALCOHUSE
18	Personal history of any current medical illness	Yes No Don't know/can't remember	1 2 3	CURRENTMED
19.1	History of documented alcohol use	Yes No Not recorded	1 2 3	DOCPROACO
19.2	History of documented khat use	Yes No Not recorded	1 2 3	DOPROKHA

19.3	History of documented tobacco use	Yes No Not recorded	1 2 3	TOBACOUS
19.4	Other documented problem substance use, specify	Yes No Not recorded Specify:	1 2 3	OTHDPRO
20	General appearance	Sick looking Healthy looking	1 2	GENERALAP
21	Vital signs	Blood pressure Pulse rate Temperature Respiratory rate	1 2 3 4	VITALSIGN
22.1	Body weight (kilogram)	[] [] []		BODYWEIG
22.2	Height (in meters)	[] [] []		HEIGHT
22.3	Body mass index (BMI)(kilogram/meters 2)	[] []		BMI
23	Current treatment for psychiatric condition	Antipsychotic medication Antidepressant medication Mood stabilizing medication More than one of the above Other _____	1 2 3 4 5	PSYCHICO
24.1	Investigations done Fasting blood glucose	Yes No	1 2	FASTING
24.1.2	If yes, specify any abnormality	_____		IFYES
24.2	Investigations done Liver function test	Yes No	1 2	LIVER
24.3	Investigations done Renal function test	Yes No	1 2	RENAL
24.4	Investigations done urinalysis	Yes No	1 2	URINAL
24.5	Investigations done Any other, specify	Yes No	1 2	ANYOTHER
25	Screen positive for co-morbidity any recorded	Yes No	1 2	RECORD
25.1	If yes ,specify	_____		IFYESPECI

25.2	Details on illness	Acute (<6months since onset) Chronic (>6 months since onset of illness)	1 2	DETAILNES
25.3	Type of illness	Infection Hypertension Diabetes mellitus Cancer Other ,specify	1 2 3 4 5	TYPEILLNS
25.4	Detail on treatment	Started for the physical illness pending laboratory result Not started because laboratory results are not ready Not started because diagnosis is not settled Not started because it is a medical emergency requiring Other, specify_____	1 2 3 4 5	DETAILTRE
25.5	Impact of treatment on psychiatric illness	Improved Worsened Remained the same	1 2 3	PSYCHIATR
25.6	Impact of treatment on physical illness	Improved Worsened Remained the same	1 2 3	PHYSICAL
25.7	The co-morbid physical illness determined by medical doctor	Excellent Very good Good Poor	1 2 3 4	MEDDOCPR
25.8	Co-morbid physical illness diagnosis	_____		Co-diagnos
25.9	Co-morbid physical illness duration	[] [] months		Co-durati
25.10	Co-morbid physical illness detected	Yes No	1 2	Co-detect
25.11	Co-morbid physical illness duration before starting treatment	[] [] [] in weeks		Co-beftrat
25.12	Co-morbid physical illness seriousness, if left untreated	Very serious Not serious Other, specify	1 2 3	Co-serious
25.13	Co-morbid physical illness pain	Very severe Severe Moderate Mild	1 2 3 4	Co-pain

		None	5	
25.14	Co-morbid physical illness Impairment	Yes, all the time Yes ,some of the time No	1 2 3	Co-impair
25.15	Co-morbid physical illness treatment received for physical co-morbidity	Yes No	1 2	Co-receive
25.16	Co-morbid physical illness describe the treatment	_____		Co-describ

Appendix 2.5: Screening tool for physical/medical illnesses in persons with severe mental illnesses

Demographic characteristics: Age [] [] years

Sex: Male [] Female []

Marital status: Married [] Never married [] Divorced []

Widowed [] Co-habiting []

Education level: No formal education [] Primary [] Secondary []

Post-secondary []

Employment: Employed [] Unemployed [] Other []

Residence: Rural [] Urban []

Symptoms inquiry (past 1 week)

Symptoms	Present/absent (√)		Remark
Fever	Yes []	No []	
Cough	Yes []	No []	
Diarrhea	Yes []	No []	
Vomiting	Yes []	No []	
Abdominal Discomfort	Yes []	No []	
Feelings of Dizziness	Yes []	No []	
Headache	Yes []	No []	
Blurring of Vision	Yes []	No []	
Fatigue	Yes []	No []	
Wound on The Skin/Itching or Burning Pain on the Skin	Yes []	No []	
Myalgia/Arthralgia	Yes []	No []	
Urinary Complaint (Urinary Frequency/Urgency/Burning Sensation on Urination)	Yes []	No []	
Abnormal Discharge from Genitalia	Yes []	No []	
Decreased Libido	Yes []	No []	

Increased Libido	Yes []	No []	
Constipation	Yes []	No []	
Tooth Ache	Yes []	No []	

Physical examination

1. General appearance: healthy looking [] sick looking []
2. Vital signs: blood pressure [] [] mmHg
 - pulse rate: [] [] /minute
 - respiratory rate: [] [] /minute
 - temperature: [] [] °C
 - weight: [] [] kilogram
 - height: [] [] meters
 - body mass index: [] [] kilogram/meter²
3. Head, eye, ear, nose and throat
4. Lymphoglandular system
5. Respiratory system
6. Cardiovascular system
7. Gastrointestinal system
8. Genitourinary system
9. Musculoskeletal system
10. Integumentary system
11. Central nervous system

Diagnosis:

Treatment plan:

Appendix 3: Informed consent forms (English versions)

A.1. INFORMATION SHEET FOR PATIENTS WITH SEVERE MENTAL ILLNESS IN THE STUDY

FULL TITLE OF THE STUDY: BARRIERS TO PHYSICAL HEALTH CARE IN PERSONS WITH SEVERE MENTAL ILLNESS: A FACILITY- BASED MIXED METHOD STUDY IN ETHIOPIA.

You are invited to participate in this research to tell your experiences about access to physical health care when you have co-occurring mental and physical illnesses. You are free to accept or to refuse taking part in this study. Before making a decision, please listen to or read this information sheet, which tells you about the study. If you decide to take part in this research, you must sign this form to show that you want to take part.

WHY AM I DOING THIS STUDY?

I am doing this study to understand the experiences of people with severe mental illness who additionally have developed co-morbid physical health problems after admission, in accessing health care when referred to General Hospitals.

I will do the study at Amanual Specialized Mental Hospital and General Hospitals where referrals are made for the treatment of medical condition in Addis Ababa, Ethiopia. The results of this study may help health service providers, managers and policy makers understand how to improve health care services for persons with co-occurring mental and medical illnesses. The benefit to you is that you will have the opportunity to express your thoughts and feelings thoroughly.

I am doing this study because we, who are working in this hospital, are encountering problems regarding the physical health of our patients while referring them to General Medical Hospitals. It is my hope that your participation in the study would give us important information that will change this problem. If you agree to take part, we will do an interview with you and your family members, and possibly ask you or your family members to join in a group discussion. I will also ask your permission to do an audio recording alongside the interview process, so that the important information you give me will not be forgotten when I process and analyse the data. I will also review your clinical record and kindly ask you to express your willingness, so that I will get access to these.

WHAT I WOULD LIKE YOU TO DO IF YOU ARE TAKING PART IN THE STUDY

I would like you and your care giver to tell me about your thoughts and experiences regarding the access to health care for the medical or physical illness you have in addition to the mental illness.

WHAT ARE THE RISKS OF PARTICIPATING IN THE STUDY?

There is minimal risk associated with your participation in the study. During the interviews you may become tired. You can express any concerns you may have, or refuse to reply to questions you don't want to answer. You do not need to give any information that you do not wish to discuss. You can stop the interview at any time.

WHAT TREATMENTS OR PROCEDURES ARE AVAILABLE FOR MY CONDITION?

Whether you take part or not will not affect the treatment you receive for your mental or physical illness.

WHAT SHOULD I DO IF I WANT TO STOP TAKING PART IN THE STUDY?

Taking part in this research study is up to you. You can decide not to take part. If you decide to take part now, you can change your mind and drop out later. Your decision won't change the medical care you get within the hospital now or in the future. If you take part in this research study, and want to drop out, you should tell me.

HOW WILL MY INFORMATION BE PROTECTED?

I will use a code number, not your name for all information I collect from your medical records. You will be interviewed in Amharic in a private room. The information about your name will only be accessible to the main investigator who may need to know who you are if there is a need to deal with any problem. The consent form and information you give me will be kept in a secure place and strict confidentiality will be maintained. In any publication, no personal information will be used. Your information will be combined with the information from other participants.

If later you change your mind and don't want to be interviewed or get your records reviewed, contact the investigator.

If you have questions or concerns about your right as a research participant, your concern about the research, and complaint about the research, please call and speak to the researcher Dr. Desalegn Bekele; he can be reached at +251 911 413230 or email: desalegnbekele8@gmail.com. If you have concerns about the ethical conduct of the study or any complaints, please contact:

1. the ethics committee of the Department of Psychiatry, School of Medicine, College of Health Sciences, Addis Ababa University (tel. +251 118962052), OR
2. the UCT Human Ethics Committee:

Faculty of Health Sciences, Human Research Ethics Committee

C/o Mrs Lamees Emjedi

University of Cape Town

E 52, Room 24, Old Main Building,

Groote Schuur Hospital, Observatory

South Africa

Telephone: 00 27 21 406 6338; Fax: 00 27 21 406 6411

Email: lamees.emjedi@uct.ac.za

A.2. CONSENT FORM FOR PEOPLE WITH SMI

FULL TITLE OF THE STUDY: BARRIERS TO PHYSICAL HEALTH CARE IN PERSONS WITH SEVERE MENTAL ILLNESS: A FACILITY- BASED MIXED METHOD STUDY IN ETHIOPIA.

Statement of researcher or person obtaining consent

I have explained the research to the study participant. I have also answered all questions about this research study to the best of my ability.

Name of researcher or

Date

person obtaining consent Signature

Statement of Person Giving Informed Consent and Authorization

I have read the participants information sheet or had it read for me. The purpose of the study has been explained to me, including what will be done and risks and possible benefits. I had the opportunity to ask questions and all my questions have been answered.

I give my consent to take part in this research study and agree to allow

- a) My medical records to be reviewed and the information used and shared as described above.
- b) Myself to be interviewed
- c) My care givers or family to be interviewed.
- d) For the interview to be audio-recorded for transcription and analysis.

Name of participant

Signature (Thumb print)

Date

B.1. INFORMATION SHEET AND CONSENT FORM FOR CARE GIVERS OF PATIENTS WITH SEVERE MENTAL ILLNESS IN THE STUDY

FULL TITLE OF THE STUDY: BARRIERS TO PHYSICAL HEALTH CARE IN PERSONS WITH SEVERE MENTAL ILLNESS: A FACILITY- BASED MIXED METHOD STUDY IN ETHIOPIA

You are invited to participate in this research to tell your experiences about access to physical health care when your relative on treatment for severe mental illness is referred to General Hospital for treatment of co-occurring physical illness. You are free to accept or to refuse taking part in this study. Before making a decision, please listen to or read this information sheet, which tells you about the study. If you decide to take part in this research, you must sign this form to show that you want to take part.

WHY AM I DOING THIS STUDY?

I am doing this study to understand the experiences of people with severe mental illness who additionally have developed physical health problems after admission, in accessing physical health care when referred to general hospitals.

I will do the study at Amanual Specialized MentalHospital and General Hospitals where referrals are made for the treatment of medical condition in Addis Ababa, Ethiopia. The results of this study may help health service providers, managers and policy makers understand how to improve health care services for persons with co-occurring mental and medical illnesses. The benefit to you is that you will have the opportunity to express your thoughts and feelings you experienced when you took your sick relative to a medical hospital. We are doing this study because we, who are working in this hospital, are encountering problems regarding physical health of our patients while referring them to general medical hospitals. It is my hope that your participation in the study would give us information that will change this problem. If you agree to take part, I will do an interview with you as a family member related to _____ and possibly ask you to join in a group discussion. I will also ask your permission to do an audio recording of the interview, so that the important information you give me will not be forgotten when I process and analyze the data. I will also review _____ clinical record if he/she gives me permission.

WHAT I WOULD LIKE YOU TO DO IF YOU ARE TAKING PART IN THE STUDY

I would like you to tell me about your thoughts and experiences regarding the access to physical health care of your physically ill family member when he/she was referred to general hospital.

WHAT ARE THE RISKS OF PARTICIPATING IN THE STUDY?

There is minimal risk associated with your participation in the study. During the interviews you may become tired. You can express any concerns you may have, or refuse to reply to questions you don't want to answer. You do not need to give any information that you do not wish to discuss. You can stop the interview at any time.

WHAT TREATMENTS OR PROCEDURES ARE AVAILABLE FOR YOUR PHYSICALLY ILL RELATIVE?

Whether you take part or not will not affect the treatment of your sick relative with regards to his/her mental and physical illness.

WHAT SHOULD I DO IF I WANT TO STOP TAKING PART IN THE STUDY?

Taking part in this research study is up to you. You can decide not to take part. If you decide to take part now, you can change your mind and drop out later. Your decision won't change the medical care your sick relative gets within the hospital now or in the future. If you take part in this research study, and want to drop out, you should tell me.

HOW WILL MY INFORMATION BE PROTECTED?

I will use a code number, not your name for all information. You will be interviewed in Amharic in a private room. The information about your name will only be accessible to the main investigator who may need to know who you are if there is a need to deal with any problem. The consent form and information you give me will be kept in a secure place and strict confidentiality will be maintained. In any publication, no personal information will be used. Your information will be combined with the information from other participants.

If you have questions or concerns about your right as a research participant, your concern about the research, and complaint about the research, please call and speak to the researcher Dr. Desalegn Bekele; he can be reached at +251 911 413230 or email: desalegnbekele8@gmail.com. If you have concerns about the ethical conduct of the study or any complaints, please contact:

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2. the UCT Human Ethics Committee:

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South Africa

Telephone: **00 27 21 406 6338**

Fax: 00 27 21 406 6411

Email: lamees.emjedi@uct.ac.za

B.2. CONSENT FORM FOR CAREGIVERS OF PEOPLE WITH SMI INCLUDED IN THE STUDY

FULL TITLE OF THE STUDY: BARRIERS TO PHYSICAL HEALTH CARE IN PERSONS WITH SEVERE MENTAL ILLNESS: A FACILITY- BASED MIXED METHOD STUDY IN ETHIOPIA

Statement of researcher or person obtaining consent

I have explained the research to the study participant. I have also answered all questions about this research study to the best of my ability.

Name of researcher or

Date

person obtaining consent Signature

Statement of Person Giving Informed Consent and Authorization

I have read the participants information sheet or had it read for me. The purpose of the study has been explained to me, including what will be done and risks and possible benefits. I had the opportunity to ask questions and all my questions have been answered.

I give my consent to take part in this research study and agree to allow my sick relative's health information to be used and shared as described above.

Name of participants

Signature(Thumb print)*

Date

C.1. INFORMATION SHEET AND CONSENT FORM FOR MEDICAL PROFESSIONALS WORKING AT GENERAL HOSPITALS

FULL TITLE OF THE STUDY: BARRIERS TO PHYSICAL HEALTH CARE IN PERSONS WITH SEVERE MENTAL ILLNESS: A FACILITY- BASED MIXED METHOD STUDY IN ETHIOPIA

You are invited to participate in this research to tell your experiences about receiving a patient with severe mental illness for treatment of co-occurring severe physical illness from Amanuel Specialized Mental Hospital. You are free to accept or to refuse taking part in this study. Before making a decision, please listen to or read this information sheet, which tells you about the study. If you decide to take part in this research, you must sign this form to show that you want to take part.

WHY AM I DOING THIS STUDY?

I am doing this study to understand the experiences of medical professionals who receive patients referred from Amanuel Specialized Mental Hospital who develop co-morbid physical illnesses.

I will do the study at general medical hospital settings in Addis Ababa, Ethiopia. The results of this study may help health service providers, managers and policy makers understand how to improve health care services for persons with co-occurring mental and medical illnesses. The benefit to you is that you will have the opportunity to express your thoughts and feelings about the difficulties you encounter in handling such patients, so that the services given to them would get further attention and improvement.

I am doing this study because we, who are working in this hospital, are encountering problems regarding physical health care of our patients when referring them to General Medical Hospitals and the reasons for this are not clear to us. It is my hope that your participation in the study would give us very important information to help rectify the problem. If you agree to take part, I will do an interview with you and possibly ask you to join in a group discussion. I will also ask your permission to do an audio recording of the interview, so that the information you give me will not be forgotten when I process and analyse the data.

WHAT I WOULD LIKE YOU TO DO IF YOU ARE TAKING PART IN THE STUDY

I would like you to tell me about your thoughts, feelings and experiences regarding the difficulties you encountered while dealing with the medical care of persons with severe mental illness referred from Amanuel Specialized Mental Hospital.

WHAT ARE THE RISKS OF PARTICIPATING IN THE STUDY?

- 8 There is minimal risk associated with your participation in the study. During the interviews you may become tired. You can express any concerns you may have, or refuse to reply to questions you don't want to answer. You do not need to give any information that you do not wish to discuss. You can stop the interview at any time.

WHAT SHOULD I DO IF I WANT TO STOP TAKING PART IN THE STUDY?

Taking part in this research study is up to you. You can decide not to take part. If you decide to take part now, you can change your mind and drop out later. Your decision won't have any impact on your professional career. If you take part in this research study, and want to drop out, you should tell me.

HOW WILL MY INFORMATION BE PROTECTED?

I will use a code number, not your name for all information. You will be interviewed in a private room in either English or in Amharic, depending on your preference. The information about your name will only be accessible to the main investigator who may need to know who you are if there is a need to deal with any problem. The consent form and information you give me will be kept in a secure place and strict confidentiality will be maintained. In any publication, no personal information will be used. Your information will be combined with the information from other participants.

If you have questions or concerns about your right as a research participant, your concern about the research, and complaint about the research, please call and speak to the researcher Dr. Desalegn Bekele; he can be reached at +251 911 413230 or email: desalegnbekele8@gmail.com. If you have concerns about the ethical conduct of the study or any complaints, please contact:

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C.2. CONSENT FORM FOR MEDICAL PROFESSIONALS

FULL TITLE OF THE STUDY: BARRIERS TO PHYSICAL HEALTH CARE IN PERSONS WITH SEVERE MENTAL ILLNESS: A FACILITY- BASED MIXED METHOD STUDY IN ETHIOPIA

Statement of researcher or person obtaining consent

I have explained the research to the study participant. I have also answered all questions about this research study to the best of my ability.

Name of researcher or

Date

person obtaining consent Signature

Statement of Person Giving Informed Consent and Authorization

I have read the participants information sheet. The purpose of the study has been explained to me, including what will be done and risks and possible benefits. I had the opportunity to ask questions and all my questions have been answered.

I give my consent to take part in this research study and agree to give the required information to be used and shared as described above.

Name of participants

Signature

Date

Appendix 4: Dissemination plans

The study findings will be disseminated to the public, research scientists as well as health authorities through the following means:

Incorporation in appropriate management instruments of the hospital and other materials for reference and is also expected to be used as a management tool by the hospital administration.

Further to these, the results would also be used as a message for dissemination for health education and mobilization of stakeholders towards an effective and efficient intervention to alleviate the problems of physical care in the hospital and other structures in the health system. The findings of the study can be disseminated and utilised in different ways: publication in peer-reviewed scientific journals, presenting the findings at national and international conferences, seminars and lectures. It can be of importance to develop evidence-based mental and physical health services as part of holistic care for persons with co-morbid mental and physical health.

Appendix 5: Logistics

Table 4. Roles of investigator, study assistants, supervisors and statistician

Duties	Responsible Personnel
<ul style="list-style-type: none"> ➤ Assist in data collection (structured and semi-structured interviews, focus group discussions, socio-demographic questionnaires, structured clinical record reviews) 	Study assistant - recruited
<ul style="list-style-type: none"> ➤ Development of the research protocol ➤ Assist in data collection ➤ Data entry ➤ Data analysis ➤ Writing thesis and research papers 	Desalegn Bekele - research student
<ul style="list-style-type: none"> ➤ Overall supervision of the research processes excluding data collection 	UCT supervisory team; Dr. Marguerite Schneider BSc, PhD (Supervisor)
<ul style="list-style-type: none"> ➤ Supervision of the research student during data collection and analysis 	Dr. Abebaw Fekadu MD, PhD – Ethiopian Co-supervisor
<ul style="list-style-type: none"> ➤ Assist in data analysis 	Study statistician

Appendix 6: Study Participant's Information (Semi-structured interviews)

No	Code	Age	Educational level	Address (Kebele)	Occupation	Date of the interview	Duration in treatment	Duration of the interview (minute: second)	Remark
1	SSI 001 Patient	45	12 th complete	Homeless	-----	Thursday August 28 2014		32:17	Care giver was not available
2	SSI 002 Care giver	35	12 th complete	Woliso Town	Business man	Thursday August 28 2014	One month	19:38	The patient couldn't talk
3	SSI 003 Care giver	42	4 th Grade		Farmer	Saturday August 28 2014	Two weeks	49:09	The patient was in ICU
		38	Veterinary Dr		Veterinary Dr				
4	SSI 004 Care giver	35	12 th complete	Addis Ketema	Business woman	September 6, 2014	1 week	30:17	The patient was in Holy water treatment
5	SSI 005 Care giver	21	College student	Holeta town	Student	Saturday, September 6, 2014	5 years	20:33	
6	SSI 005 Patient	38	12 th Grade complete	Holeta town	-----	Saturday September 6, 2014	5 years	24:34	
7	SSI 006 Care giver	45	Read and Write	Ginchi Town	Farmer	Saturday September 20, 2014	4 years	23:31	
8	SSI 006 Patient	32	Diploma in Accounting	Ginchi Town	Civil Servant	Saturday September 20, 2014	4 years	33:37	101
9	SSI 007 Care	20	High school student	Addis Ababa Kolfe	Student	Wednesday, October 8, 2014	10 years	27:36	

	giver			Keranyo					
10	SSI 007 Patient	42	8 th Grade	Addis Ababa Kolfe Keranyo	-----	Wednesday, October 8, 2014	10 years	17:58	

Focus Group Discussion 1: Health professionals in a Psychiatric setting (Fgd 1)

No	Group one focus group discussion (fgd 1)	Health setting	Qualification	Number of years working Age		Position	Remark
				Medical	Psychiatric		
P1		ASMH	Degree in Psychiatric Nursing	-----	10 years	Psychiatric Nurse	
P2		ASMH	Degree in Medicine plus Specialty certificate in Psychiatry	4 years	24 years	Consultant Psychiatrist	
P3		ASMH	Degree in Public Health	1 year	6 years	Health Officer	
P4		ASMH	Degree in Medicine	2 years	----	General Practitioner	
P5		ASMH	Degree in Public Health	15 years	7 years	Health Officer	

Focus Group Discussion 2: Health professionals in a Psychiatric setting (Fgd 2)

No	Group one focus group discussion (fgd 2)	Health setting	Qualification	Number of years working Age		Position	Remark
				Medical	Psychiatric		
P1		ASMH	Diploma in Clinical Nursing	1 year	2 years	Clinical Nurse	
P2		ASMH	Diploma in Clinical Nursing	5 years	2 years	Clinical Nurse	
P3		ASMH	Bsc in Psychiatric Nursing	5 years	6 years	Psychiatric Nurse	
P4		ASMH	Diploma in Clinical Nursing	1 year and 8 months		Clinical Nurse	
P5		ASMH	Intern	6 months		Intern	

Focus Group Discussion 3: Health professionals at the medical setting (Code Fgd 3)

No	Group two focus group discussion three (fgd)	Health setting	Qualification	Number of years working		Position	Remark
				Age			
				Medical	Psychiatric		
P1		Black Lion Hospital (BLH)	Degree in Medicine, Resident in Internal Medicine	8 years	-----	Medical Resident	
P2		Black Lion Hospital (BLH)	Degree in Medicine	1 year	-----	Intern	
P3		Black Lion Hospital (BLH)	Degree in Clinical Nursing	3 years	-----	Clinical Nurse	
P4		Black Lion Hospital (BLH)	Degree in Medicine, Resident in Internal Medicine	4 years	-----	Medical Resident	
P5		Black Lion Hospital (BLH)	Degree in Medicine	1 year	-----	Intern	
P6		Black Lion Hospital (BLH)	Degree in Clinical Nursing	2 years	-----	Clinical Nurse	
P7		Black Lion Hospital (BLH)	Degree in Medicine	1 year	-----	Intern	
P8		Black Lion Hospital (BLH)	Degree in Medicine	1 year	-----	Intern	

Appendix 7: ASMH Ethics Approval

Minutes of the Ethical Review Committee

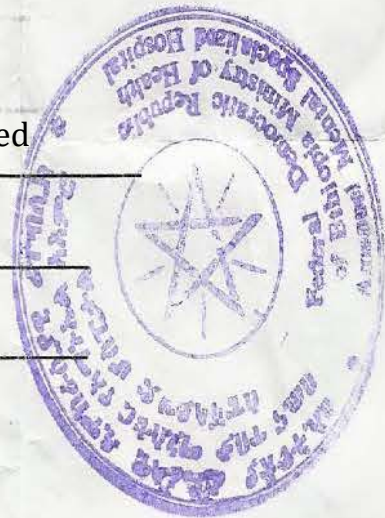
Date: June 24, 2014

Time: 9:00 Am

Members Present

- | | | |
|---------------------|-------------|-------------------|
| 1. Dr. Lulu Bekanna | Chairperson | Signature removed |
| 2. Dr. Dereje Asefa | Member | Signature removed |
| 3. Zegeye Yohannis | Member | Signature removed |

Post Graduate Program Coordinator



Agenda:

Evaluation and deciding whether the project proposal "**Barriers to physical health care in persons with severe mental illness: A facility based mixed methods study in Ethiopia**".

Presented by: **Dr Desalegn Bekele**

After deliberations, the Ethical Review Committee accepted the proposal to be ethical sound, and could be undertaken in the hospital.

Appendix 8: UCT Ethics Approval



UNIVERSITY OF CAPE TOWN
Faculty of Health Sciences
Human Research Ethics Committee



Room E52-24 Old Main Building
Grooteschoor Hospital
Observatory 7925
Telephone [021] 406 6492 • Facsimile [021] 406 6411
Email: Sumayah.ariefdien@uct.ac.za
Website: www.health.uct.ac.za/fhs/research/humanethics/forms

24 July 2014

HREC/REF: 365/2014

Dr M Schneider

Alan J Fleischer Centre for Public Mental Health
Room 30, RMH Building
46 Sawkins Road
Rondebosch

Dear Dr Schneider

Project Title: BARRIERS TO PHYSICAL HEALTH CARE FOR PERSONS WITH SEVERE MENTAL ILLNESS: A FACILITY-BASED MIXED METHODS STUDY IN ETHIOPIA (MPhil Candidate – Dr D Merga)

Thank you submitting your study to the Faculty of Health Human
Committee (HREC) for review.

It is a pleasure to inform you that the HREC has **formally approved** the above mentioned study.

Approval is granted for one year until the 30 July 2015.

Please submit a progress form, using the standardised Annual Report Form, if the study continues beyond the approval period. Please submit a Standard Closure form if the study is completed within the approval period.

We acknowledge that the following student:- Dr Desalegh Merga is also involved in this project.

Please note that the on-going ethical conduct of the study remains the responsibility of the principal investigator.

Please quote the HREC REF in all your correspondence.

Yours sincerely

Signature removed



**PROFESSOR M BLOCKMAN
CHAIRPERSON, HSF HUMAN ETHICS**

Federal Wide Assurance Number: FWA00001637.

Institutional Review Board (IRB) number: IRB00001938

Hrec/ref:365/2014

This serves to confirm that the University of Cape Town Research Ethics Committee complies to the Ethics Standards for Clinical Research with a new drug in patients, based on the Medical Research Council (MRC-SA), Food and Drug Administration (FDA-USA), International Convention on Harmonisation Good Clinical Practice (ICH GCP) and Declaration of Helsinki guidelines.

The Research Ethics Committee granting this approval is in compliance with the ICH Harmonised Tripartite Guidelines E6: Note for Guidance on Good Clinical Practice (CPMP/ICH/135/95) and FDA Code Federal Regulation Part 50, 56 and 312.