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**HIV testing rate and seroprevalence
among people attending a mental health clinic
in rural Malawi**

by

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DECLARATION

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Contents

ABBREVIATIONS	7
ACKNOWLEDGEMENTS	8
EXECUTIVE SUMMARY	9
Background.....	9
Methods.....	9
Results.....	9
Conclusions	10
1. INTRODUCTION AND BACKGROUND	11
1.1 Introduction.....	11
1.2 Background Thyolo District.....	12
1.2.1. Geography.....	12
1.2.2 Demography.....	12
1.2.3 Socio-economic background.....	13
1.2.4 Cultural context.....	14
1.2.5 HIV epidemic.....	15
1.3 Health services and resources in Malawi	15
1.3.1 Mental health resources and services	16
1.3.2. HIV/AIDS services.....	17
2 LITERATURE REVIEW	19
2.1 Search strategy.....	19
2.2 Mental disorders in Malawi	20
2.3 Mental health and HIV	20
2.3.1 HIV prevalence among people with mental illness	21
2.3.2 HIV, a risk factor for mental illness.....	22

2.3.3 The effect of co-morbidity of mental disorders and HIV-infection on treatment, disease progression and outcome	23
2.3.4. Sexual risk behaviour of HIV-infection in patients with severe mental illness.	25
2.3.5 Sexual risk behaviour associated with substance use.....	26
2.3.6 Injection drug use, HIV and mental disorders	27
2.3.7 HIV knowledge among people with mental illness and risk of HIV	27
2.4 HIV testing and counselling and mental illness.....	28
2.4.1 HIV testing and counselling.....	28
2.4.2 HIV testing and counselling among individuals with mental illness	29
2.5 Important gaps in knowledge.....	30
3 AIM AND OBJECTIVES	31
3.1 Aim	31
3.2 Objectives	31
4 INTRODUCTION TO THE STUDY SITE.....	32
4.1 Health services: Thyolo District	32
4.2 Mental health services: Thyolo District.....	33
5 METHODOLOGY	35
5.1 Study design.....	35
5.2 Study period.....	35
5.3 Sample size	35
5.4 Population and sampling procedure	35
5.5 Consent procedure	36
5.6 Data collection.....	36
5.7 Specimen collection and analysis	38
5.8 Data analysis	38
5.9 Language considerations	40
5.10 Ethical approval	40

6 RESULTS.....	41
6.1 Sample.....	41
6.2 Demographics.....	41
6.3 Health profile.....	45
6.3.1. Mental health profile.....	45
6.3.2. Health variables and risk behaviour.....	47
6.3.3 HIV service uptake and pre study prevalence.....	52
6.3.4. HIV prevalence.....	53
6.3.5. Association between HIV status and risk behaviour.....	57
6.4 Comparison with the general population in Thyolo District.....	59
7 DISCUSSION.....	62
8 STUDY LIMITATIONS.....	66
9 CONCLUSIONS.....	67
10 RECOMMENDATIONS FOR POLICY AND PRACTICE IN MALAWI.....	68
11 RESEARCH NEEDS.....	70
REFERENCES.....	71
APPENDICES.....	78
Appendix A. Map of Thyolo District.....	78
Appendix B. Letter of approval COMREC.....	79
Appendix C. Patient record.....	80
Appendix D. Consent forms in English and Chichewa.....	87
Appendix E. Information sheet English and Chichewa.....	89

ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
ARV	Antiretroviral
ART	Antiretroviral Treatment
CHAM	Christian Health Association of Malawi
DHMT	District Health Management Team
DHO	District Health Office
DHS	Demographic and Health Survey
HAART	Highly Active Antiretroviral Therapy
HIV	Human Immunodeficiency Virus
HTC	HIV Testing and Counselling
LMIC	Low- and Middle-Income Countries
MoH	Ministry of Health
MSF	Médecines sans Frontières
NGO	Non-Governmental Organization
OPD	Out-patient Department
SMI	Severe Mental Illness
TC	Testing and Counselling
TDH	Thyolo District Hospital
WHO	World Health Organization

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EXECUTIVE SUMMARY

Background

Around the globe, 450 million people are suffering from mental illness. Three quarters of the burden of mental illness occurs in low- and middle-income countries. However, resources for care of mentally ill patients are low, and have been further compromised by the HIV-epidemic in many countries including Malawi. Little is documented about the burden of mental illness or the association between mental health and HIV-infection in this country.

This study was undertaken to assess HIV-prevalence, uptake of HIV-care, general clinical characteristics and risk factors among a population visiting a mental health clinic in a rural Malawian district hospital.

Methods

Between August 2009 and August 2010, a descriptive cross-sectional study was undertaken among patients attending the outpatient mental health clinic in Thyolo District Hospital. Thyolo District is an area with around 600,000 inhabitants and an adult HIV prevalence of 21%. A random sampling technique was applied to reach the required sample size of 154. Patients with impaired mental judgment who were not accompanied by a capable guardian were excluded from participation. Patients who consented to participation were asked to respond to a questionnaire and were offered HIV testing and counseling if relevant.

Outcomes studied were demographic and mental health characteristics, HIV-status, uptake of HIV-care and risk behaviour. All relevant data were entered into a Microsoft Excel spreadsheet and analyzed using OpenEpi and EpiCalc 2000 software packages.

Results

One-hundred and seventy-four participants were included in the study: 93 men and 81 women with a median age of 30 years (range 18-85); 99 patients had epilepsy, 85 had a psychiatric disorder. Of all participants, 84% had received some schooling, 63% generated their income by themselves and 93.7% were assessed to have the capacity to provide consent to participate in the study.

Two-thirds of all participants had been tested for HIV in the past. Out of all participants, 162 were tested for HIV during the study. The post-study HIV-prevalence was 14.8% (compared to 9.8 % prior to enrollment). Of all HIV-positive patients one-third were not using co-trimoxazole prophylaxis and half had not had their ART eligibility assessed in the past.

Of participants, 61% were sexually active, almost 10% of whom with 2 or more different partners. Inconsistent condom use was high (86%) in sexually active participants, even when they had multiple sexual contacts or did not know the HIV-status of their partner(s). Alcohol and drug misuse were lower than in the general population.

Conclusions

HIV-prevalence among mental health patients attending the clinic was lower compared to the general population. The rate of HIV testing was rather high, but uptake of HIV prevention messages, care and support low. This illustrates that despite having a lower HIV-prevalence, HIV-positive mental health patients are a specifically vulnerable group.

University of Cape Town

1. INTRODUCTION AND BACKGROUND

This chapter starts with an introduction about mental health and the rationale of the study. Thereafter, some relevant background information about Thyolo District and available health services is given.

1.1 Introduction

The World Health Organization (WHO) has indicated that 14% of the global burden of disease is attributable to neuropsychiatric disorders (Prince et al. 2007). More than three quarters of this burden occurs in low- and middle-income countries (WHO 2011a). With a prevalence of 10% among the global adult population, about 450 million people are suffering from neuropsychiatric conditions (WHO 2011c). Many of these conditions are of a chronically disabling nature

Resources for mental health, including funding, policy documents, community structures, health staff and general health care infrastructure are often scarce, especially in low-income countries. Moreover, these resources are usually distributed inequitably. Therefore, although the rate of mental disorders is higher among the poor, access to mental health services is often difficult for those with the highest needs (Jacob et al. 2007). In low- and middle-income countries, 75% of people suffering from mental illness who are in need of medical care do not receive adequate treatment (WHO 2011a).

These limitations in access to mental health services have become more apparent in the context of the HIV pandemic. There is a strong linkage between mental health and HIV infection: people with HIV have a higher risk of mental illness and mental illness can be a risk factor for developing HIV infection (Prince et al. 2007). However, in sub-Saharan Africa, the overwhelming numbers of people suffering somatic complications from HIV have crowded out those suffering from other conditions, including psychiatric conditions. Programmes for the prevention and treatment of HIV infection have drawn heavily upon available financial and human resources. Given this context, it is unsurprising that the needs of people with mental illness, both those with and without co-morbid HIV-disease, are easily overlooked (Collins et al. 2009).

In Malawi, a country with one of the highest HIV prevalence rates in the world, there is a lack of documentation about the prevalence of HIV-related and non-HIV related mental

illness. However, extrapolating data from other countries, those suffering from mental illness are likely to represent a substantial part of the Malawian population. These people are vulnerable and may need specific health care and support. In order to allocate resources for the provision of this care and support, there is a dire need to collect and evaluate health information about people suffering from mental illness. Mapping out both patient and health service characteristics is an essential starting point for planning an effective structure for mental health services.

1.2 Background Thyolo District

1.2.1. Geography

Malawi is a small landlocked country in Southern Africa with a population of approximately 15 million. Life expectancy is 53 years (WHO 2011c). Thyolo District is one of the 28 districts in Malawi and is a rural area situated in the south of the country (Annex A). Thyolo lies within the Shire Highlands and covers an area of 1715 square kilometres. It has a tropical savannah climate and has three annual seasons, namely the hot and dry season, the hot and wet season and the cool and dry season. About one third of the district is covered by tea estates, the remaining land is used for subsistence farming. Protected water sources are limited and almost half of the population uses water from rivers and streams. The district is administratively divided into seven Traditional Authorities and has 456 villages (Thyolo Health Management Information System 2010; Van den Akker & Lommerse 2010).

The district's administrative headquarters and the district hospital are located in Thyolo Town. This town lies along the only major highway crossing the district. This highway runs from Blantyre, the second largest city in Malawi, 47 kilometres north, to the border with Mozambique, about 50 kilometres east (Thyolo Health Management Information System 2010; Van den Akker & Lommerse 2010) (appendix A).

1.2.2 Demography

The district population was estimated at 617,000 in 2010, of whom around 100,000 were children under the age of five years and 140,000 women of childbearing age. The Thyolo population is predominantly young, with close to half of its people under 15 years of age (National Statistical Office 2008). The district is densely populated with approximately

360 persons per square kilometre, a rapid increase from 251 in 1987 (National Statistical Office 2008;Thyolo Health Management Information System 2010).

Predominant tribes in Thyolo are Lomwe, Mang'anja and Yao. Christianity and Islam are the two major religions, besides traditional beliefs. The main language spoken is Chichewa. Other languages spoken in the district include Lomwe and Yao. English, the second official national language after Chichewa, is spoken by a minority of higher educated people (Thyolo Health Management Information System 2010;Van den Akker & Lommerse 2010).

1.2.3 Socio-economic background

Malawi is among the poorest countries in the world, ranking 160 out of 182 countries in the 2007 UNDP Human Development Index (UNDP 2011a). It has a predominantly agricultural economy. In Thyolo District, most people live from subsistence farming, run a family business or work on tea estates. Very few people are active on professional, technical or managerial levels (3.7% of men and 1.7% of women) (National Statistical Office 2005). Formal employment levels are much higher among women (70%) compared to men (51%) but the income of a household often depends on the labour force of its female members that do most of the subsistence farming (National Statistical Office 2005;Van den Akker & Lommerse 2010). The vast majority of the population earns less than two US dollars per day (UNDP 2011b).

Illiteracy in Thyolo is high, especially among women: 28% of women had no schooling at all and an additional 32% did not complete the first half of primary school. Child labour is not uncommon and despite government actions to curtail exploitative child labour 32% of children aged 5 to 14 years are engaged in some type of work (National Statistical Office 2005). The quality of education for children that do have access to schooling is questionable, as class rooms are full and teachers are few (National Statistical Office 2005;Van den Akker & Lommerse 2010). The number of orphans is high, partly as a result of HIV-related mortality and many children are heading households (National Statistical Office 2005;Thyolo Health Management Information System 2010;Van den Akker & Lommerse 2010).

People in rural areas usually live in self-made sand huts, without running water and electricity. Most people share their households with second- and third-degree relatives,

with an average of 4.4 people per household. Maize is the main ingredient for every meal, mostly prepared into stiff maize porridge (National Statistical Office 2005).

1.2.4 Cultural context

Cultural ideas and beliefs about divinity, medicine, witchcraft, disease and the influence of ancestral spirits are widely shared and common throughout Malawi (Steinfeld 2009, p. 43).

Like in any other culture, cultural norms are an integral part of social life in Malawi. A wide variety of normative rules of social conduct predefine what people should and should not do. These rules are conveyed during initiation rituals or from parents onto their children. Violation is seen as an offence and may lead to punishment by spirits or other entities, or is thought to make someone vulnerable to the effects of witchcraft. Such rules create a form of social protection and, in addition, provide an explanation for the cause of illness. Mental disorder is often thought to be attributable to some form of social misconduct (Steinfeld 2009, p. 43).

These causative factors of illness predefine the social attitude and acceptance of the affected person and their family within the community. The occurrence of stigmatization and social exclusion of people with a mental disorder in Malawi and their relatives has been well-documented (Steinfeld 2009, p. 5).

These cultural norms have an impact on care-seeking behaviour and expectations about treatment outcome (Steinfeld 2009, p. 249). Traditional healers are often the first and sometimes the only service providers consulted for a broad range of health problems.

The use of alcohol and tobacco among adults in Malawi is common, particularly among men (Ministry of Health & WHO 2010). The use of other drugs, including *chamba* (cannabis) is prohibited. Chamba may be used for pleasure, relaxation, medicinal purposes, and to enhance physical strength or sexual potency (Wilkinson M 1991, p. 91). Although it is thought to be commonly used, exact numbers are not known. Other types of drugs do not seem to play any role of importance in Thyolo or elsewhere in rural Malawi.

1.2.5 HIV epidemic

HIV/AIDS evolved into a major public health problem in Malawi in the 1980s and 1990s. With an estimated 12 percent HIV prevalence of the population age 15-49 in 2004, Malawi had one of the highest prevalence rates in the world. The main mode of transmission of HIV is through heterosexual contact, followed by mother-to-child-transmission (25%). The government of Malawi monitors HIV-prevalence by performing antenatal clinic sentinel surveillance (National Statistical Office 2005).

The prevalence of HIV is highest in the Southern region. Thyolo District has one of the highest HIV-prevalence rates in the country, only topped by the urban Blantyre District. The most reliable estimation of the prevalence rate in Thyolo was 21% in 2004 (National Statistical Office 2005), at the time that ART started to become available in some clinics. Exact reasons for this exceptionally high prevalence are not known. Risk factors that are likely to have contributed are: the exceptional poverty, the high population density, the geographical closeness to urban Blantyre and the high numbers of seasonal workers employed on the tea estate (Van den Akker & Lommerse 2010).

In Thyolo District, ART became available in 2003. Since then, the Ministry of Health (MoH) together with Medecins Sans Frontieres (MSF) have scaled up access to ART, achieving district-wide coverage in 2007. Patients on ART may receive their drugs at hospital, health centre or community health post level and collect their drugs on a monthly or bimonthly basis (Bemelmans et al. 2010).

1.3 Health services and resources in Malawi

The Constitution of Malawi recognizes the duty of the state 'to provide adequate health care, commensurate to the health needs and based on international standards' (Government of Malawi 2011). Compared to other African nations, the Malawian government has in recent years invested a relatively high percentage of the national budget in health care services and has allocated 15.5% of the total government budget for the current financial year 2010/2011 (Nyasa Times 2011).

Health care services in Malawi are provided by the MoH, the Christian Health Association of Malawi (CHAM), nongovernmental organizations (NGOs) and private practitioners. The public services are organised into primary, secondary and tertiary levels.

The primary level consists of health centres, outreach clinics, health posts and rural hospitals. The health post is the smallest health unit in Malawi and is manned by 'health surveillance assistants' (HSAs), who undergo ten-week orientation training. Each health post serves a small number of villages. Health centres are staffed by nurses and medical assistants, a cadre of non-physician clinicians with two years of professional training.

The secondary level includes district hospitals that are present in most districts, where clinical care is delivered mainly by clinical officers, a second cadre of non-physician clinicians with four years of professional training, as well as medical assistants and nurses. Clinical officers are a major human resource within the health sector, and provide both medical and surgical care, including anaesthetic and obstetric care. There are four general tertiary referral hospitals in the country, localized in the larger cities.

All government health care services are provided free-of-charge. However, accessing health care is still costly for most people, due to the cost of alternative sources of care and transport, as well as the loss of income during health care attendance (Van den Akker & Lommerse 2010).

Malawi has been facing a crisis in human resources available within the health sector for many years. There is only one doctor per 50,000 population, and those few doctors available are often engaged in management tasks. Most of the clinical care is delivered by non-physician clinicians. The staffing levels of doctors and nurses are respectively 90% and 67% below WHO recommendations to have 20 doctors and 100 nurses per 100,000 population (Bemelmans et al. 2011).

1.3.1 Mental health resources and services

Zomba mental hospital, Malawi's only public tertiary psychiatric hospital was built in 1953, along with the arrival of drugs for mental disorders (Government of Malawi 1999). The Mental Treatment Act was enacted in 1959 and amended in 1968 (WHO 2005, p. 296). In 1999, the MoH formulated its first mental health policy and programme to decentralize and appropriately allocate services and resources (mental health atlas 2005). This policy is awaiting review. Since then, a certain level of decentralization of mental health services to district level took place. The national Mental Health programme is directed by the only Malawian psychiatrist present in the country.

Zomba Mental Hospital has 333 beds and admits approximately 1500 patients every year. St. John of God Mental Health Services is a CHAM mental health hospital, located in the Northern region that has 50 beds (Government of Malawi 1999). The central hospital in Lilongwe has a small psychiatric unit. Mental health services in the district fall under the District Health Office. District hospitals offer basic services for mental health patients. At district level, facilities do not have a psychiatric unit and patients are admitted into the general wards of hospital and health centres. The district hospitals are responsible to maintain static outpatient clinics as well as for outreach mental health services. Mental health services in Malawi serve patients with psychiatric illness, as well as those with epilepsy.

Training for health staff in mental health is available. All medical students, non-physician clinicians and nurses undergo basic theoretical and practical training in mental health during their professional training. Nurses and clinical officers may go for further training and specialise in mental health (Kauye & Mafuta 2007) A new post-graduate training for doctors to specialise in psychiatry was started at the end of 2010. HSAs, the primary-care level cadre of community health workers, do not receive any orientation in mental health during their training course. Most of them lack the skills to assess and manage patients with mental health disorders.

Even though mental health care services may have improved over the past year, partly as a result of decentralization, the systems in place function far from perfectly. There are no guidelines available at district level for the treatment of mental illness, there is no proper integration of primary health care and mental health care services, communication between central and district levels is limited and the chronic shortage of resources limits care to psychopharmacological treatment only.

1.3.2. HIV/AIDS services

In 2000, Malawi implemented a national strategic framework to combat AIDS. In 2003, a national HIV/AIDS policy was developed, laying down the guiding principles for all national HIV/AIDS programs and interventions (Government of Malawi 1999; Ministry of Health 2008). Malawi has had impressive success in scaling up antiretroviral therapy (ART) (Bemelmans et al. 2010). ART has been provided free-of-charge, through financial support mainly provided by the global fund (Nyasa Times 2011;USAID 2010). Malawi has been making use of a simple and standardised first-line ART regimen.

HIV testing and counselling (HTC) services are considered a crucial and elementary component of, as well as an entry point into HIV/AIDS services in Malawi (Government of Malawi 2009). HTC services are available at community, health centre and hospital levels. The counselling is done by trained counsellors, often HSAs. HTC is voluntary and not routinely offered to patients, except for pregnant women attending antenatal care. Until recently national HTC guidelines provided only a minimal approach towards the testing of people with mental illness. The 2003 guidelines states: "*Persons under the influence of alcohol or illegal drugs and persons who are mentally impaired should be offered counselling but not testing due to the fact that they cannot give informed consent. They should, therefore be encouraged to return for VCT when they are no longer mentally impaired*" (Government of Malawi 2003). The most recent 2009 HTC guidelines, which became available only after this study ended, contain a more liberal approach and advise that persons whose mental judgment is impaired may be offered HIV testing provided that consent is obtained from the parents or legal guardians and only when the HIV test serves as an entry point for other medical care (Government of Malawi 2009). During the past years, around 80,000 tests have been done in Thyolo on a yearly basis (Bemelmans et al. 2010). The quality of HTC is generally poor, despite the fact that supervision improved throughout the past years.

2 LITERATURE REVIEW

This literature review gives an overview of the different aspects of the relation between mental health and HIV worldwide, and in Malawi specifically. This chapter starts by explaining the search strategy, followed by a review of available literature concerning the association between mental health and HIV in Malawi. The situation of Malawi is then embedded into a global context by providing an overview of the most relevant studies of mental health and HIV. Finally, risk behaviour in patients with mental health and the role of HIV testing and counselling are discussed.

2.1 Search strategy

As a start, the Cochrane library of systematic reviews was searched. The search terms 'mental' AND 'HIV' brought up five papers, but none of these were relevant to this study. Thereafter, the MEDLINE-database was searched using the Pubmed-interface on 2 January 2009, combining the following MeSH terms: 'mental disorders' AND 'Malawi', as well as 'HIV' AND 'mental disorders'. The search 'mental disorders' AND 'Malawi' showed 21 articles (no time limit was entered). Two articles were considered relevant for the literature review.

The search 'HIV' AND 'mental disorder' was limited to articles written in the English language, published not more than 15 years ago and containing an available abstract. In order to obtain a general overview of the relation between HIV and mental health, the search was narrowed down to reviews only. This revealed 1247 papers, which were all screened by title and from which two relevant systematic reviews and fourteen reviews were extracted. The reference sections of these reviews were used to locate additional research articles. In order to identify specific articles about risk behaviour and HIV testing and counselling among mental health patients the following MeSH terms were added: 'sexual behaviour', 'risk', 'knowledge', 'HIV testing', 'substance abuse' and 'alcohol'.

Finally, two locally obtained Malawian papers from colleagues, not (yet) included in MEDLINE, were also used in this review. Google scholar was used to identify conference proceedings and additional 'grey' literature about HIV testing and counselling among mental health patients.

2.2 Mental disorders in Malawi

The literature search revealed the lack of documented evidence about mental health in Malawi. Particularly about the relationship between mental health and HIV we found very little documentation.

One article describes the spectrum of severe neuropsychiatric conditions in Malawi. It shows that the commonest reasons for admission into the only public mental hospital were: (1) schizophrenia, (2) bipolar disorders, (3) intellectual disability, (4) epilepsy, and (5) substance-related and HIV-related conditions (Kauye & Mafuta 2007).

Stewart et al. measured the prevalence of common mental disorder among women with young infants in Thyolo District. They found a 30.4% prevalence of depressive episodes, as well as associations with poverty, relationship problems, HIV-infection and poor infant health (Stewart et al. 2010).

The only article available about mental health and HIV in Malawi concerns HIV-associated dementia. Patel finds a prevalence of HIV-associated dementia of 14.0% among HIV-positive adults (Patel et al. 2010).

2.3 Mental health and HIV

There are three possible mechanisms for the interaction between mental disorders and other health conditions:

1. Mental disorders may increase the risk of other health problems
2. Some health conditions increase the risk of mental disorders
3. Comorbid mental disorders may affect treatment, disease progression and outcome of other conditions (Prince et al. 2007).

In the interaction between mental health and HIV, all of these mechanisms play a role and are discussed in the following paragraphs.

2.3.1 HIV prevalence among people with mental illness

Studies from developed countries have reported consistent evidence that adults with severe mental illness have higher rates of HIV-infection (Cournos & McKinnon 1997; Gottesman & Groome 1997; Rosenberg et al. 2001; Ayuso-Mateos et al. 1997).

The term severe mental illness (SMI) has been used for the constellation of major psychiatric disorders such as schizophrenia, bipolar disorder and major depression with psychotic features (Schinnar et al. 1990). SMI is associated with profound emotional and cognitive disturbances that lead to impairment in social and occupational functioning and periods of required hospitalization (Meade & Sikkema 2005).

The hypothesis that mental illness is a risk factor for developing HIV-infection is mainly based on indirect evidence (Prince et al. 2007). The increased risk for mental health patients to contract HIV is thought to be associated with a complex range of factors, including:

1. high-risk behaviour such as low condom use, multiple sex partners and intravenous drug use (Campos et al. 2008; Meade & Sikkema 2005),
2. social exclusion that may lead to exchange of sex for money or goods, or to forced sex (Angelino & Treisman 2008; Collins et al. 2006).
3. a cognitive deficit, impairing judgement and/or the ability to negotiate safe sex (Kelly et al. 1995; Somlai et al. 1998).

The relation between mental disorders and high risk behaviour will be discussed on page 26 and further.

Little evidence is available about the relationship between mental illness and the risk to contract HIV in low-income countries. In a systematic review of the literature on HIV and mental health, only five studies were included. In these studies, HIV-seroprevalence among study participants with mental health problems was assessed (Collins et al. 2006). All of these studies were performed in psychiatric hospitals, of which only one was in sub-Saharan Africa. This concerned a study in a Zimbabwean mental hospital, in which an infection rate of 23.8% was found (Acuda & Sebit 1996). The systematic review found that the HIV-prevalence (varying between 0 and 23.8%) appeared to correspond to the prevalence in the general population (Collins et al. 2006). A more recent study by Collins confirmed this finding: among the in-patient population of a mental health hospital

in South Africa, HIV-prevalence was 26.5% HIV positive versus an estimated prevalence for the general population of 20.9% for men and 24.5% for women (Collins et al. 2009).

In addition, Collins gives an explanation for the difference in HIV-prevalence among people with mental illness in high-income countries and those in low-income countries. She postulates that the HIV prevalence of people with mental illness in high-income countries that have a low HIV-prevalence is associated mainly with high-risk behaviour such as drug injection use and high-risk sexual behaviour. However, in low-income countries with high HIV-prevalence and negligible injection drug use the high prevalence of HIV among the general population increases the likelihood that people contract HIV shortly after sexual initiation. Therefore, HIV-prevalence among people with mental illness matches the prevalence in the general population (Collins et al. 2009).

2.3.2 HIV, a risk factor for mental illness

People infected with HIV have a higher risk of mental illness and neuropsychiatric symptoms (Prince et al. 2007). Several studies from high-income countries indicate a higher prevalence of major depressive disorder, milder depressive symptoms, anxiety disorder (Owe-Larsson et al. 2009; Starace et al. 2002), mania, psychotic disorders (Owe-Larsson et al. 2009), and substance abuse (Chander et al. 2006) among people infected with HIV.

These studies indicate that mental illness and neuropsychiatric manifestations of HIV are often a combination of complex biological, psychological and social circumstances associated with HIV-infection (Dube et al. 2005). The following mechanisms play a role (Prince et al. 2007):

1. The psychological burden arising from the acute trauma of the diagnosis, difficulties posed on daily life, the longer-term threat of physical decline and the shortened life-expectancy. In addition, the burden may be increased by necessary life style changes, complicated therapeutic regimes, aversive symptoms and stigma leading to guilt and loss of social support (Prince et al. 2007).
2. The direct effects of the virus on the central nervous system causing neuropsychiatric complications (Bell 1998).
3. Opportunistic infections of the nervous system (Neuenburg et al. 2002).

4. Side effects of antiretroviral therapy (ART) on the central nervous system (Cournos et al. 2005).

The documented information about mental health disorders among HIV-positive people in low- and middle-income countries is less extensive. A systematic review from developing countries shows a wide range of prevalence of depression among people infected with HIV (0-64%). This wide range is most likely explained by the wide variation in research methods applied. Despite this variation, the review suggests that people infected with HIV are more often psychologically distressed compared to people not infected with HIV (Collins et al. 2006). This finding was confirmed in a Malawian setting (Mwale 2006). The level of distress may be related to the severity of physical symptoms, the quality of family relations and the support of the partner (Collins et al. 2006).

2.3.3 The effect of co-morbidity of mental disorders and HIV-infection on treatment, disease progression and outcome

Evidence for an association between mental disorders and uptake of HIV services is limited. Mental disorders may delay health-seeking behaviour (Prince et al. 2007), which may result in delayed onset of HIV treatment, which is known to be associated with increased morbidity and mortality (Paterson et al. 2000). This effect may particularly increase mortality among those with mental disorders in low-income countries, where people infected with HIV generally present late for treatment.

The patient-related barriers for patients with mental disorders to access medical care may include cognitive, social support and social skills deficits, as well as symptoms of disorganization, avoidance or paranoia (Dixon et al. 2001).

On the physician's side, a delay to diagnose HIV may occur because mental health disorders are known to reduce the likelihood of diagnosing co-morbidity due to competing demands for clinical time and stigmatisation related to mental illness (Chander et al. 2006; Prince et al. 2007). In the pre-ART era, some argued that the intrusiveness of HIV testing, and the distress it caused, did not outweigh the benefits of early detection and treatment. More recently, it was argued that stereotypes present among clinicians and overestimations of their clinical judgement may withhold them from providing HIV tests to mental health patients. Many clinicians were reluctant to impose testing without informed consent (Walkup et al. 2002). In countries with a high HIV

prevalence, where the HIV pandemic draws heavily upon resources for HIV prevention, care, and treatment, the needs of people with mental illness may easily be overlooked if these people are not identified as particularly vulnerable to infection (Collins et al. 2009)

HIV disease progression and prognosis is affected by psychiatric co-morbidity. Chronic depressive symptoms, independent of receipt of treatment and co-morbid substance use are associated with increased disease progression (Ickovics & Meade 2002). The most common neuropsychiatric complication of HIV-infection, HIV-associated cognitive impairment, is associated with increased mortality. This increase in mortality is independent of baseline clinical stage, CD4 cell count, serum haemoglobin, antiretroviral treatment, and social and demographic characteristics (Wilkie et al. 1998). Co-morbidity complicates pharmaceutical treatment due to drug interactions that may change therapeutic blood levels or enhance side effects (Angelino & Treisman 2008).

In addition, both HIV and ART are, similarly to several psychiatric conditions, associated with metabolic changes such as dyslipidaemia and diabetes mellitus (Angelino & Treisman 2008). This may lead to an increase in morbidity and mortality from these conditions.

Adherence to ART is required to achieve viral suppression of HIV and prevent disease progression (Lucas 2005). Evidence from high-income countries shows that adherence may be negatively affected by depression, cognitive impairment and alcohol and substance abuse, although adherence increases with close medical observation (Prince et al. 2007).

Again, there is only limited documented evidence about the effects of co-morbidity in low-income countries. The association between depression and other mental disorders on one side and adherence on the other is not clear (Prince et al. 2007). Investigators in Uganda found no association between depression and poor adherence (Byakika-Tusiime et al. 2005) but did find increased non-adherence for patients in psychological distress or social isolation (Nakimuli-Mpungu & Musisi 2009). A study from Botswana identified alcohol misuse and depression as predictors for poor adherence to ART (Do et al. 2010).

The double burden of HIV-related and mental health-related stigma and co-morbidity is likely to increase the risk of poor health outcomes, although there is little documented evidence for this hypothesis (Collins et al. 2006; Prince et al. 2007).

2.3.4. Sexual risk behaviour of HIV-infection in patients with severe mental illness

Sexual transmission is the commonest route of HIV-infection worldwide (WHO 2007) Some sexual practices increase the risk of acquiring HIV: unprotected vaginal or anal sexual intercourse, sex with multiple partners, sex with partners at high risk for HIV (e.g. injection drug users and sex workers), sex exchange practices and unprotected sex between men (Campos et al. 2008; Prince et al. 2007).

Studies from high-income countries report that the majority of people with severe mental illness (51%-74%) were sexually active in the previous year (Meade & Sikkema 2005; Tucker et al. 2003). In low-and middle income countries, the rates of sexual activity were found to be lower, ranging from 41% in the previous two years in India (Chandra et al. 2003) to 61.6% in the previous six months in Brazil (Campos et al. 2008).

The rate of high-risk sexual behaviours in high-income countries is high among sexually active patients with SMI. Meade and Sikkema showed that 45% had multiple partners, 73% reported unprotected intercourse, 33% reported a history of sexually transmitted infections and 21% reported sex trading in the past year. All of these rates were higher than in the general population (Meade and Sikkema 2007). Campos reports high rates of inconsistent use of condoms in the previous year (12%-68%), unprotected sex in the previous three months (43%-78%), multiple partners in the previous 12 months (7%-69%), sex with a high-risk partner in the previous year (2%-58%) and sex trading in the previous 12 months (2%-50%) (Campos et al. 2008).

Campos also writes that between 2% and 10% of individuals with SMI reported to have had anal sex in the previous year and 13% to 84% ever in their lives (Campos et al. 2008).

Risk behaviour among people with SMI in low- and middle income countries is less well described. One study from Brazil found that only 16% and 22% of sexually active participants used condoms consistently in the previous six and three months respectively, and 68.2% of sexually active male inpatients reported not using condoms at all. Among psychiatric outpatients in Brazil 26.8% reported having multiple partners in the previous three months. Other data from Brazil show a high rate of sex with high-risk partners and partners whose HIV status was unknown (53.7%), or with a partner known to be HIV-positive (7.3%) (Campos et al. 2008). Sex trade was reported in Brazilian

studies for between 2.6% and 19.5% of psychiatric patients. Data from India showed (1) that females admitted with SMI are more likely than men to be engaged in sex trade for money (27% versus 9%) and (2) sexual and drug related HIV risk behaviour among in-patients (51%), most commonly, unprotected sex with a high risk partner and multiple sex partners (Chandra et al. 2003).

Information about people living with epilepsy in developed and developing countries and their engagement in sexual risk behaviour is scarce. One study from Zambia showed no higher rates of transactional sex for goods among women with epilepsy compared to a control group. However, increased vulnerability to sexual exploitation has been described (Birbeck et al. 2007).

Senn gives an overview of the many possible causes of high rates of sexual risk behaviour among people with SMI. Sexual risk behaviour may be related to: (1) certain types of psychiatric symptoms or diagnosis, (2) factors associated with SMI, such as a lack of planning skills, inaccurate risk assessment and poor communication skills, (3) lack of information, (4) lack of motivation to engage in safer sexual behaviours and (5) lack of safer sex skills. In addition, the consequences of mental illness may lead to insufficient money to purchase condoms and no privacy for safer sex negotiation and to considerable periods of hospitalization that may interfere with long-term sexual relationships and the opportunity to obtain condoms (Senn 2009).

2.3.5 Sexual risk behaviour associated with substance use

The use of alcohol and drugs is common among people with mental disorders (Campos et al. 2008). Drug- and alcohol-use disorders are frequently co-morbid with SMI (Chander et al. 2006).

Sexual risk behaviour may increase under the influence of alcohol and drugs, the use of which may lead to unplanned sex associated with lower condom use, sex with high-risk partners, and a decreased ability to negotiate safe sex practices (McKinnon et al. 1996). Dependence on alcohol and drugs is correlated with the exchange of sex for drugs, money or shelter (Logan et al. 2002).

Literature from developed countries reports that the use of drugs or alcohol before sex is common among adults with SMI (5%-45% in the previous year) (Campos et al. 2008).

The use of substances prior to sexual activity was found to increase high-risk behaviour including inconsistent condom use, sex with high-risk partners and receptive anal sex among women that used alcohol (Campos et al. 2008; Menon & Pomerantz 1997)

About these phenomena, little is described in low-and middle income countries. One paper from Brazil reported that 39% of psychiatric outpatients with SMI used alcohol or drugs shortly before sex (Guimaraes et al. 2010).

In sub-Saharan Africa, alcohol is the most common type of substance used and does play an important role in sexual risk behaviour. In sub-Saharan Africa alcohol is mostly consumed in public places. A strong association between alcohol and HIV infection among heterosexuals in sub-Saharan Africa has recently been established. Alcohol use has been associated with an increased number of sexual partners, an increased frequency of unprotected intercourse, and failure to apply condoms correctly. The amount of alcohol used, not the frequency of alcohol use, is the best predictor of high-risk sexual behaviour. Whether alcohol is the only contributor to increased sexual risk behaviour is unclear (Van Thieu & Koblin 2009). Information about alcohol use in HIV-infected patients with mental disorders in sub-Saharan Africa is scarce.

2.3.6 Injection drug use, HIV and mental disorders

Injection drug use (IDU) is prevalent worldwide and is associated with HIV transmission, due to high-risk behaviours including needle sharing and high-risk sexual behaviour (Chander et al. 2006). IDU among people with SMI in high-income countries is common, with a 20% prevalence for life time use, and 4% prevalence for use in the past year. Needle sharing was common among drugs users (Meade & Sikkema 2005). Furthermore, Campos reports in his review that IDU appears to be associated with high-risk sexual behaviour. IDU psychiatric patients had a higher number of sexual partners, as well as higher risks for trading sex in exchange for money or drugs, for having sex with unknown partners and for not using condoms during intercourse (Campos et al. 2008).

2.3.7 HIV knowledge among people with mental illness and risk of HIV

Knowledge about HIV is thought to be an essential element in HIV prevention. Studies of knowledge about HIV among psychiatric populations have primarily been conducted in

high income countries. Overall knowledge scores ranged from 63% to 80% and were comparable to those found in the general population (McKinnon et al. 1996; McKinnon et al. 2002). However, several studies show specific knowledge deficits as summarized by Campos (Campos et al. 2008).

However, possessing knowledge about HIV may in itself be a risk factor for sexual risk behaviour. Greater HIV/AIDS knowledge has been associated with increased sexual activity (McKinnon et al. 1996), but the effect of knowledge on the risk to contract HIV was equivocal (Carey et al. 1997).

Studies from low-income countries assessing knowledge related to HIV among psychiatric patients are few. A study from Brazil (Wainberg et al. 2008) and one from Nigeria (Ogunsemi et al. 2006) found a lower level of HIV-related knowledge among psychiatric patients compared to the general population.

2.4 HIV testing and counselling and mental illness

2.4.1 HIV testing and counselling

HIV testing and counselling (HTC) is an integral component of HIV prevention strategies and an entry point for HIV-care worldwide.

HIV counselling is defined as a “Confidential dialogue between a person and a care provider aimed at enabling the person to cope with stress and make personal decisions related to HIV/AIDS. The counselling process includes an evaluation of personal risk of HIV transmission and facilitation of preventive behaviour.”(Lampthey & Gayle 2001, p. 547). In the health care sector there are two models for HTC: (1) client-initiated HTC, which is often called voluntary counselling and testing (VCT) and is an opt-in model, (2) provider-initiated HTC, which is integrated in medical care and is an opt-out model (WHO & UNAIDS 2007. Guidance on provider-initiated HIV testing and counselling in health facilities. Geneva, Switzerland. 2007)

The counselling and testing (CT) procedure should follow a clear structure including pre-test counselling and obtaining informed content, post-test counselling and follow-up counselling, depending on the needs of the person. The counsellor should at least bring up the following points: the testing process, a client’s risk behaviour, coping strategies,

prevention options, reaffirmation of the decision to be tested, risk reduction strategies, disclosure of test results and referral for care and support (WHO & UNAIDS 2007)

CT is hypothesized to reduce (1) high-risk behaviour leading to decreased HIV transmission and (2) stress among those found to be infected with HIV (UNAIDS 2000). However, evidence from low-income countries shows that these hypotheses are weak (Denison, aids). In practice, pre- and post-test counselling sessions are relatively short. In South Africa, a national average of 25 minutes of pre-test counselling and 20 minutes post-test counselling was found (Freeman et al 2007). Personal experience from the researcher at the study site is that counselling in Malawi usually takes much shorter. Immediately after hearing a positive test result, someone is often in shock and the role of counselling is likely to be limited. It is unlikely that that pre- and post-test counselling may protect someone from mental distress or developing a mental disorder Freeman et al 2007). For an individual patient CT may play a role as an entry point for HIV prevention and care.

2.4.2 HIV testing and counselling among individuals with mental illness

Testing and counselling for HIV is a potential entry point for care for people with mental illness. The provider-initiated counselling and testing model for HIV testing is of importance for mental health for three reasons: (1) the HIV prevalence is believed to be elevated or at least as high among people with mental illness as previously explained, (2) testing may play a role in the differential diagnosis of neuropsychiatric symptoms and (3) people with SMI are often unaware of their HIV risk and status and are therefore unlikely to seek voluntary testing (Walkup et al. 2002).

This latter statement is not based on direct evidence since little evidence on the association between mental disorders and uptake of diagnostic HIV-services is available. However, in general, mental disorders may delay health-seeking behaviour and reduce the likelihood of diagnosing other health conditions (Prince et al. 2007).

Studies from high-income countries of HIV testing rates among individuals with SMI show 17% to 47% testing rates in the previous year and 11% to 89% lifetime prevalence of testing. One study from a state hospital in the United States reported that 10% of patients had been tested during hospitalization (Pirl et al. 2005).

Whether there is any association between testing and psychiatric symptoms is not clear: studies give different results. The hypothesis that patients with severe symptoms and

resulting distress may be less likely to be tested because of difficulties in obtaining informed consent could not be confirmed (Senn & Carey 2009).

Utilization of health services by people with mental illness was associated with a higher testing rate: higher rates were among those who (recently) used (a higher number of) treatment services (Desai & Rosenheck 2004; Meade & Sikkema 2005) and those who had a stronger therapeutic alliance with the primary clinician (Desai et al. 2007).

Individuals who engaged in sexual risk behaviour or had a history of injection drug use were also more likely to be tested for HIV (Senn & Carey 2009). Little is known about HIV testing rates among individuals with SMI in low-income countries and any relation between psychiatric symptoms or other factors and HIV testing.

2.5 Important gaps in knowledge

There is a paucity of literature about the extent of mental and neurological disorders in Malawi, clinical characteristics of patients with mental disorders, their uptake of HIV testing services, HIV prevalence among patients with mental disorders and adherence to antiretroviral treatment.

In addition, no documentation was found about the uptake of HIV testing in mental health out-patient clinics in low-income countries. No publications related to the HIV-prevalence among patients attending mental health out-patient clinics in low-income countries were found.

3 AIM AND OBJECTIVES

3.1 Aim

To undertake a descriptive study into clinical characteristics and HIV among a population treated for mental disorders in rural Malawi, in order to gain information for improvement of health care service delivery to this population, and to obtain preliminary data regarding any association between mental health, HIV-status and HIV programme uptake.

3.2 Objectives

In the context of a mental health clinic in the outpatient department of a district hospital in a rural area of Malawi, this study was set out to:

1. Describe the clinic population and its characteristics
2. Determine the uptake of HIV testing services
3. Estimate seroprevalence
4. Explore risk behaviour
5. Examine the association between high-risk behaviour and HIV-status
6. Explore differences between the population with psychiatric illness and the population with epilepsy

4 INTRODUCTION TO THE STUDY SITE

This chapter gives a short description of the study site and details about health care services in this district.

4.1 Health services: Thyolo District

The overall responsibility of the health care in the district lies with the District Health Management Team (DHMT) of the MoH. Medicines sans Frontieres (MSF) is an important partner, mainly in providing HIV care but also in wider support to health services in government and mission facilities. Mission facilities are associated in the Christian Health Association of Malawi (CHAM) that plays an important role in health care provision, with some of their facilities placed in very hard-to-reach areas.

There are two hospitals: one government district hospital and one CHAM hospital, as well as 31 smaller peripheral primary health centres. Thyolo District Hospital the largest health facility in the district and has 298 official beds, but an occupancy rate of approximately 135%. The nearest central hospital and referral clinic is in Blantyre, fifty kilometres away on a tarred road.

The outpatient department at the district hospital serves as the primary care clinic for the local catchment area, but also attracts people from catchment areas of peripheral health centres. At this department, specialized clinics are held for mental health, but also for skin diseases, ophthalmology, hypertension, diabetes, sexually transmitted infections and Kaposi's sarcoma. The HIV/AIDS clinic is located next to the outpatient department. The workload at the outpatient department is very high, with almost 4000 consultations conducted every week.

Health centres are primary care clinics and their referral clinic is the district hospital. Most health centres are run by one medical assistant and one nurse/midwife with experience in maternal and newborn care. There are no mental health services available in health centres on a permanent basis, only during outreach clinics.

A community care programme was developed to bring health care closer to the community. MoH and MSF undertake outreach to a large number of health posts and community sites in order to deliver a primary health care package, including HIV/AIDS

care, maternal and child health care and care for chronically ill patients, including mental health patients.

4.2 Mental health services: Thyolo District

Mental health services in Thyolo district are performed at three levels: inpatient care is delivered at district hospital wards, outpatient care at the hospital-based outpatient clinic and outreach clinics take place throughout the district. All mental health care in the district is provided by any of five nurses trained in basic mental health care. Two nurses are based in the hospital and conduct weekly ward rounds to review mental health patients admitted into the wards. They are also responsible for the outpatient clinic at the hospital. In addition to these tasks, both of them are allocated to other duties and departments (one of them is also the nurse-in-charge of labour ward and the safe motherhood coordinator). The three other mental health nurses work as community nurses. They conduct outreach visits to health centres and community sites and cover most areas in the district.

The referral hospital for Thyolo district is Zomba Mental Health Hospital, located one hundred kilometres to the north along a good tarred road. Referral indications, according to the mental health nurses, are: (1) any patient who remains physically aggressive despite initial medication, (2) any patients not compliant with treatment after two weeks of observation, (3) any patient not responding to treatment for over two weeks, (4) a repeated and serious request from guardians or (5) any patient who has committed a serious crime (personal communication from Mrs. Q. Chilimba, July 2009). Referral from Thyolo District Hospital to Zomba Mental Hospital can be seen as an indicator for severe psychiatric symptoms.

The mental health outpatient clinic has been located in the outpatient department of the district hospital for many years. It is held every Tuesday morning and consultations are done by mental health nurses. The clinic serves patients with epilepsy and psychiatric illness. Every health worker in the district may refer patients to the clinic. People queue in front of the door from early morning and are seen one by one in a closed consultation room. An average of 75 clients is seen on a clinic day (Thyolo Mental Health Programme 2010). Occasionally patients do not themselves attend the clinic, but send their guardians to come and collect medication. Patients carry their own documentation, a so-called health passport, in which diagnoses and treatment are documented. Drugs are dispensed by the nurses at the clinic, and are usually supplied for one month. Usually,

this pharmacological care is the only care patients receive. Lack of knowledge, experience and time among health professionals prohibits any additional type of care.

Usually, patients are admitted into the wards via the 24-hour accident and emergency department. The initial diagnosis upon admission is supposed to be made by clinicians, but usually not more than a basic description of symptoms is given, e.g. “setting houses on fire” or “talkativeness”. Although every clinical officer in the hospital was attached to Zomba Mental Health Hospital for a rotation during his or her professional training, most of them feel uncomfortable with treating mental health patients, or are simply not interested. The general attitude is to avoid coming into contact with mental health patients, even for a physical evaluation. The final diagnosis is therefore usually made by the psychiatric nurses. Inpatient care provided by these nurses is of a basic and pragmatic nature. It usually entails a brief mental health examination, requesting a somatic review from a clinician, prescribing the necessary medication and deciding upon referral or discharge.

The number of diagnoses applied is limited. However, in absence of specialist care, this basic list is practical in the local setting. A review of previous diagnosis is hardly ever done, and often medication is stopped on a patient’s initiative. Drugs from the essential health package for most mental health disorders are available in the district, including anticonvulsants, antiepileptics, medicines used in psychotic disorders, mood disorders, and generalized anxiety (WHO 2010).

Epilepsy in Malawi is diagnosed based on clinical history alone. Electroencephalography and computerized tomography are available at the central hospital, but only for exceptional cases or within a research setting. Therefore, referral to the somatic central hospital rarely takes place. Antiepileptic drugs are used to control seizures. The Thyolo District Hospital pharmacy usually has six antiepileptics/anticonvulsants from the WHO essential drug list available (WHO 2010).

5 METHODOLOGY

This chapter describes the study design and methods used for data collection and analysis.

5.1 Study design

A descriptive cross-sectional study of patients attending the mental health clinic.

5.2 Study period

1st August 2009 to 30 April 2010.

5.3 Sample size

In order to calculate the minimum sample size needed to estimate whether the HIV-prevalence among the clinic population differs from the prevalence in the general population, with a 95% confidence interval and a 5% precision, we used the following input data: (A) an estimated clinic population of 400, (B) an estimated HIV-prevalence in the general adult population of 21% (National Statistical Office 2005). Based on these assumptions, the calculated sample size was 156, using online software (<http://www.sampsize.sourceforge.net>).

5.4 Population and sampling procedure

Patients attending the clinic were included into the study if they were eighteen years or older. Excluded from the study were: (A) those under the influence of alcohol or drugs, (B) those with an acute disturbance of mental state, (C) those that suffered from a physical condition for which they required admission or (D) those with a chronically impaired mental judgement without an accompanying guardian.

During the first three clinics we included eighteen patients. We chose patients at random by including every eighth person attending the clinic. If this person appeared to be ineligible or unwilling to participate in the study, we chose the next person attending, until

a patient could be included into the study. Of all patients who were not eligible or willing to participate we did record sex, age and the type of mental disorder.

However, this organization turned out to cause considerable delays in the provision of care. Therefore, we decided to organize a second consultation room next to the original clinic and to change the randomization procedure. Consultations were still performed in the original clinic, but inclusion of study patients took place only in this dedicated second room. The next person in the queue would enter in either one of the two rooms, depending on which one was available for the next consultation. If a person in the inclusion room turned out to be ineligible, he/she still received regular care. This procedure continued until all persons in line had been seen in one of the consultation rooms. The order of the queue was strictly kept by HSAs employed to the waiting area.

5.5 Consent procedure

For eligible patients, the consultation started with a short interview in which the care provider judged whether the patient was in a stable mental state and did not have an impaired judgement or capacity preventing him or her from understanding the implications of the study and providing consent. This judgement of mental capacity was always done by or in collaboration with the researcher who is a general physician with basic mental health experience. Patients with a normal mental capacity and patients with a chronically impaired mental judgement (as observed by the care provider) but accompanied by a guardian, were explained the purpose of the research. The patient or guardian was invited to read the information sheet and consent form (appendix E&D). These were read out to illiterate patients. Written consent was obtained from the patient or guardian. If the patient or guardian consented but was unable to write, their thumbprint was used in place of a signature.

5.6 Data collection

After obtaining informed consent, the patient was interviewed by the researcher, guided by the printed patient record (see appendix C). Information was collected about socio-demographic characteristics, mental health characteristics, general health perception and problems, family planning and HIV/AIDS services utilization and risk behaviour. In case of chronically impaired mental judgment the care provider used information from both the patient and the guardian. The patient record was used as a semi-structured

questionnaire, and issues requiring further discussion took place in between answering the various questions. Sexual behaviour was not discussed in the presence of the guardian. If a patient was not able to answer the questions, this was documented in the patient record and the specific space left open. Information collected during the interview and from the patient's health passport was recorded by the care provider on the patient record. If needed, appropriate investigations or follow-up care were offered to the patient, including HTC. The results were, where possible, documented in the patient record.

Every patient with a stable mental state and no impaired judgement or capacity that would prevent him or her from understanding the implications of HTC and providing consent would be offered HTC. For patients with a chronically impaired mental judgement, the care provider would discuss the implications of HTC first with the patient's guardian. If the care provider or guardian felt that testing was not in the best interest of the patient, the patient would not be referred for HTC. This was discussed with the primary investigator. In case of no observed problems, the patient together with the guardian would be referred for HTC.

HTC was done in a dedicated room at the OPD that ensured privacy. The HTC entry point has been operating at the OPD for years and has been open to everyone. The counsellors who worked at the OPD received an additional one-day training about HIV counselling for mental health patients from the principal investigator and an experienced psychiatrist. Counselling and testing were provided according the National HIV/AIDS counselling and testing Guidelines (Government of Malawi 2009). If the counsellor felt that testing was not in the best interest of the patient, the testing would not be performed. This would be discussed by the counsellor with the referring care giver and the primary investigator. The HIV test result was documented in the patient health passport, written down confidentially according to the practice in our district and copied on the patient record form.

During the collection of HIV test results we accepted three types of results: 1) test result after referral for HTC as part of the study, 2) documented test result obtained in a recognized HTC clinic within three months prior to inclusion, and (3) a positive prior HIV-test that was properly documented. For patients who refused referral for HTC we documented the reason given.

5.7 Specimen collection and analysis

Simple rapid HIV assays, which do not require the use of sophisticated instruments, are the most commonly used assays in low-resource settings (Lyamuya et al. 2009)

For HIV testing during the study the local HIV-testing algorithm and assays were used. The district uses an algorithm of three simple rapid HIV assays. The current rapid HIV testing algorithm which is in use in Thyolo District is based on the use of Determine™ HIV-1/2 assay for screening, followed by confirmatory testing of reactive samples by Uni-Gold™ HIV-1/2, with SD Biolin as the tiebreaker for discordant results.

This HIV testing strategy based on initial testing on either SD Bioline or Uni-Gold™ assays followed by testing of reactive samples on Uni-Gold™ or SD Bioline gives almost 100% sensitivity (95% CI; 99.1–100) and 100% specificity (95% CI; 96–99.1) (Lyamuya et al. 2009).

A counsellor trained in HTC followed the regular procedure starting with pre-test counselling and obtaining informed consent. The HIV rapid assay (Determine™ HIV-1/2) was performed by the counsellor. A very small sample of blood was taken from the client's fingertip and the test was performed according the manufactures' instructions. The counsellor used new gloves on each patient. The test result was ready within 15 minutes and directly discussed with the patient during the post-test counselling session.

5.8 Data analysis

The primary outcomes were HIV resting rates and HIV status at the time of inclusion into the study.

Demographic variables were categorized for analysis by age, sex (male, female), marital status (single, married, separated, divorced), number of children, highest school level (none, primary school standard 1-4, primary school standard 5-8, secondary school or more), income generation, type of job, income per month, availability of electricity and ownership of radio or cell phone.

Variables for the mental health status were categorised for analysis by: years since onset of disease (<0.5, 0.5 – 5, 6 – 10, >10 years), diagnosis (see below), ever admitted in referral psychiatric hospital (Zomba Mental Hospital), usually in time for drug refill

(previous five visits: four out of five on time), police arrest, suicide attempt and number of seizures in the previous month.

Neuropsychiatric diagnosis were broadly classified into epilepsy (with or without developmental disorders), schizophrenia spectrum disorders, organic and newly diagnosed (duration less than 6 months) psychosis, affective disorders (bipolar disorder and major depression), substance abuse and a rest group of psychiatric conditions.

Other health status variables and risk behaviour variables were categorised for analysis by: experienced health problems by participant (yes, no), history of sexual transmitted infection (STI) treatment, history of tuberculosis (TB) treatment, knowledge of at least one modern contraceptive method, use of modern contraceptive method within last year (by patient or sexual partner within previous year), alcohol use last month, binge drinking last month (five or more standard drinks in a single day), cigarette use last month, cannabis use last month, sexual activity previous year, type of sexual relation previous year (spousal, non-spousal: occasional, regular) , number of sexual partners previous year, condom use (always, sometimes, never) with spouse previous year, condom use (always, sometimes, never) with non-spouse previous year, knowledge about HIV status sexual partner (spousal and/or non-spousal) previous year.

HIV variables were categorised for analysis by: history of HTC with or without documentation, HIV test result before inclusion into the study, use of co-trimoxazole prophylaxis, use of ARVs. Missing data were treated as missing in the analysis.

Data were collected in a Microsoft Excel data sheet. The data were analyzed using the statistical programs: Openepi, Version 2.3 (<http://www.openepi.com>) (Sullivan et al. 2009) and EpiCalc 2000, Version 1.02 (<http://www.brixtonhealth.com/epicalc.html>). The Chi squared (Fisher exact) test was used to examine if there were differences between patients with epilepsy and patients with psychiatric disorders in terms of their socio-demographic characteristics and mental health characteristics. The (two-sided) p-value is documented to show whether the difference is significant. The significance level was set at 5%.

Two-by-two tables were used to evaluate the association between a possible risk factor and HIV infection. Odds ratios and their 95% confidence limits were calculated with Fisher Exact method and documented.

5.9 Language considerations

The researcher understands and speaks basic Chichewa only, which was not enough for interviewing patients. Therefore, all consent procedures and interviews with patients and guardians who were not able to speak English fluently, were done in Chichewa by one auxiliary nurse who was guided and supervised by the researcher. The auxiliary nurse had received an extensive introduction into the study and the questionnaire, although she had not received specific training in mental health. It is possible that some answers or questions translated on the spot may have been lost in translation.

5.10 Ethical approval

The study received ethical approval by the College of Medicine Ethical Committee in Malawi and the Human Research Ethics Committee from the Faculty of Health Sciences, University of Cape Town in South Africa has been informed about the study.

University of Cape Town

6 RESULTS

This chapter describes the study findings. It starts with a description of the demographic and health profile of the study population. Thereafter, uptake of HIV testing services is described, as well as the HIV-prevalence of the study population and several subgroups. Finally, associations between high-risk behaviour and HIV status and a comparison with the general population are described.

6.1 Sample

The randomisation process yielded 185 patients over the course of the study period. Of this group, six patients were found to be under the age limit, two had an acute disturbance of their mental state and three had a chronically impaired mental judgement without accompanying guardian. All of the remaining 174 patients consented to participating in the study (n=174).

6.2 Demographics

Table 1 shows the demographic characters of the whole sample, two subgroups (patients with epilepsy and patients with psychiatric disorders) and statistical differences between these two subgroups.

Participants' ages ranged from 18 to 85 years (median age = 30, mean age = 33.2 (SD 12.6)). There were 93 men and 81 women included. Of all participants almost half (48.8%) were married and a quarter (27.0%) had been married previously. Three-quarters (72.9%) had one or more children.

The majority of participants received at least some schooling (84%). However, only 56% of them completed at least half of the primary school level ('standard 5' or higher). A large group (63%) generated their income by themselves, by farming (37%), working on a tea-estate (33%) or running a small business (20%). Most participants (79%) earned less than 6000 Malawian Kwacha per month (the equivalent of 40 US\$), 54% had a radio, 17% a cell phone, and 9% had electricity at home,

Sociodemographic characteristics of the group of patients with epilepsy and the group of patients with a mental disorder were generally comparable (see table 1). The median age in the epilepsy group was 30 years (mean age=32.5 (SD 11.9)), the same as in the group of patient with psychiatric disorders (mean age=34.0 (SD 13.6)). Three significant differences between both groups were found. Patients with mental disorders more often had an educational level of standard 5 or higher (n=52 (69%)) compared to patients with epilepsy (n=38 (38%)) (p=0.0001). Those with mental disorders who had to generate their own income more often had an income higher than 6000 Malawian Kwacha compared to patients with epilepsy (p=0.03) and patients with epilepsy had an income lower than 2000 Malawi Kwacha more often than patients with mental disorders.

Table 1: Socio-demographic variables of patients with epilepsy and psychiatric disorder

Variables	All N=174	Patients with epilepsy n=99	Patients with psychiatric disorder n=75	Chi squared test (two-sided p- value)
	n/N (%)			
Gender				
Male	93 (53)	50 (51)	43 (57)	p=0,46
Female	81 (47)	49 (49)	32 (43)	p=0,46
Age (years)				
18-19	11 (6)	6 (6)	5 (7)	p=0,88
20-24	36 (21)	21 (21)	15 (20)	p=0,99
25-29	34 (20)	20 (20)	14 (19)	p=0,95
30-34	28 (16)	13 (13)	15 (20)	p=0,31
35-39	22 (13)	17 (17)	5 (7)	p=0,06
40-44	12 (7)	7 (7)	5 (7)	p=0,84
45-49	10 (6)	5 (5)	5 (7)	p=0,90
≥50	21 (12)	10 (10)	11 (15)	p=0,49
Marital status				
Single	42 (24)	24 (24)	18 (24)	p=0.89

Married	85 (49)	47(47)	38 (51)	p=0,79
Separated/divorced	43 (25)	26 (26)	17 (23)	p=0,71
Widowed	4 (2)	2 (2)	2 (3)	p=0,81
# of children				
0	47 (27)	25 (25)	22 (29)	p=0,66
1-2	58 (33)	38 (38)	20 (27)	p=0,14
3-4	44 (25)	26 (26)	18 (24)	p=0,87
5+	25 (14)	10 (10)	15 (20)	p=0,10
Education level				
None	28 (16)	21 (21)	7 (9)	p=0,06
Primary 1-4	49 (28)	33 (33)	16 (21)	
Primary 5-8	63 (36)	21 (21)	35 (47)	<i>p=0,0007</i>
Secondary or more	34 (20)	17 (17)	17 (23)	p=0,47
Income generation by participant				
	111/174 (63)	63 (64)	48 (64)	p=0.91
Type of work				
Tea estate	25/111 (23)	18/63 (29)	7/48 (15)	p=0,13
Farming	41/111 (37)	22/63 (35)	19/48 (40)	p=0,76
Small business	22/111 (20)	12/63 (19)	10/48 (21)	p=0,99
Other	23/111 (21)	11/63 (17)	12/48 (25)	p=0,46
Monthly income (in MKW)				
<2000	20/111 (18)	17/63 (27)	3/48 (6)	<i>p=0,01</i>
2000-3999	52/111 (47)	31/63 (49)	21/48 (44)	p=0,70
4000-5999	15/111 (14)	6/63 (10)	9/48 (19)	p=0,26
≥6000	19/111 (17)	6/63 (10)	13/48 (27)	<i>p=0,03</i>
Not known	5/111 (5)	3/63 (5)	2/48 (4)	p=0,75
Household goods				
Electricity	15 (9)	8 (8)	7 (9)	p=0,98

Radio	94 (54)	50 (51)	44 (59)	p=0,36
Cell phone	29 (17)	12 (12)	17 (23)	p=0,10

6.3 Health profile

6.3.1. Mental health profile

Table 2 shows mental health characteristics of the whole sample, the two subgroups (patients with epilepsy and patients with psychiatric disorder) and statistical differences between these two subgroups.

Most participants (n=163, 93.7%) were assessed to have the capacity to provide consent to participate in the study. Eleven patients (6.3%) were assessed to be incapable, but were accompanied by a capable guardian. Patients with psychiatric disorders were found to lack capacity to consent (12%) more often than patients with epilepsy (2%) (p=0,018).

Of all included participants, more than half had epilepsy (n=99, 56.9%). One client in this group was also diagnosed with developmental disorder. Of participants with a psychiatric diagnosis (n=75, 43.1%), three-quarters had schizophrenia spectrum disorders (n=56, 74.7%). Within this group, one patient had an additional diagnosis of alcohol misuse and one of drug misuse. Other diagnoses included affective disorder (n=7, 9.3%), organic and newly diagnosed psychosis (n=8, 10.7%), and four patients with other neuropsychiatric conditions (5%).

For the majority of patients the symptoms started more than five years ago (59.2%). Those with epilepsy had a longer duration of symptoms (more than 10 years) more often than patients with psychiatric disorders (p=0.0005), and patients with psychiatric disorders more often had a short time elapse since diagnosis (less than 6 months) compared to patients with epilepsy (p=0.03).

Referral to Zomba Mental Hospital, a proxy-indicator of severe symptoms, only took place among patients with a psychiatric illness and in this group in more than half of all patients (52.3%). Only two patients (1.1%) mentioned a suicide attempt in the past. Twenty-four patients (13.8%) had ever been arrested.

Half of the patients (48.5%) with epilepsy had not experienced any convulsions in the month prior to the study, almost half (47.5%) had had one to four convulsions and a small group (4.0%) had had more than four.

Table 2: Mental health variables of patients with epilepsy and mental disorder

Variables	<i>All</i> N=174	<i>Patients with epilepsy</i> n=99	<i>Patients with psychiatric disorder</i> n=75	Chi squared test (two-sided p-value)
	n (%)			
Capacity to consent				
Capacity	163 (94)	97 (98)	66 (88)	<i>p</i> =0.018
No capacity, with guardian	11 (6)	2 (2)	9 (12)	<i>p</i> =0.018
# years since onset symptoms				
<0.5	17 (10)	5 (5)	12 (16)	<i>p</i> =0.03
0.5 – 5	54 (31)	28 (28)	26 (35)	<i>p</i> =0.46
6 – 10	27 (16)	11 (11)	16 (21)	<i>p</i> =0.10
>10	76 (44)	55 (56)	21 (28)	<i>p</i> =0.0005
Admitted in Zomba Mental Hospital				
Never	135 (78)	99 (100)	36 (48)	-
Once	25 (14)	0	25 (33)	-
More than once	14 (8)	0	14 (19)	-
Usually in time for drug refill	143 (82)	85 (86)	58 (77)	<i>p</i> =0.21
Ever attempted suicide	2 (1)	1 (1)	1 (1)	<i>p</i> =0.60
Ever arrested by police	24 (14)	11 (11)	13 (17)	<i>p</i> =0.34
Number convulsions last month				
None	-	48 (48)	-	-
1-2	-	38 (38)	-	-
3-4	-	9 (9)	-	-
5 or more	-	4 (4)	-	-

6.3.2. Health variables and risk behaviour

Table 3 shows health variables and indicators of risk behaviour for the entire sample, the two subgroups (patients with epilepsy and patients with psychiatric disorder) and statistical difference between these subgroups.

At the time of the study, the majority (74.1%) of the patients did not experience any health problems. The reported rate of sexual activity was 61%. Of all sexually active participants, 9% had multiple (2+) partners. Also 9% reported to have ever undergone STI treatment, 1% had ever been treated for tuberculosis (TB).

Knowledge about at least one modern method of contraception was present in three quarters of participants (74%). More than half (59%) of those who reported sexual activity in the previous year used a modern method of contraception at the time of the study. The use of modern contraception among patients with psychiatric disorders who reported sexual activity in the previous year (72%) was significantly higher than the use of modern contraception among patients with epilepsy (50%) ($p=0,039$).

In the group of participants with a spouse 12% had one or more other partners. Two-thirds of the participants with a spouse never used condom with their spouses. Most of the participants with additional sexual contact(s) did not use condoms with their spouses ($n=9$, 82%) nor with these other sexual contact(s) ($n=6$, 60%) (see flow chart 1). Half of the participants (53%) with a spouse reported not knowing the HIV status of that spouse.

Half of the participants with occasional or regular sexual partners reported to never use a condom and more than half (63%) reported not to know the HIV status of their occasional or regular sexual partners. Flowchart 2 shows the results of the participants without a spousal relationship, concerning their sexual contacts, condom use and knowledge of the HIV status of their sexual partner(s).

Minorities of participants reported use of alcohol (6%), binge drinking (3%), cigarette use (2%) and cannabis use (1%).

Table 3: Health indicators and risk behaviour of patients with epilepsy and mental disorder

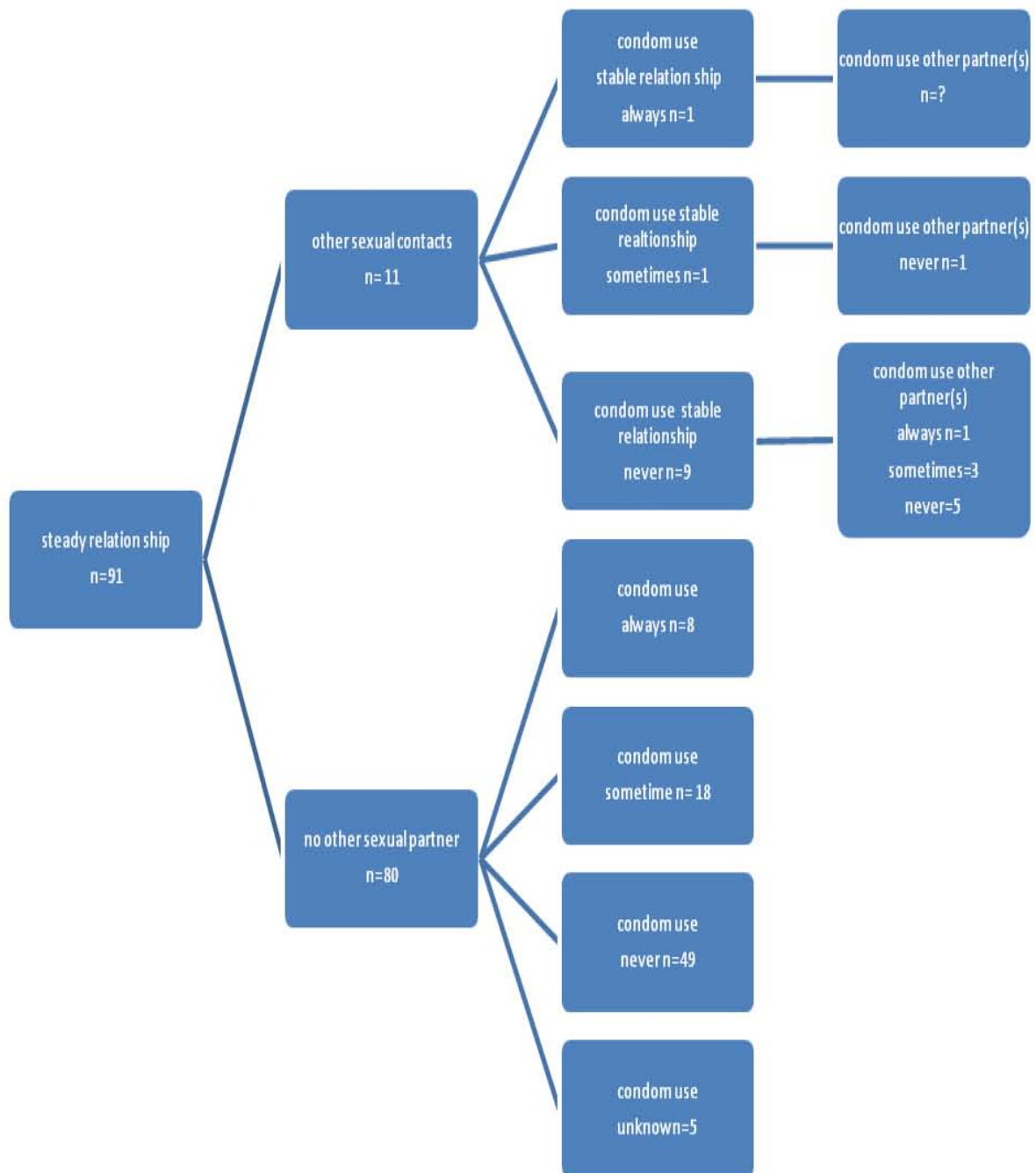
Variables	<i>All patients (N=174)</i>	<i>Patients with epilepsy (n=99)</i>	<i>Patients with psychiatric disorder (n=75)</i>	Chi squared test (two- sided p- value)
	n/N (%)			
Physical health problems experienced by patient	45/174 (26)	29/99 (29)	16 (21)	p=0.31
Sexual activity previous year				
No sexual activity	67/173* (39)	39/99 (39)	28/74* (38)	p=0.96
Spouse (+/- other partner)	91/173 (53)	50/99 (51)	41/74 (55)	p=0.63
Non-spousal relation	15/173 (9)	10/99 (10)	5/74 (7)	p=0.61
Ever treated STI	16/171* (9)	9/97* (9)	7/74* (9)	p=0.82
Ever treated TB	2/173* (1)	0/99 (0)	2/74* (3)	p=0.35
Knowledge at least one modern contraceptive method	123/174 (71)	67/99 (68)	56/75 (75)	p=0.40
Use modern contraceptive method previous year	63/106‡ (59)	30/60‡ (50)	33/46‡ (72)	p=0.04
Spouse + other partner(s) 2 or more sexual partners previous year	11/91‡ (12)	10/50‡ (20)	2/41‡ (5)	p=0.07
all	15/171* (9)	12/98* (12)	3/73* (4)	p=0.11
men	12/92* (13)			
women	3/79 (4)			
Condom use spouse				
Always	9/85*‡ (11)	3/48*‡ (6)	6/37*‡ (16)	p=0.26
Sometimes	19/85 (22)	10/48 (21)	9/37 (24)	p=0.90
Never	57/85 (67)	35/48 (73)	22/37 (59)	p=0.28
Condom use non-spousal				

partner(s)				
Always	6/28*‡ (21)	4/22*‡ (18)	2/6*‡ (33)	p=0.81
Sometimes	8/28 (29)	7/22 (32)	1/6 (17)	p=0.83
Never	14/28 (50)	11/22(50)	3/6 (50)	p=0.64
Knowledge HIV status spouse				
No	46/86*‡ (53)	27/47*‡ (57)	19/37*‡ (51)	p=0.74
Yes, positive	2/86 (2)	2/47 (4)	0/37 (0)	p=0.58
Yes, negative	38/86 (44)	20/47 (43)	18/37 (49)	p=0.74
Knowledge HIV status non-spousal partner(s)				
No	17/27*‡ (63)	14/21*‡ (67)	3/6* (50)	p=0.79
Yes, positive	0/27 (0)	0/21 (0)	0/6* (0)	-
Yes, negative	10/27 (37)	7/21 (33)	3/6* (50)	p=0.79
Alcohol use previous month	10/174 (6)	4/99 (4)	6/75 (8)	p=0.43
Binge drinking previous month	6/174 (3)	1/99 (1)	5/75 (7)	p=0,11
Cigarette use previous month	4/174 (2)	2/99 (2)	2/75 (3)	p=0.82
Cannabis use previous month	1/174 (1)	1 /99(1)	0/75	p=0.89

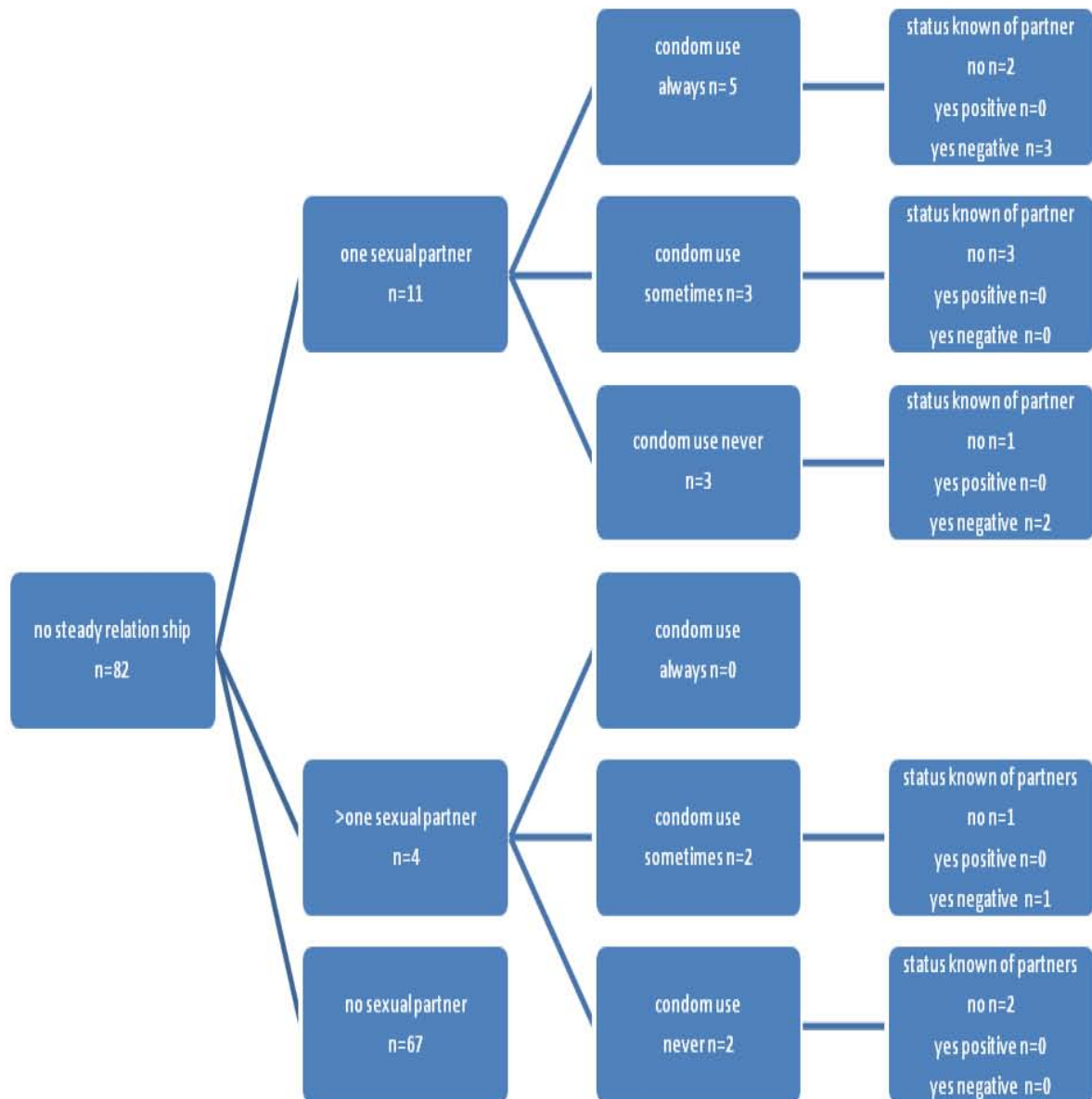
* denominator is total inclusions minus numbers unknown

** denominator is total inclusions in subgroup minus numbers unknown

Flow chart 1: Sexual contacts and condom use in participants with a steady relationship.



Flow chart 2: Sexual contacts, condom use and knowledge of HIV status of sexual partner among participants without a steady relationship.



6.3.3 HIV service uptake and pre study prevalence

Table 4 shows the uptake of HIV services and the pre-study prevalence of HIV among the entire sample, the two subgroups (patients with epilepsy and patients with psychiatric disorder) and statistical differences between these two subgroups.

Approximately two-thirds of the participants (n=110, 63.2%) reported having been tested for HIV previously. However, only one third (n=65, 37.3%) of all participants had documented evidence of a test result. Of all patients that mentioned ever being tested for HIV, seventeen patients had been diagnosed HIV-positive. The pre-study prevalence therefore was 9.8%.

Of participants (n=17) who tested HIV-positive prior to the study, six (35%) did not use co-trimoxazole prophylaxis, which they should according to national guidelines. Nine (53%) were not on ARVs: five of them (56%) had their CD4 count assessed in the previous year and were found not yet eligible for ARVs, four (44%) never had a CD4 count performed and had not been staged according WHO staging criteria. All of these patients were staged and/or referred for CD4 count according national protocols after inclusion into the study.

Table 4: HIV services uptake and pre-study prevalence of patients with epilepsy and mental disorder

Variables	All N=174	Epilepsy n=99	Psychiatric disorder n=75	Chi squared test (two-sided p- value)
	n/N (%)			
Ever tested				
No	64 (37)	38 (38)	26 (35)	p=0.73
Yes, no documentation	45 (26)	22 (22)	23 (31)	p=0.28
Yes, with documentation	65 (37)	39 (39)	26 (35)	p=0.63
Pre study test results				
Negative	93 (53)	53 (53)	40 (53)	p=0.89
Positive	17 (10)	8 (8)	9 (12)	p=0.54
Not indicate	64 (37)	38 (38)	26 (35)	p=0.73

HIV positive, not on Bactrim	6/17* (35)	2/8* (25)	4/9* (44)	p=0.74
HIV positive, not on ARVs	9/17* (53)	3/8* (38)	6/9* (67)	p=0.47
Recent CD4 >250	5/9* (56)	2/3* (67)	3/6* (50)	p=0.81
CD4 never done	4/9* (44)	1/3* (33)	3/6* (50)	p=0.81

* denominator is total inclusions in subgroup minus numbers unknown

Table 5 shows the association between severe psychiatric symptoms and HIV testing uptake. Patients without a history of severe symptoms (no previous referral to Zomba mental hospital) were less likely to have been tested for HIV compared to patients with severe psychiatric symptoms. This difference approached statistical significance.

Table 5 : Association between severe psychiatric symptoms and HIV testing uptake

	Never tested before n/N (%)	Unadjusted OR (95% CI)
Severe psychiatric symptoms (referral to Zomba)	9/39 (23%)	0.4 (0.17-1.04)
No severe psychiatric symptoms	55/135 (41%)	Reference

6.3.4. HIV prevalence

Tables 6 and 7 show the prevalence of HIV in various subgroups and the associations between demographic and mental health indicators and HIV infection.

Of all 174 participants, 162 final test results were collected through (1) performing counselling and testing as part of the inclusion into the study, (2) documentation of a result obtained in a recognized HTC clinic of a test performed in the three months prior to inclusion, or (3) documentation of a properly documented positive HIV test result. From twelve participants (6.9%) we did not obtain an HIV test result: five participants did not return after going for HTC and seven participants refused testing. Reasons for refusal

were: 'no interest', 'want to discuss with partner or guardian', 'presupposed knowledge about a negative HIV-status' or, 'too old to be tested'.

Among those who were never tested before (n=64), five tested positive. Among participants who were tested before and could show proper documentation (n=65), sixteen participants had already tested positive and no extra participants had tested positive in this group. In the group of patient who were tested before, but could not show documentation (n=45), one participant had already been tested positive and two other participants tested positive.

Among participants from whom test result were obtained (n=162), 24 were found HIV positive (14.8%; 95% CI=9.73-21.24). Most HIV-positive participants (54%) were in the 25-34 age group, followed by the 35-44 years old group (21%) and the 18-24 age group (17%).

Differences in prevalence of HIV-infection between women (n= 17, 21.8%, 95% CI=13.69-31.96) and men (n=7, 8.3%, 95% CI=3.72-15.79) was statistically significant, suggesting that women were three times as likely to be infected with HIV compared to men (p=0.027, OR 3.05; CI=1.21-8.33).

We found no association between other demographic factors (age, marital status, education level, income generation by participant, type of work and height of monthly income) and HIV- status.

Table 6: Association of demographic factors and HIV infection

Variable		HIV prevalence n/N (%)	Unadjusted OR (95% CI)
Gender	Male	7/84 (8.3)	Reference
	Female	17/68 (21.8)	3.0 (1.11- 9.27)
Age (years)	18-19	0/10 (0)	
	20-24	4/33 (12,1)	Reference
	25-29	5/31 (16,1)	1.4 (0.267-7.78)
	30-34	8/25 (32,0)	3.3 (0.76-17.52)
	35-39	2/21 (9,5)	0.8 (0.127, 4.59)
	40-44	3/12 (25,0)	2.4 (0.45-12.88)
	45-49	1/10 (10,0)	0.8 (0.015-9.70)
	≥50	1/20 (5)	0.4 (0.007-4.1)
	Marital status	Single	3/38 (7.9)
Married		15/82 (18.3)	2.6 (0.67-14.91)
Separated/divorced		5/38 (13.2)	1.8 (0.31-12.2)
Widowed		1/4 (25.0)	3.7 (0.06-69.4)
Education level	None	4/27 (14.8)	1.9 (0.31-10.95)
	Primary 1-4	4/47 (8.5)	Reference
	Primary 5-8	12/61 (19.7)	2.6 (0.72-11.94)
	Secondary or more	4/27 (14.8)	1.9 (0.31-10.95)
Income generation by participant	Yes	10/53 (18.9)	1.5 (0.56-4.04)
	No	14/106 (13.2)	Reference
Type of work	Tea estate	4/24 (16.7)	1.4 (0.25-7.32)
	Farming	5/40 (12.5)	Reference
	Small business	3/22 (13.6)	1.1 (0.15-6.41)
	Other	2/20 (10)	0.8 (0.07-5.4)
Monthly income	<2000	3/25 (12.0)	Reference
	2000-3999	10/70 (14.3)	1.2 (0.28-7.53)

	4000-5999	2/18 (11.1)	0.9 (0.07-9.02)
	≥6000	6/21 (28.6)	2.9 (0.51-20.5)

Participants with psychiatric conditions were 1.5 times more likely to be infected with HIV compared to those with epilepsy. However, the difference was not significant (OR 1.46, 95% CI 0.55-3.84).

No association was found between age, marital status, educational level, income generation by participant, type of work, height of monthly income, capacity to consent to the study, time since onset of symptoms or admittance into Zomba Mental Hospital.

Table 7: Association between mental health indicators and HIV infection

Variable		HIV prevalence n/N (%)	Unadjusted OR (95% CI)
Diagnosis	Epilepsy	12/94 (12.8)	Reference
	Psychiatric disorder	12/68 (17.7)	1.5 (0.56-3.84)
Capacity to consent	Yes	22/154 (14.3)	Reference
	No	2/8 (25.0)	2.0 (0.19-12.08)
# of years since onset symptoms	<0.5	1/17 (5.9)	Reference
	0.5-5	9/47 (19.1)	3.7 (0.49-176.3)
	6-10	4/25 (16)	3.0 (0.26-159.3)
	>10	10/73 (13.7)	2.5 (0.31-117)
Admitted in Zomba Mental Hospital (only for psychiatric disorder)	Never	8/33 (24.2)	Reference
	Once or more	4/35 (11.4)	0.4 (0.08-1.74)

6.3.5. Association between HIV status and risk behaviour

Tables 8 and 9 show the association between risk factors and HIV infection, in the entire sample and in the subgroup of patients with psychiatric disorders.

One quarter (26%) of all participants who reported physical health problems were found to be HIV positive. This was significantly higher than the HIV prevalence among participants who did not report health problems.

There were no significant associations between HIV-status and sexual activity, history of STI treatment, history of TB treatment, knowledge of at least one modern contraceptive method, use of modern contraceptive method previous year, multiple sexual partners, condom use with spouse, condom use with non-spousal partner(s), alcohol use and history of HIV testing (see table 8).

Table 8: Association between risk factors and HIV infection whole sample

Risk factor		HIV prevalence n/N (%)	Unadjusted OR (95% CI)
Physical health problems experienced by patient	Yes	11/42 (26)	2.9 (1.06-7.82)
	No	13/120 (11)	Reference
Sexual activity previous year	Yes	18/102 (18)	1.9 (0.66-6.18)
	No	6/59 (10)	Reference
Ever treated STI	Yes	3/15 (20)	1.5 (0.25-6.13)
	No	21/145 (14)	Reference
Knowledge one modern contraceptive method	Yes	17/117 (15)	Reference
	No	7/45 (16)	1.1 (0.35-3.02)
Use contraceptive method previous year	Yes	8/62 (13)	Reference
	No	16/99 (16)	1.3 (0.48-3.76)
2 or more sexual partners previous year	Yes	2/14 (14)	1.0 (0.10-4.93)
	No	21/145 (14)	Reference
Condom use with spouse	Consistent	3/9 (33)	Reference

Condom use with non-spousal partner(s)	Inconsistent	11/74 (15)	0.4 (0.06-2.51)
	Consistent	1/6 (17)	<i>Reference</i>
Alcohol use previous month	Inconsistent	3/20 (15)	0.9 (0.06-55.47)
	Yes	0/9 (0)	-
Binge drinking previous month	No	24/153 (16)	-
	Yes	0/5 (0)	-
Cigarette use previous month	No	24/157 (15)	-
	Yes	0/4 (0)	-
Cannabis use previous month	No	24/158 (15)	-
	Yes	0/1	-
History of HIV testing	No	24/161 (15)	-
	Yes+documents	16/64 (25)	3.4 (1.09-12.92)
	Yes -documents	3/41 (7)	0.8 (0.12-4.53)
	No	5/57 (9)	<i>Reference</i>

For patients with a psychiatric disorder there were no significant associations between HIV status and physical health problems, sexual activity, history of STI treatment, knowledge of at least one modern contraceptive method, use of a modern contraceptive method in the previous year, multiple sexual partners, condom use with spouse and history of HIV testing (see table 9). History of TB treatment, condom use with non-spousal partner(s), and any use of alcohol, cigarettes and cannabis were left out of the analysis because of their small absolute numbers.

Table 9: Association between risk factors and HIV infection in patients with psychiatric disorder

Risk factor		HIV prevalence n/N (%)	Unadjusted OR (95% CI)
Physical health problems experienced by patient	Yes	3/14 (21)	1.4 (0.20-6.77)
	No	9/54 (17)	Reference
Sexual activity previous year	Yes	7/44 (16)	0.7 (0.16-3.14)
	No	5/23 (22)	Reference
Ever treated STI	Yes	3/6 (50)	5.7 (0.66-49.44)
	No	9/62 (15)	Reference
Knowledge at least one contraceptive method	Yes	9/54 (17)	Reference
	No	3/14 (21)	1.4 (0.20-6.77)
Use modern contraceptive method previous year	Yes	4/33 (12)	Reference
	No	8/34 (24)	2.2 (0.52-11.22)
2 or more sexual partners previous year	Yes	1/3 (33)	2.8 (0.04-58.46)
	No	11/63 (17)	Reference
Condom use with spouse	Consistent	1/6 (17)	Reference
	Inconsistent	4/30 (13)	0.8 (0.06-45.37)
History of HIV testing	Yes+documents	9/26 (35)	3.3 (0.67-21.89)
	Yes-documents	0/20 (0)	-
	No	3/22 (14)	Reference

6.4 Comparison with the general population in Thyolo District

Table 10 shows the HIV-prevalence among the clinic population compared to the general population.

The Demographic and Health Survey in 2004 (ref) showed a seroprevalence of 23.1% among women and 18.6% among men in Thyolo District. The seroprevalence among the general population (15-49 years) in Thyolo was 21%.

We found people in the mental health clinic population less likely to be infected with HIV than people in the general population. The differences in prevalence of infection between the clinic population (n=24, 14.8%) and the general population (n=271, 21.0%) approached statistical significance.

There was a significant difference in prevalence among men in the mental health clinic population (n=7, 8.3%) and the general population (n= 126, 18.6%) Men in the clinic population were half as likely to be infected as men in the general population. The prevalence among women in the clinic population (21.8%) and in the general population (23.1%) was comparable.

Table 10: HIV prevalence general population of Thyolo District and clinic population

	<i>General population</i> <i>n/N (%)</i>	<i>Clinic population</i> <i>n/N (%)</i>	<i>Chi squared test</i> <i>(two-sided p-value)</i>
All	271/1290 (21.0)	24/162 (14.8)	p=0.08
Men	126/677 (18.6)	7/84 (8.3)	p=0.03
Women	145/628 (23.1)	17/78 (21.8)	p=0.91

The mental health clinic population was significantly higher educated than the general population (56% of the clinic population completed standard 4 or more, compared to only 31% in the general population (p<0.05), and 20% of the clinic population had reached up to secondary school level or higher, compared to only 9% in the general population (p<0.05)). Those in the clinic population more often had access to electricity (9% versus 0.3%, p<0.05) and the rates of radio ownership (54% versus 59%) and employment were comparable (63% versus 66%).

Sexual activity in the past year was lower in the clinic population compared to the general population in Thyolo (61% versus 85%, p<0.05). Knowledge about at least one modern method of contraception was also lower in the clinic population (74% versus

99.8%, $p < 0.05$), but current use of family planning among married women was higher in the clinic population (54% versus 28%, $p < 0.05$). The percentage of men and women having multiple partners in the clinic population (13% versus 4%) were higher than the percentages of men (11%, $p = 0.74$) and women (0.4%, $p < 0.05$) in the general population in Thyolo.

The use of alcohol (6% versus 17%), binge drinking (3% versus 8%) and cigarettes (2% versus 12%) in the clinic population were low compared to general population in Malawi (WHO & MoH 2010).

The uptake of HIV testing among the clinic population was high (63%) compared to uptake of HIV testing among the adult population in Malawi, which is estimated to be 25% (National Statistical Office 2005).

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7 DISCUSSION

This is the first known study to HIV among mental health patients visiting an outpatient clinic in a Malawian setting. We found an HIV-prevalence of 14,8% among patients attending a mental health out-patient clinic in a rural district hospital in Malawi between August 2009 and April 2010. The women in the population were three times more likely to be HIV-positive compared to men. Besides gender, we did not find any significant association between demographic or (mental) health factors and HIV infection. Self-reported physical health problems were the only significant risk factor associated with HIV infection.

Contrary to the hypothesis from high income countries that mental illness is a risk factor for developing HIV infection (Ayuso-Mateos et al.1997; Cournos & McKinnon 1997; Gottesman & Groome 1997; Rosenberg et al. 2001) or to the hypothesis from low-income countries with high HIV-prevalence that the prevalence among those with mental illness would match the prevalence in the general population (Collins et al. 2009), we found that clients attending the clinic were *less* likely to be infected compared to the general population. This is a remarkable finding that provokes a new way of thinking about HIV-infection among the mentally ill in rural settings such as Thyolo.

Patient's factors and factors related to their illness may have protected them against acquiring HIV. The reported rate of sexual activity was 61%. This is lower than the rate in the general population and can be explained sexual disinterest or dysfunction due to psychiatric symptoms and side effects of drugs (Gottesman & Groome 1997) and by stigmatization. People with mental illness and epilepsy may be more stigmatized and therefore less able to engage in risky sexual relationships – particularly men. This is confirmed by the gender distribution which showed that women (who are presumably more sexually vulnerable) have comparable rates of infection to the general population, whereas men from the mental health clinic had much lower rates than men in the general population. Alcohol consumption was also lower in the clinic population compared to the general population. Additionally, the mental health clinic population was regularly exposed to health promotion and other preventive measures during the monthly clinic visits. However, the lower HIV-prevalence among the clinic population may also be explained by increased mortality among people with mental illness and HIV in a (remote) setting with poor health infrastructure (WHO 2011b). A high mortality rate would also explain the interesting finding that patients from our sample with SMI (those who had been referred to the psychiatric hospital) had an even lower HIV prevalence compared to

the sample prevalence (11.4% versus 14.8%), despite a high rate of sexual activity in this specific population (76%).

The study sample, which was obtained through randomisation, was comprised of almost half of our estimated clinic population and contained 18 participants more than the required sample size. The population attending the clinic was doing fairly well and symptoms generally appeared to be reasonably well under control. Only in five cases was the presence of neuropsychiatric symptoms a reason for exclusion from the study. Almost all participants were able to give informed consent (94%) themselves, in only 6% of cases we had to resort to asking the guardian for consent. Even those patients who had been admitted previously into the mental hospital were usually able to provide consent by themselves. The fact that the clinic functioned reasonably well, sustained an adequate drug supply, had a low staff turnover and provided weekly consultations may have contributed to this finding. A good relationship with the healthcare staff and consistent treatment are important in adequate management of people with mental disorders, who usually require long term clinic attendance. However, the fact that those with mental disorders attending the clinic are a selected population of relatively stable patients may also have played a role. These clients are able to visit the clinic and participate in social life and often have strong social support.

More patients were diagnosed with epilepsy (57%) than with psychiatric disorders (43%). Diagnoses within the schizophrenia spectrum were the commonest psychiatric diagnoses (74.7%). The second largest group were the affective disorders (9.3%). Dual diagnoses of psychiatric disorders and substance abuse were very uncommon (2.6%) compared to literature from high income countries (Chander et al. 2006). Patients with psychiatric disorders were more often higher educated and generated a higher income compared to patients with epilepsy. These findings also indicate that those with mental disorders attending the clinic may be a sample of relatively stable patients who may not reflect the broader population of people living with mental illness. .

Our sample show similar rates of sexual activity (61%) to other studies from around the world (Chandra et al. 2003; Meade & Sikkema 2005; Tucker et al. 2003). The rate of high-risk sexual behaviours among sexually active patients in our sample cannot be compared with the general population in Thyolo or Malawi due to absence of data. Comparison with other out-patient psychiatric populations shows a lower rate of multiple partners (9% versus 45% in the US (Meade & Sikkema 2007), and versus 26.8% in Brazil (Wainberg et al. 2008). Of the sexually active participants 9% had multiple

partners. Within spousal relationships there was high inconsistent condom use (87%) and poor knowledge about the HIV status of their partners (53%). Also in participants with non-spousal sexual partners inconsistent condom use (79%) and absence of knowledge about their partners' status (63%) were high. The reported history of STI or TB treatment, and the use of alcohol, cigarettes or cannabis were low. This may be a reflection of sexual high risk behaviour in the general population.

Two-thirds of the participants (63%) reported having been tested for HIV before. The uptake of HIV testing was unexpectedly high (63%). Even though no literature from low-resource settings is available, we did not expect the testing rate to be higher than that of the adult population in Malawi. However, the testing rate in Thyolo is unknown, and may be higher than the testing rate in Malawi, due to a large HIV/AIDS project operating in the area. This high uptake of HIV testing services may be related to high utilization of health services by the clinic population and a stronger therapeutic alliance with the care providers, which has been reported by studies from developed countries (Desai & Rosenheck 2004; Desai et al. 2007; Meade & Sikkema 2005). Also the presence of fairly well organized HIV testing in Thyolo District, health messages at the OPD waiting area and HIV testing services at the OPD, may have contributed to high HIV testing uptake.

By contrast however, mental health patients do not easily access treatment for their HIV disease. One-third (35%) of the patients who knew their positive status did not use co-trimoxazole prophylaxis according to national protocol and almost half (44%) of the HIV-positive patients not on ART had never been assessed for ART eligibility. These findings may be caused by health workers' reluctance to start ART or co-trimoxazole in mental health patients based on prejudice or the fear of poor adherence or high work pressure.

The hypothesis that patients with severe symptoms and resulting distress were less likely to be tested (Desai & Rosenheck 2004; Desai et al. 2007; Meade & Sikkema 2005; Senn & Carey 2009) was not confirmed in this study. Moreover, we found that those with a history of severe symptoms had more often been tested than those who never had severe psychiatric symptoms. The fact that HIV testing has become a requirement before being able to refer, and the increase in knowledge about neuropsychiatric manifestations in HIV among clinicians during recent years may have contributed to a higher HIV-testing rate among patients with severe psychiatric symptoms. Also, the availability of ART and treatment for opportunistic infections may have contributed to this finding, since HIV testing became an entry point for medical services in contrast to the pre-ART era.

Since this is the first study of its kind, comparing findings with from neighbouring countries that have similarly high HIV-prevalence rates are noteworthy. These latter studies, from Zimbabwe (Acuda & Sebit 1996) and South Africa (Collins et al. 2009), were performed among psychiatric in-patients, where our sample concerned out-patients. Out-patients clinically fare better than in-patients and may therefore have less high-risk sexual behaviour associated with certain psychiatric symptoms (Senn 2009), less social exclusion that may lead to exchange of sex for money or goods, or to forced sex and less severe cognitive deficit, impairing judgement and/or the ability to negotiate safe sex (Collins et al. 2006). In other words, out-patients may have less factors associated with an increased risk to contract HIV.

Our sample is a mixture of patients with (severe) mental disorders and epilepsy. Little is known about seroprevalence among people with epilepsy in low-income countries compared to patients with SMI, or about social exclusion rates and cognitive deficit among this specific population. There is a chance that patients with epilepsy have an increased risk of HIV-infection. However, those with epilepsy visiting the clinic were generally faring quite well, and had a low rate of monthly seizures (76% reported to have had less than three seizures in the previous month). These patients were either able to visit the clinic by themselves or were supported by caring guardians. This makes 'social exclusion' and 'cognitive deficit' probably minor factors in this specific population.

Our study suggests that people attending the mental health outpatient clinic in Thyolo are at high risk of contracting HIV, just like the general Malawian population. There were no specific patient-related factors that justify withholding HIV testing from patients with mental disorders: most clients were able to work, generated their income by themselves and received schooling. Almost all patients were found to have the capacity to consent to the study, or were accompanied by a guardian. Most patients came in time for their drug refill indicating good adherence, with substance abuse playing only a minor role. These are important findings as they seem to oppose the notion that mental health patients are not able to live a normal live and are incapable of consenting to HIV testing.

In fact, the high rate of high-risk sexual behaviour among this population and the generally high HIV-prevalence in Thyolo District should oblige health staff to offer HTC to mental health patients. In addition, our study suggests that patients with double diagnoses (and related stigma) of mental illness and HIV may miss out on services available within the health system.

8 STUDY LIMITATIONS

A number of caveats are noteworthy. A sampling bias exists, since all participants are recruited from a treatment site. Therefore, results may not be generalized to people with mental illness who do not receive mental health care. Second, a few patients were found not to be eligible for the study. Therefore the sample does not represent the entire clinic population. Third, a number of participants chose not to undergo HIV testing or were lost to follow up, with the result that the HIV prevalence of the included sample may differ from the true HIV prevalence in the total clinic population. However, we do think that the effects of the latter two limitations are minimal: most people gave consent to participate and loss-to-follow up and opt-out rates were low.

The fact that the main researcher was one of the two doctors in the hospital, the supervisor of the outpatient department and known by many of the patients attending the clinic, may lead to socially acceptable answers as clients answer conform what they think the doctor wants to hear. Direct interviewing may be uncomfortable to patients. Therefore, rates of high-risk sexual behaviour, substance abuse and history of HIV testing for instance, are minimum rates only and may be higher in reality.

9 CONCLUSIONS

Among clients attending the outpatient mental health clinic at a rural Malawian district hospital, HIV-prevalence was lower (14.8%) compared to the general population (21%). A lower rate of sexual activity and alcohol use, stigmatization, higher exposure to health promotion and poor health infrastructure has probably contributed to this finding.

High risk sexual behaviours were common among sexually active clients, despite the fact that they were on average better educated than the general population. The pre-study uptake of HIV-testing was high (63%), but among those clients who had tested HIV-positive previously, the uptake of HIV-care was low. Although this concerns a selected population attending a clinic, our findings indicate a treatment gap in mentally ill patients in this rural Malawian setting, despite the fact that this clinic population was very well able to undergo testing and counselling for HIV and despite the fact that the mentally ill should receive attention as a particularly vulnerable group within Malawian society.

Contrary to the hypothesis from high income countries that mental illness is a risk factor for developing HIV infection (Ayuso-Mateos et al. 1997; Cournos & McKinnon 1997; Gottesman & Groome 1997; Rosenberg et al. 2001) or to the hypothesis from low-income countries with high HIV-prevalence that the prevalence among those with mental illness would match the prevalence in the general population (Collins et al. 2009), we found that clients attending the clinic were *less* likely to be infected compared to the general population. This is a remarkable finding that provokes a new way of thinking about HIV-infection among the mentally ill in rural settings such as Thyolo.

10 RECOMMENDATIONS FOR POLICY AND PRACTICE IN MALAWI

To promote the overall health of people with mental illness in Malawi, it is important that they are tested for HIV. An outpatient (mental health) clinic may be an opportune venue for HTC for several reasons. First of all, this is the place where they can be found, therefore it may reduce patient delay and the need for additional appointments and waiting time. Second, the mental health care providers can provide, to a certain extent, additional counselling that is tailored for people with mental illness and address issues related to stigma.

To reduce barriers of health care providers to offer HIV services to people with mental disorders, including HIV testing and counselling, as well as treatment for HIV positive individuals, health care workers should be provided with training around HIV care and mental health. This should become an integral part of the Malawian National ARV training and should include basic information on HTC for people with mental illness, additional counselling and stigma, information about drug interaction and side effects. In addition, on the job supervision to promote comprehensive care giving and address difficulties should be provided.

The tremendous workload of health workers in Malawi, and the workload of mental health nurses in particular, make it difficult to offer comprehensive care. Ways to decrease patient load should be looked into. Currently, drug administration and pill counting is done by a well trained mental health nurse, which can be task shifted to lower cadre staff as is commonly done in Malawi for other tasks, including HIV-related duties (Bemelmans et al. 2010).

Contact between district hospitals and the referral mental health hospital in Zomba should be implemented. Currently, ARV adherence may become compromised during referral from and to district hospitals.

For the longer planning, complete integration of mental health care into primary care and a referral clinic for more specialized mental health care at district level may contribute to closing the treatment gap, improving mental health care for all patients and reducing stigma (WHO & WONCA 2008). This is in keeping with the recommendations of the WHO and the mhGAP Intervention Guide (WHO, 2010). Primary health care workers

should be trained in order to have skills and competencies to effectively assess, diagnose, treat, support and refer people with mental disorders. They should work closely with community workers and actively promote the health of people with mental disorders living in the community.

11 RESEARCH NEEDS

The impact of the HIV diagnosis on an individual with a severe mental illness deserves further study. With counselling and testing we aim for reduction of stress, reduction of sexual risk behaviour and entry into appropriate care. Research can determine whether HIV counselling and diagnosis actually contributes to this in patients with mental illnesses. Second, research is needed on the role of double stigma after being diagnosed – particularly the effect on social life and utilization of health care. Possibly, further studies may be needed to investigate interventions which are adjusted for individuals with mental illness.

Service barriers withholding from increase of HIV testing rates and HIV treatment for mental health patients in low-income countries have not been studied. Qualitative research investigating these barriers contributes to better service delivery and comprehensive care for patients with mental disorders.

One other important area for research is adherence of patients with mental disorders to medication. Even if people with mental illness are tested for HIV and prescribed medication, there is a chance that they may not benefit, due to a difficulty in adhering to ART (ref), however this has not been extensively studied in low-income countries. Needed are studies to investigate mental health related predictors of adherence to ART in Malawi and other similar settings. If adherence is found insufficient, interventions should be developed to improve adherence.

Regular monitoring of mental health status and medication is important in follow-up of patients with mental disorders. However, in Thyolo, patients coming for their monthly drug refills overwhelm out-patients mental health clinics and, in this way, compromise patient care to those patients requiring more specific attention. Reducing the frequency of visits for stable patients may improve the overall quality of care.

Finally, the outcome of HIV treatment in mental health patients in low-resource settings merits study. Studying morbidity and mortality may contribute to more insight into the clinical course of comorbidity of HIV and mental disorders.

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University of Cape Town

APPENDICES

Appendix A. Map of Thyolo District





UNIVERSITY OF MALAWI

Principal

Prof. R.L. Broadhead, MBBS, FRCP, FRCPC, DCH

Our Ref.: COMREC/10

Your Ref.: P.01/09/720

College of Medicine
Private Bag 360
Chichiri
Blantyre 3
Malawi
Telephone: 677 245
677 291
Fax: 674 700
Telex: 43744

3 April 2009

Dr Kinke Lommerse
Thyolo District Hospital
P.O Box 21
Thyolo

Dear Dr Lommerse

RE: P.01/09/720 – A descriptive study of seroprevalence and uptake of HIV services in a mental health clinic in a Malawian district hospital

I write to inform you that COMREC reviewed your proposal mentioned above which you resubmitted. I am pleased to inform you that your proposal was approved after considering that you addressed all the queries which were raised in an earlier review.

As you proceed with the implementation of your study we would like you to take note that all requirements by the College are followed as indicated on the attached page.

Sincerely,

Prof. J.M. Mfutso-Bengo
CHAIRMAN - COMREC

JMMB/ck



Appendix C. Patient record

PATIENT RECORD PART I: general status **Patient Number.....**

(document in health passport)

Date first recording:

Age:

Sex: female † male †

Religion:

Social

Marital status: single † married † divorced † other †.....

Number of children:

Highest school level:

Employment: † currently employed † not employed in last 12 months

Income generation by:

Patient's income per month:

Number of persons in the household:

Partner lives within the same household: yes † no †

Number of own children in the household:

Number of other children in the household:

Number of other adults usually in the household:

If children do not live with the patient, who takes care of the patient's children:

Household characteristics and patient's goods

Electricity in the house: yes † no †

Radio in the house: yes † no †

Patient owns a cell phone: yes † no †

Mental health information:

When was the patient diagnosed with a mental health disorder:

What is the (provisional) diagnosis:

How often does the patient visit the mental health clinic:
weekly† monthly† 2-monthly† randomly† other†.....

Does the patient usually come in time for a drug refill: yes†no†

What is the current prescribed treatment:

Does the patient experience side effects from the drugs: yes† no†

Which side effects/ complaints:

1. Provisional diagnosis epilepsy: †

How old was the patient when the first convulsions started:.....

How many convulsions did the patient have previous month:.....

2. Provisional diagnosis psychotic disorder: †

How old was the patient when the first symptoms started:

Presenting symptoms at start:

Current situation:.....

Positive Symptoms (e.g. delusions, hallucinations, thought disorder, affective disturbance)

yes† no†, which symptoms:

Negative Symptoms (e.g. social withdrawal)

yes† no†, which symptoms:

3. Provisional diagnosis other: †

Which other diagnosis:

Presenting symptoms:
.....

Current situation:

.....

CD4 count results: date: result:

date: : result:

date: : result:

Any extra information:

.....

PATIENT RECORD PART II: risk assessment **Patient Number.....**

Risk behaviour alcohol and drugs

Have you drunk alcohol in the previous month? yes† no†

How often? daily† weekly† monthly†

Have you drunk 5 or more drinks on one occasion? yes† no†

What type of alcohol do you drink?

Have you smoked cigarettes in the previous month? yes† no†

How often? daily† weekly† monthly†

Have you smoked chambe in the previous month? yes† no†

How often? daily† weekly† monthly†

Risk behaviour sexual

Do you have a stable relationship at this moment?

Yes† → Apart from that relationship, did you have any other sexual partners last year? no† yes†, number of other sexual partners last year:.....

Are those sexual partners regular or occasional partners?

†regular † occasional

How often do you use condoms in your stable relationship:

Always † Sometimes † Never †

How often do you use condoms with your other sexual partners?

Always † Sometimes † Never †

Do you know the HIV status of your stable relation? yes † no †
If yes: what is the result?.....

Do you know the HIV status of any of your other partners? yes † no †

If yes: what is the result?.....

No † → Did you have any sexual partners last year?

no † yes †, number of other sexual partners last year:.....

Are those sexual partners regular or occasional partners?

† regular † occasional

How often do you use condoms with your other sexual partners?

Always † Sometimes † Never †

Do you know the HIV status of any of your sexual partners? yes no †

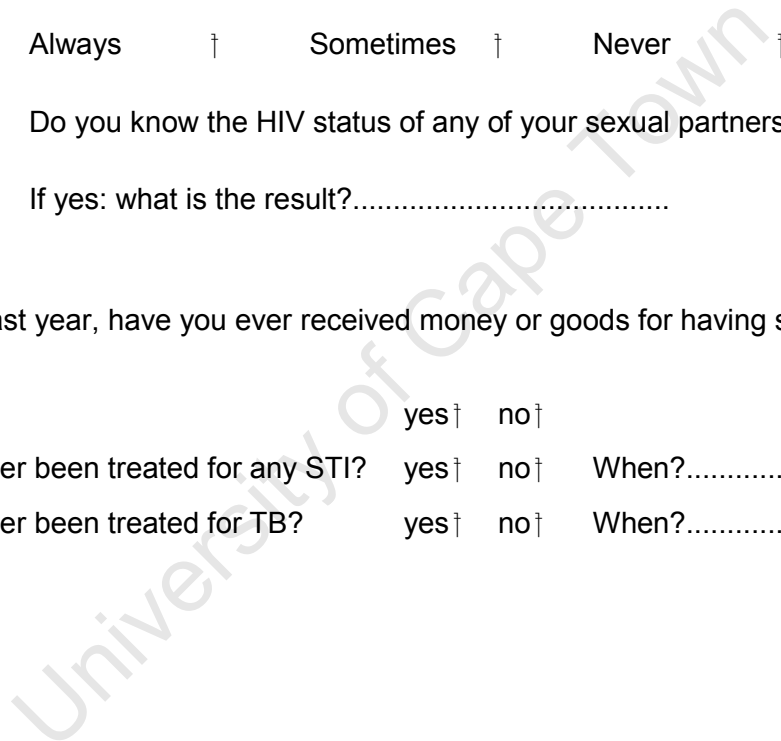
If yes: what is the result?.....

During the last year, have you ever received money or goods for having sex with anyone?

yes † no †

Have you ever been treated for any STI? yes † no † When?.....(year)

Have you ever been treated for TB? yes † no † When?.....(year)



<u>Current assessment (member)mental health team TDH:</u>		
Under the influence of alcohol or drugs	yes †	no †
Acute disturbance of mental state/acute psychosis	yes †	no †
Physical condition which needs admission	yes †	no †
Mental judgement patient:	Adequate †	Impaired †
Assessment done by:		(name)
.....		(date)
Accompanying guardian present in chronic impaired mental judgement: yes † no		

Need for referral or support:

- 1. referral for HTC yes † no †
- 2. other referral or action yes † no †:

.....

VCT result:

Other lab results:

.....

Follow-up referrals:

.....

Family planning:

Family planning discussed: yes † no †, why.....

Family planning prescribed: yes † no †, why.....

Which method is prescribed:

Important follow-up information (with date)

.....

DOES THE PATIENT HAVE ANY QUESTION?

.....

Appendix D. Consent forms in English and Chichewa

.....has explained to me the nature of the research and has given me my own copy of the volunteer information sheet, which I have read (or has been read out to me).

I consent for myself to take part on the basis that it has been explained to me, and I understand, that:

1. My participation will mean that the information I provide and the information resulting from tests done during this clinic will be documented and used for research.
2. My participation is voluntary and that I am free to withdraw at any time without giving any reason and without detriment to myself. Refusal to participate or withdrawal will not affect any type of healthcare which I may be in need of.
3. The information I provide will be kept confidential from everyone except members of the clinical mental health team and the VCT counsellor. The answers will be used to see if I may need extra care. The information will also be used for the purpose of research.
4. The information resulting from tests requested at this clinic or done as part of the VCT will be kept confidential from everyone except members of the clinical mental health team and the VCT counsellor. The information will also be used for the purpose of research.
5. In this clinic, certain treatment and counselling can be provided. Sometimes, I might be advised to seek treatment or counselling at another department.

Signed(or thumbprint).....Date.....

NAME (BLOCK LETTERS).....

RELATION WITH THE PATIENT (if signed by a guardian)

I confirm that I have fully explained the purpose and nature of the investigation and the risks involved

Signed.....Date.....

NAME (BLOCK LETTERS).....

Ine, andifotokozera zonse za kafukufukuyu ndipo andipatsa kope yonena tsatane tsatane wake yoperekedwa kwa anthu wodzipereka omwe akufuna kutenga nawo mbali yomwe ndawerenga (kapena andiwerengera kuti ndimve) ndipo ndaimvetsa

Pakuti andifotokozera ndipo ndamvetsa, ine ndalola kwa ine mwini kutenga nawo mbali mu kafukufukuyu, ndipo ndamvetsa kuti:

1. kutenga nawo mbali kwanga kukutanthauza kuti zimene nditi ndinene, komanso zotsatira za magazi zomwe zituluke atandiyeza, zidzalembedwa ndi kugwiritsidwa ntchito mu kafukufuku.
2. kutenga nawo mbali kwanga ndi chisankho changa, sanandikakamize, ndipo ndiri ndi ufulu wozisiya nthawi ina iri yonse popanda kupereka chifukwa ndipo kudzakhala mokomera ine mwini. Kukana kutenga nawo mbali mu kafukufukuyu, kapena kusiyira panjira sikudzakhudza chithandizo chiri chonse cha chipatala chomwe ndingafunikire kwa ine.
3. zomwe ndinene zidzakhala za chinsisi kwa onse kupatula anthu omwe akugwira ntchito za misala a ku chipatala ndi aphungu woyeza magazi (VCT). Mayankho ake adzagwiritsidwa ntchito kuwona ngati ndingafunike chithandizo chowonjezeka. Kupatula izi, zonena ndi mayankho zidzagwiritsidwanso ntchito ndi cholinga cha kafukufuku.
4. zotsatira za zoyezayeza zomwe atayezedwe mu kiliniki ino kapena zochitika ngati mbali yoyeza magazi kamba ka HIV, zonse zidasungidwa mwa chinsisi kwa onse kupatula omwe akugwira ntchito za misala a ku chipatala ndi aphungu woyeza magazi (VCT). Zonena ndi mayankho zidzagwiritsidwanso ntchito ndi cholinga cha kafukufuku.
5. mu kiliniki ino, chithandizo china ndi upungu zikhoza kuperekedwa. Nthawi zina, ndikhoza kuwuzidwa kuti ndikalandire chithandizo kapena upungu ku mbali in aya chipatala chino.

Ndikusayina (kapena kusindika chala).....Lero pa (Date).....

DZINA (ZILEMBO ZAZIKULU).....

UBALE NDI WODWALA (ngati wasaina pamwambapa ali guardian)

Ndikutsimikiza kuti ndafotokoza momveka bwino cholinga cha kafukufuku ndi zoyezayeza zake ndi zovuta zake.

Signed..... Date:.....

DZINA (ZILEMBO ZAZIKULU).....

Appendix E. Information sheet English and Chichewa

Information sheet

Here at the out-patient-department in Thyolo District Hospital we are trying to improve the care we are giving to our patients. Some people attending this clinic may have special needs, which we would like to address. One important issue is that some people may need certain medication of which they are not aware, like medication for HIV.

To find out how to improve our out-patient-department at this clinic, it is important to collect information. Therefore, the team of health workers from this clinic is doing a research study. The research team wants to investigate if the people who are attending this clinic are in need of extra care. Besides the need of extra care, the team is also interested to find out if people make use of the VCT and HIV/AIDS services in the district and if they run certain risks to attract HIV. With the collected information the research team may be able to make changes in the health services here and elsewhere.

During your visit at the clinic you may notice some changes. Besides the regular questions and prescription for drugs the health worker will ask questions about your health and personal situation, which will be documented in a patient record. The health worker may also copy some information from your health passport. You may also be offered other hospital services, like VCT for HIV, or laboratory tests. If you would like to go for VCT, you will be sent to a special counsellor at the OPD.

No one will overhear the interviews and the information and test results will be kept confidential from everyone except members of the clinical mental health team and the VCT counsellor. If you don't want to answer a certain question, you do not have to. If you don't want a test to be done, you are free to refuse, at any time. The answers and test results will be used to see if you are in need of extra care. With your permission we will also use the information for the purpose of the research.

In this clinic, some treatment and counselling can be provided. Sometimes, you might be advised to seek the right treatment at another department. You may decline to participate in the research at any time. This will not affect any type of healthcare for you.

Thank you for your cooperation.

Shiti ya Tsatanetsatane wa kafukufuku

Kuno kolembetsera pa chipatala cha Thyolo, tikuyesetsa kukweza chithandizo chomwe timapereka kwa odwala athu. Ena mwa odwala amene timawawona amafunika zowonjezereka kapena zapadera, zomwe ife tikufunafuna kukwaniritsa. Chinthu china chofunika ndi chakuti anthu ena amakhala asakudziwa kuti angafunike mankhwala anji, mwa chitsanzo matenda a HIV.

Pofuna kukweza ntchito za kolembetsera kuno komanso kiliniki ino, ndi zofunika kwambiri kutolera tsatanetsatane wa zomwe zingafunike. Choncho, ogwira ntchito pa chipatala chino akupanga kafukufuku kuti apeze zofunikazo. Anthu ochita kafukufuku ameneyu akufufuza kuti adziwe ngati anthu amene amabwera ku kiliniki ino angafunike chithandizo cha padera pamwamba pa zomwe akulandira kale. Kuwonjezera apo, akafukufukuwa akufunanso kudziwa ngati anthu akugwiritsa ntchito malo oyezetsera magazi ndi malo olandirirako chisamaliro cha matenda a HIV-EDZI mu boma lino, komanso kuwona ngati kulandira chithandizo chimenechi kukuwonjezera kufala kwa HIV mu njira ina yake ku malo amenewa. Kutengera pa zotsatira za kafukufuku ameneyu, ogwira ntchito za chipatala adzatha kupanga masinthidwe oyenera pa ntchito za umoyo kuno ndi kwina kuli konse.

Mwawona kusintha kwina kwake mu kiliniki ino. Pambali pa mafunso ndi chithandizo cha mankhwala chomwe mumalandira nthawi zonse, ogwira ntchito pa chipatala pano adzafunsa mafunso owonjezereka a za umoyo wanu komanso zina za mmene mumakhalira, zonsezi zilembedwa mu mafailo anu wosungidwa ku chipatala kuno. Pakafunikira, wogwira ntchito za chipatala adzalembanso mu buku lanu la ku chipatala. Adzakuyezani ngati patafunika zinthu monga ngati magazi kudziwa ngati muli ndi HIV, kapena zoyeza zina za ku labotare. Ngati muli woti mukufunika kuyeza magazi kudziwa ngati muli ndi HIV, akutumizani kwa phungu wapadera konkuno kolembetsera.

Palibe amene adzamve zokambirana zapakati pa inu ndi ogwira ntchito ku chipatala chino, kapena kudziwa za zoyezetsa zanu ndi zotsatira zake, zonsezi zidzakhala ndi kusungidwa mwa chinsisi. Okhawa ogwira ntchito pa chipatala pano ndi phungu woyeza magazi ndi womwe adzadziwe basi, nawonso adzasunga chinsisi. Ngati mukuwona kuti simukwanitsa kuyankha funso lina lake, mukhoza kulisiya. Simuli kukakamizidwa kuyankha chiri chonse. Ngati simukufuna kuti akuyezeni china chake, muli ndi ufulu wokana, nthawi ina iriyonse. Koma dziwani kuti zoyeza yezazi zidzathandiza wogwira ntchito ku chipatala kuwona ngati mukufunika chithandizo china chapadera chomwe sichikadadziwika popanda kuyeza magazi. Ndi chilolezo chanu, tidzagwiritsa ntchito zomwe mwatifokozera ndi zotsatira za zoyezetsa zanu mu zolinga za kafukufuku.

Mu kiliniki ino, mukhoza kulandira mankhwala ndi uphungu. Nthawi zina, adzakusonyezani malo woyenera kulandira chithandizo malinga ndi vuto lanu mu departiment yina mu chipatala momwe muno. Mukhoza kutuluka mu kafukufuku uno nthawi ina iriyonse yomwe mufune kutero. Mutatero, chosankha chanu sichidzakhudza chithandizo chomwe mungalandire pa umoyo wanu.

Zikomo chifukwa chotenga nawo mbali.