BARRIERS TO UTILIZATION OF DECENTRALIZED MENTAL HEALTH SERVICES IN RWANDA: CENTRAL LEVEL SERVICE USERS' PERSPECTIVES

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DECLARATION AND AUTHORITY TO SUBMIT THE DISSERTATION

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Title: **Barriers to utilization of decentralized mental health services in Rwanda: Central level service users' perspectives**

a. Declaration by the Student

I do hereby declare that this dissertation submitted in partial fulfillment of the requirements for the degree of Master of Medicine in Psychiatry at the College of Medicine and Health Sciences, is my original work and has not previously been submitted elsewhere. Also, I do declare that a complete list of references is provided indicating all the sources of information quoted or cited.

Date and Signature of the Student

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b. Authority to submit the dissertation

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In my capacity as a Supervisor, I do hereby authorize the student to submit his dissertation

Signature of the Supervisor

……………………………………………………………………………………………

Signature of the Co-supervisor

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DEDICATION

To my wife Blandine UMUTONI

To my beloved children: Audric OGERA, Audrie AMA, and Audran SINGIZWA

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ABSTRACT

Background

While Ministry of Health in Rwanda has done its best to decentralize and integrate mental health services into the national Health care system that is organized along the principles of primary health care, there is an observation that stable patients who could be followed at the decentralized level of mental health care for medication renewals, continue to seek care at the central level mental health settings. This creates a potential burden for both the health care providers (in terms of patient volume) and patients (in terms of travel expenses). No study has been done yet in Rwanda to identify barriers to utilization of decentralized mental health services.

Objective

This study aims at identifying barriers to utilization of decentralized mental health services in Rwanda from the central level service users' perspectives.

Methods

This study was conceived as a descriptive cross-sectional study using qualitative method (semi-structured interview) for data collection. 50 participants from 2 study sites were targeted. Descriptive analysis of socio-demographic data was done in the form of frequencies using SPSS version 21. Charts were generated using Microsoft excel 2007, while the thematic analysis was used to generate meaning and structure to the data collected.

Results

We studied 50 patients predominantly from the city of Kigali (58%) females (56%), financially independent (54%) and with no formal level of education (18%) or a lower level of education (Primary school level 40%, uncompleted secondary school 20%). They all had health insurance.

Many factors were found to act as barriers to utilization of decentralized mental health services and are classified as "patient-related" and "provider-related". Among the patient-related ones, barriers were found to be in the dimensions of "ability to reach the health care"

and the “ability to engage in health care”, while on the provider-related side those dimensions were the “approachability” and “appropriateness”.

Conclusion

Barriers to the use of decentralized mental health services were identified and are similar to those in other parts of the world. Mitigation of these barriers will require engagement by different stakeholders throughout the health delivery system to optimize mental health services utilization, improve patient adherence, and support provider resilience given the significant burden of disease and limited mental health human resources.

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LIST OF ABBREVIATIONS AND ACRONYMS

CHUK: University teaching hospital of Kigali

DALY: Disability-adjusted life years

IRB: Institutional Review Board

HIV/AIDS: Human immunodeficiency virus infection and acquired immune deficiency syndrome

HNP: Neuro-psychiatric hospital

OEF: Operation enduring freedom

OIF: Operation Iraqi freedom

OPD: Outpatient department

SPSS: Statistical Package for Social Science

WHO: World health organization

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CHAPTER 1: INTRODUCTION

1.1 Background information

The burden of mental health disorders is one of the most serious health challenges in the world [1]. Up to 10% of the world's adult population (about 450 million people) suffer from mental and behavioural disorders. One out of four people will develop one or more of these disorders during their lifetime [2]. Mental and substance use disorders were the leading global cause of all non-fatal burden of disease in 2010 and accounted for 7.4% of the total burden of the world's health problems as measured in disability-adjusted life years (DALYs); they are estimated to increase to 15% by 2020. Overall, mental and substance use disorders were the fifth leading disorder category of global DALYs in 2010. These disorders were responsible for more of the global burden than HIV/AIDS, tuberculosis, diabetes or transport injuries [3]. In addition, five of the 10 leading causes of disability and premature death worldwide are psychiatric conditions [4].

Despite the large contribution of mental disorders to the global burden of disease, mental health is still a neglected component of health care in most parts of the world, particularly in most low- and middle-income countries where progress in mental health service development has been described as slow [5]. These barriers include insufficient funding for mental health services, mental health resources centralized in or near big cities and in large institutions, resistance to the decentralization of mental health services, challenges in integrating mental health care in primary health care settings, and the general shortage of public health perspectives in mental health leadership[6].

In addition, WHO points to a large shortage and limited types of health workers trained and supervised in mental health, inequities in their distribution, and inefficiencies in their use, especially in low- and middle-income countries [7, 8]. As a consequence, the gap between the need for treatment and its provision is still large, although effective treatments are increasingly available and economically advantaged [9, 10].

Between 76% and 85% of people with severe mental disorders receive no treatment for their disorder in low- and middle-income countries [11]. Recently, a study assessing the accessibility of mental health services for people with schizophrenic disorders in 50 low- and

middle-income countries shows that two thirds of the people affected with schizophrenic disorders, the most important of the severe mental disorders, are not receiving treatment, and that the magnitude of the treatment gap is 89% in lower-income countries [12].

In its 2001 report, WHO recommended to country members to establish national mental health policies involving communities and to develop mental health legislation. These policies should draw attention to the necessity to provide mental health care near communities, develop human resources in mental health and promote collaboration with other sectors [1].

In Rwanda, mental health problems are the leading cause of disability. In 2010, the top five leading causes of years lived with disability include two mental health disorders: depressive and anxiety disorders. In addition, alcohol use is one of the three leading risk factors accounting for the most disease burden in Rwanda [13].

To respond to the above described mental health related disease burden, Rwanda chose a strategy of decentralization and integration of mental health services into the health care system that is organized along the principles of primary health care. Currently Mental health services are effectively decentralized across the country. Each of the country's district hospitals has its own mental health unit tasked with delivering a comprehensive mental health care package according to the national standards [14]. Within this framework, each mental health unit is supposed to provide inpatient and outpatient mental health care, including analysis, diagnosis, treatment, follow-up, rehabilitative measures, counselling and interaction with families. When more specialized interventions are judged necessary, patients are referred to national mental health referral settings hereto referred as "central level settings".

1.2 Statement of the problem

Rwanda demonstrated a commitment to decentralize and integrate mental health services into the national Health care system. At the health centre level at least one general nurse and one community health worker in each village of the catchment area are trained to ensure an integrated mental health care component in health centres and at community level. District hospitals that constitute the second level of Health care are all equipped with a mental health unit run by a permanent team comprising one or two psychiatric nurses and one psychologist

providing a broad range of mental health services under the supervision of a physician trained in mental health care. At the tertiary level, there are central level mental health referral settings which include the Neuropsychiatric Hospital of Ndera, and the Mental Health Department of the University Teaching Hospital of Kigali (CHUK), an ambulatory facility.

These two central level settings receive patients from district hospitals for more specialized management, and are expected to send them back for continuation of treatment once they are stable. While there is no formal data available, there is an observation that the above mentioned health facilities continue to follow stable patients who could be followed for medication renewals at the district hospitals' mental health departments, here identified as the "decentralized mental health services". This chronic management of subacute cases at the central level creates a potential burden for both the Health care providers (in terms of patient volume) and patients (in terms of travel expenses).

1.3 Research questions

- Why do mental health patients in their continuation or maintenance phase of treatment continue to consult central level settings?
- What are the barriers to successful contra-transfer to decentralized mental health services?
- Are these barriers related to patients themselves, care providers or health facilities?

1.4 Objectives

1.4.1 Main objective

This study aims to identify barriers to utilization of decentralized mental health services in Rwanda from the central level service users' perspectives.

1.4.2 Specific objectives

- To determine the socio-demographic characteristics of the service users
- To identify patient-related barriers
- To identify care provider-related barriers

1.5 Relevance of the study

This study would contribute to optimizing mental health services within the decentralized health care model by identifying potential barriers to successful contra-transfers to decentralized mental health services given that no study has been done yet in Rwanda to identify them. Findings will contribute to improve patient adherence and support provider resilience given the significant burden of disease and limited mental health human resources.

CHAPTER 2: LITERATURE REVIEW

2.1 The concept of utilization of health care services

There is a consideration that health services research and policy continues to be compromised by a lack of clarity of concepts of "access" and "utilization", lack of consensus on sub dimensions of these concepts, and ongoing blurring of access as a concept and its determinants. While some authors consider the notions of utilization of Health care as different, others often employ utilization as a proxy of access [15,29]. Thus these two concepts are interconnected and interchangeable in the available literature which seems not to discuss or analyze them separately. In most cases, the concept of utilization of health care services and related barriers are well understood from the literature on access to Health care.

Access to Health care is central in the performance of health care systems around the world. In fact, the importance of service delivery for people has resulted in measurement of utilization and access having a prominent role in the health policy literature [17,18]. However, access to health care also remains a complex notion as exemplified by the varying interpretations of the concept across authors [19,20].

Etymologically, access is defined as a way of approaching, reaching or entering a place, as the right or opportunity to reach, utilize or visit [21]. Within health care, access is always defined as access to a service, a provider or an institution, thus defined as the opportunity or ease with which consumers or communities are able to utilize appropriate services in proportion to their needs [20,22].

Access has been conceptualised in numerous ways. While it is often used to describe factors or characteristics influencing the initial contact or utilization of services, opinions differ regarding aspects included within access and whether the emphasis should be put more on describing characteristics of the providers or the actual process of care [23]. Some authors view access more as an attribute of health services, noting the fact that services can be accessed or utilised by those requiring care [24]. While most authors do recognise the influence of characteristics of users as well as characteristics of providers on access, many put more emphasis on characteristics of health care resources that influence the utilization of services, acting as a mediating factor between the ability to produce services and their consumption [25]. Penchansky is amongst those that more explicitly conceptualised access in

terms of the fit between characteristics of providers and health services, and characteristics and expectations of clients [18]. Here, access may be conceived as the interface between potential users and health care resources, and would be influenced by characteristics of those who supply as well as those who utilise the services.

Access has often been defined as the utilization of health care, qualified by need for care [15]. It has also been defined as describing the costs incurred in receiving care, as the maximum attainable consumption, or as foregone utility [27].

Mooney sees access as a function of both supply and demand [28]. In this view, access to health care is a product of supply factors, such as the location, availability, cost and appropriateness of services, as well as demand factors, such as the burden of disease and knowledge, attitudes and skills and self-care practices [29-21].

This is in line with the notions of predisposing factors to utilization on one side, and enabling and health system factors on the other [17]. Predisposing factors include an individual's perception of an illness, as well as population-specific cultural, social, and epidemiological factors. Enabling factors include the means available to individuals for using health services. Health system factors comprise resources, structures, institutions, procedures, and regulations through which health services are delivered [17].

Frenk reserves the term access to denote the ability of the population to seek and obtain care. It thus refers to a characteristic of the population of potential or real users of services and is related to the concept of utilization power and resistance [23]. A theoretically attractive way to see access is to see it as the degree of adjustment between the characteristics of the population and those of the health care resources seeing access as a functional relationship between the population and medical facilities and resources, and which reflects the differential existence either of obstacles, impediments and difficulties or of factors that are facilitators for the beneficiaries of health care [23].

Although a conceptual vision of fit suggests that both resource and population characteristics can be modified to ensure continuing levels of access, only resources can be modified in the short-term [23]. In general, obstacles such as price of services, transportation time, and waiting time are more responsive to specific health policies than the broader social and

economic characteristics of the population, such as income, transportation resources, or free time [23].

Andersen, conceptualising utilization as realised access, has viewed utilization (type, site, purpose, time interval) as determined by population characteristics (predisposing, enabling, need) and health systems' characteristics (policy, resources, organization) [29,30]. In a similar manner, highlighting the relation between the concepts of utilization and access, Donabedian highlighted the central role of characteristics of health resources with regard to facilitating or impeding the use of services by potential users [25]. Table 1 summarizes definitions and dimensions found in the literature.

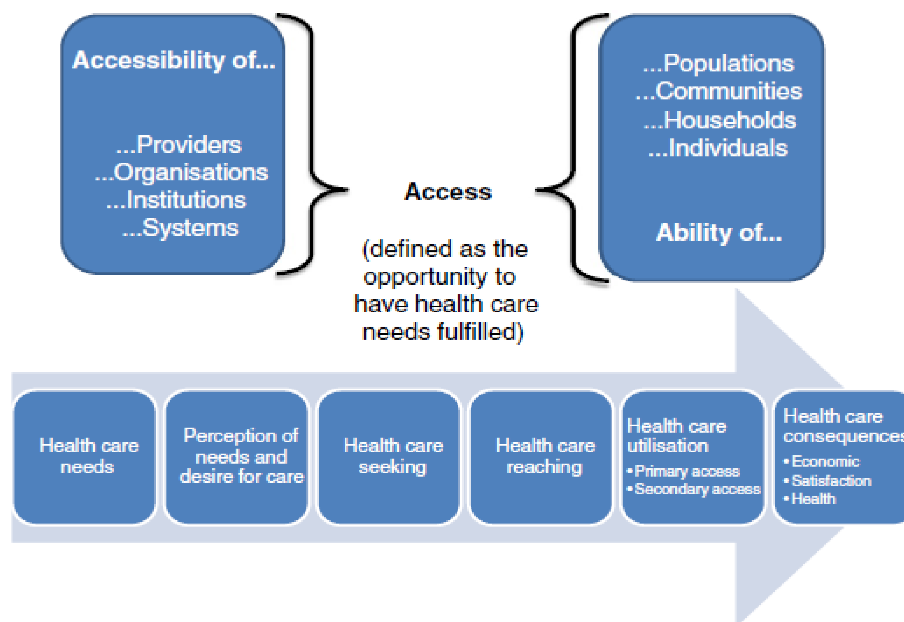
The disaggregation of access into broad dimensions, such as geographical, economical or social aspects, permits more operational measures through the study of specific determinants of access to health care. However, measuring access is a complex task when trying to include dimensions other than merely availability of services. Access is often perceived as being predominantly an attribute of services and is determined by factors such as the availability, price and quality of health resources, goods and services. This perception could stem from the fact that it is factors amenable to policies and organisational aspects of care that should be targeted to improve access. For the time being, utilization, frequently used as a proxy for access (realised access is easier to measure than potential access) is influenced by the supply as well as the demand for services, including individual attributes such as preferences, tastes and information [28, 32, 33]. Others have added financial and physical barriers to utilization as determinants of access to health care [24].

But access clearly goes further than an availability of health services. A more comprehensive view on access should consider factors pertaining to the structural features of the health care system (e.g. availability), features of individuals (consisting of predisposing and enabling factors) and process factors (which describe the ways in which access is realised) [20,34,35], and pertains to the dimensions of availability, accessibility, accommodation, affordability and acceptability [18]. Others have proposed dimensions related to factors such as geographic access, resource availability, cultural acceptability, financial affordability, and quality of care to health system coverage [17, 36].

One of the most comprehensive concepts of that kind sees access as resulting from the interface between the characteristics of persons, households, social and physical

environments and the characteristics of health systems, organisations and providers [18]. Here, factors to consider pertain to supply-side features of health systems and organizations, to demand-side features of populations, and to process factors describing the ways in which access is realised [20,37]. In other words, access is therefore viewed as the possibility to identify Health care needs, to seek Health care services, to reach the Health care resources, to obtain or utilize health care services, and to actually be offered services appropriate to the needs for care as illustrated in figure 1.

Figure 1: Illustration of the concept of utilization of health care. Reprinted from Levesque, J. F., Harris, M. F., & Russell, G. (2013). Patient-centred access to health care: conceptualising access at the interface of health systems and populations. *International journal for equity in health*, *12*(1), 18.



This framework places the notion of utilization as realised access [29] while access allows people to do the steps that permit them to enter in contact and attain health care. These different steps in the series that a patient will experience symbolize important transitions where barriers to utilization of health care can be made known.

Table 1: Definitions and dimensions of access to or utilization of health care. Adapted from Levesque, J. F., Harris, M. F., & Russell, G. (2013). Patient-centred access to health care: conceptualising access at the interface of health systems and populations. *International journal for equity in health*, *12*(1), 18. (See on the following page)

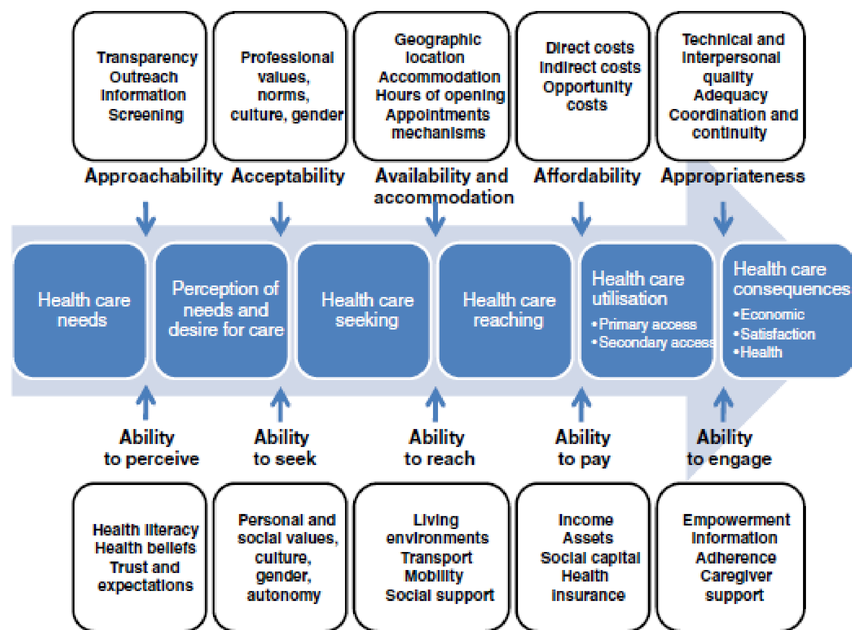
Author	Definition	Dimensions
Bashshur et al., 1971	Accessibility as the functional relationship between the medical facilities and resources and population, and which reflects the differential existence either of obstacles, impediments and difficulties, or of factors that are facilitators for the beneficiaries of health care	
Donabedian, 1973	Accessibility embracing the concept of degree of adjustment between populations and resources	
Salkever, 1976	Accessibility merging attributes of the population and attributes of resources	Financial accessibility; Physical accessibility
Aday & Andersen, 1974	Access as entry into the health care system	Predisposing factors Enabling factors; Need for health care
Penchansky & Thomas, 1981		Affordability & Accessibility; Accommodation; Availability; Acceptability
Dutton, 1986	Utilization seen as the product of patients features plus provider and system attributes	Financial; Time; Organizational factors
Frenk, 1992	Access as the capability of the population to seek and attain care. Accessibility is the degree of adjustment between the characteristics of health care resources and those of the population within the process of seeking and attaining care	
Margolis et al., 1995	The suitable use of personal health services to achieve the highest attainable outcomes.	Financial; Personal; Structural
Haddad & Mohindra, 2002	The opportunity to use or consume health goods and services	Availability; Affordability; Acceptability; Adequacy
Shengelia et al., 2003	Coverage: likelihood of getting a necessary health intervention, conditional on health care need	Physical access; Resource availability
	Utilization: quantity of health care services and methods used	Cultural acceptability; Financial affordability
Peters et al. 2008	Access seen as comprising real use of services. A clear focus is given to consider both services and users features in evaluation of access. The notion of fit between services and users is identified.	Quality; Geographic accessibility; Availability; Financial accessibility; Acceptability of services
Levesque et al., 2013		Approachability; Acceptability; Availability and accommodation; Affordability; Appropriateness
		Ability to perceive; Ability to seek; ability to reach; Ability to pay; Ability to engage

2.2 Dimensions of access or utililization capturing supply-side or provider-side and demand-side or patient-side determinants

Research on access to health care can be divided in two main threads: on one hand there are health-seeking behaviour studies, which focus on patient/caregiver decision-making and treatment-seeking pathways with a focus on individual behaviour, taking into account mainly individual knowledge, perceptions and empowerment. On the other hand, another important body of research is more concerned with the health system aspects of access to care. This research thread strongly builds on Penchansky and Thomas' access framework which investigated access to health care in terms of availability, affordability, appropriateness, accommodation, and acceptability. These concepts have been adapted in various ways to accommodate different contexts and their commonality is a strong focus on the health system perspective shaping access to care.

In 2013, Levesque elegantly reconceptualised access by bringing the above mentioned threads together. He proposed to use the concepts of 1) approachability; 2) acceptability; 3) availability and accommodation; 4) affordability; 5) appropriateness on the provider side, and developed five corresponding abilities on the user side including: 1) ability to perceive; 2) ability to seek; 3) ability to reach; 4) ability to pay; and 5) ability to engage as illustrated in the following figure.

Figure 2: Illustration of determinants of utilization of health care, capturing the provider and patient sides. Reprinted from Levesque, J. F., Harris, M. F., & Russell, G. (2013). Patient-centred access to health care: conceptualising access at the interface of health systems and populations. *International journal for equity in health*, *12*(1), 18.



2.2.1 Approachability and ability to perceive need for care

Approachability refers to the fact that people in need of health care can actually identify that some form of services exists, can be reached, and have a positive impact on the health of the individual. Services can make themselves more or less recognized among various social or geographical transparency, information regarding available treatments and services and outreach activities could help to make the services more or less approachable. Along with this concept of approachability of services, the concept of **ability to perceive need for care** among populations is essential and determined by such factors such as health literacy, knowledge about health and beliefs related to health and sickness.

2.2.2 Acceptability and ability to seek health care

Acceptability refers to cultural and social factors determining the possibility for people to admit the aspects of the service (e.g. the sex or social group of providers, the beliefs associated to systems of medicine) and the judged appropriateness for the persons to seek care. As an example, a society unwelcoming informal physical contact between unmarried men and women would decrease acceptability of care and acceptability to seek care for women if health service providers are mostly men. It may be that some services are unfair in the way they are organized, making them unacceptable to some sections of the community that they are projected to serve [22]. **Ability to seek health care** refers to the concepts of personal autonomy and capacity to decide to seek care, knowledge about health care options and individual rights that would determine expressing the intent to obtain health care. A good example would be female discrimination concerning the initiation of care or mistreatment and neglect disappointing minorities to seek care. This relates to the challenge of guaranteeing that care meets the needs of different cultural, socioeconomically disadvantaged and vulnerable populations. Because different groups may judge appropriateness and quality differently, this is an important challenge [38].

2.2.3 Availability, accommodation and ability to reach health care

Availability and accommodation relates to the fact that health services (either the physical space or those working in health care roles) can be reached both physically and in a timely manner. Availability represents the physical existence of health resources with sufficient capacity to produce services (existence of productive facilities) [23]. It results from features of facilities (e.g. density, concentration, distribution, building accessibility), of urban contexts (e.g. decentralisation, urban spread, and transportation system) and of individuals (e.g. duration and flexibility of working hours). It also refers to features of providers (e.g. presence of the health professional, qualification) and means of provision of services (e.g. contact procedure and possibility of virtual consultations). Access is limited if available resources are unequally distributed around a country, or across levels of care (with specialty care developed at the expense of primary care) [22]. **Ability to reach health care** denotes the notion of personal mobility and availability of transportation, occupational flexibility, and knowledge about health services that would allow one person to physically reach service providers.

Limited mobility of the aged and handicapped, or the incapability of casual workers to be absent from work to consult medical providers would be examples of these.

2.2.4 Affordability and ability to pay for Health care

Affordability refers to the economic capability for people to spend resources and time to use suitable services. It results from direct prices of services and related charges in addition to opportunity costs related to loss of income. Additionally it can vary by type of services and is related the capacity to generate the resources to pay for care (e.g. mode of payment, mobilisation of resources). Economic studies of utilization models demand using variables such as price of care, travel time and the opportunity costs linked to it, patient's income, perceived quality of care, provider behaviour, etc. These models give practical information about elasticity of demand for different types of health services [17]. **Ability to pay for health care** is a broadly used notion within the health services and health economics literature [24, 39]. It explains the capacity to generate economic resources - through income, savings, borrowing or loans - to pay for health care services without ruinous spending of resources required for basic necessities (e.g. sale of home). Poverty, social isolation, or indebtedness would be examples of factors limiting the capacity of people to pay for needed care.

2.2.5 Appropriateness and ability to engage in health care

Appropriateness refers to the fit between services and clients need, its timeliness, the amount of care spent in assessing health problems and determining the correct treatment and the technical and interpersonal quality of the services provided [23,40]. **The ability to engage in health care** would relate to the partaking and involvement of the client in decision-making and treatment decisions, which is in turn mainly determined by capacity and motivation to take part in care and commit to its completion. This dimension is strongly related to the capacity to communicate as well as notions of health literacy, self-efficacy and self management in addition to the importance of receiving care that is really appropriate for the person, given its resources and skills. Access to optimal care eventually requires the person to be fully engaged in care and this is seen as interacting with the nature of the service essentially offered and provided.

2.3 Barriers to mental health services

As earlier mentioned in the background, barriers to mental health services globally include the insufficient funding for mental health services, mental health resources centralized in or near big cities and in large institutions, resistance to the decentralization of mental health services, challenges in integrating mental health care in primary health care settings, and the general shortage of public health perspectives in mental health leadership [6].

WHO also points to a large shortage and limited types of health workers trained and supervised in mental health, inequities in their distribution, and inefficiencies in their use, especially in low- and middle-income countries [7, 8]. Although effective treatments are increasingly available and economically advantaged [9, 10], these barriers remain responsible of the gap between the need for treatment and its provision.

In low- and middle-income countries between 76% and 85% of people with severe mental disorders receive no treatment for their disorder [11]. A study assessing the accessibility of mental health services for people with schizophrenic disorders in 50 low- and middle-income countries shows that two thirds of the people affected with schizophrenic disorders, the most important of the severe mental disorders, are not receiving treatment, and that the magnitude of the treatment gap is 89% in lower-income countries [12].

In Rwanda, mental health services are now effectively decentralized across the country. All district hospitals has its own mental health unit which delivers a comprehensive mental health care package according to the national standards defining the basic package of health services to be provided at various levels of the general health care system [41]. While there is no formal data available about the barriers to utilisation of those decentralized mental health services, there is an observation that stable patients who could be followed for medication renewals at the district hospitals' mental health departments, continue to seek treatment at the central level mental health settings.

CHAPTER 3: METHODS

3.1 Study description

This is research study aims at identifying the barriers to utilization of decentralized mental health services in Rwanda. A mixed method approach was used for data collection where a questionnaire based interview was administered to the users of the central level mental health settings who met the inclusion criteria, and accepted to sign the consent form.

Given that a review of literature did not identify any published questionnaire which addresses this study's objectives, a self-developed questionnaire based on available literature on the barriers to mental health services utilization was used.

3.2 Study design

This study was designed as a qualitative, descriptive and cross-sectional study using a mixed method for data collection to identify the barriers to the utilization of decentralized mental health services in Rwanda from the perspective of central level settings users. Given that they are different frameworks about barriers to utilization of health care, the one developed by Penchansky and Thomas in 1981 and reconceptualised by Levesque in 2013 as summarized in figure 2, will be used for our study as it is more comprehensive.

3.3 Study site

The study was conducted at the University teaching hospital of Kigali (CHUK)/Mental health department and the Neuropsychiatric hospital of Ndera.

CHUK was established in 1928 as a health center and later expanded services to become a hospital in 1965. CHUK's mission is to provide high quality health care to the population in line with international standards, strengthen capacities of health professionals through quality education and continuous and promoting outstanding research and advocacy practices through evidence based studies and lastly providing technical support to the health system by providing supervision and mentorship programs to the district hospitals.

The Department of Mental Health was established in 2012 by integrating the former Psychosocial Consultation Center. It is an ambulatory service and doesn't provide inpatient psychiatric care. In terms of service provision, the department receives annually between 800 and 900 new cases with psychiatric and neurological problems. The main services that this department delivers are OPD consultations, liaisons consultations, electro-encephalography, psychological services service and pharmacy related services.

The neuropsychiatric hospital of Ndera was founded by the Congregation of the Brothers of Charity, which has owned it since July 4, 1968. Before the independence (1962), Rwanda and Burundi formed a single administrative entity (Rwanda-Urundi) and mentally-ill patients were sent to Bujumbura (Burundi) where a psychiatric center known as Prince Regent Charles Hospital was operational since 1951. After Rwanda independence, the authorities sought improved services for the neuro-psychiatric need, and contacted the Brothers of Charity to assist in this issue. In 1968 a convention was signed and in the same year the construction activities started. The first patient was hospitalized in 1972 and the hospital cared for both women and men. Currently, it offers different services such as OPD consultations, admissions, occupational therapy, physiotherapy, clinical psychology and neurology.

3.4 Study population

This study comprised adult patients who were visiting Ndera Neuropsychiatric hospital and the University teaching hospital of Kigali (CHUK)/ mental health department for routine mental health outpatients follow up sessions from the 1st to 30th of April 2019.

3.5 Selection of the study population

3.5.1 Inclusion criteria

The inclusion criteria will be made of and limited to the following elements:

- Age of 18 and above
- Ability to make a decision
- Continuation or maintenance phase of treatment

3.5.1 Exclusion criteria

The exclusion criteria are the following:

- Age less than 18
- Impaired decisional capacity
- Acute phase of treatment

3.6 Sampling method

A purposive sampling was used for this study until the targeted sample size was reached.

3.7 Procedure at enrolment

Enrolled participants were selected from patients who consult the Neuro-psychiatric hospital of Ndera and the mental health department of CHUK. They were only approached after receiving the services they requested for that visit. Those who met the inclusion criteria and agreed to participate in the study signed the informed consent. No financial compensation for time was offered as part of this study.

3.8 Sample size

Given that qualitative research theories suggest that qualitative sample size may best be determined by the time allotted, resources available, and study objectives [42], sample size calculation using a formula was not indicated for this study.

Thus, based on the guidelines recommendation such as that of ethnography or grounded theory where approximately 30 – 50 participants are suggested [43]; and considering phenomenological studies where the number of participants recommended ranges between 5 to 25 [43,44], the sample size for this study equalled to the maximum recommended number of participants which is 50. Participants were equally selected from the two study sites, meaning 25 participants CHUK and 25 from Ndera Neuropsychiatric hospital.

3.9 Data management

Data was collected using a semi-structured questionnaire based interview, manually entered into a protected excel database.

3.10 Data analysis

Descriptive analysis of socio-demographic data was done in the form of frequencies using SPSS version 21. Charts were generated using MS excel 2007, while the thematic analysis was used to generate meaning and structure to the data collected.

3.11 Ethical considerations

3.11.1 Confidentiality

In the process of data collection and analysis, participants' names were not used. Instead only study numbers were used. The participants' information was confidentially kept and used for research purpose only.

3.11.2 Informed consent

Participants were individually given a consent form by the data enumerators after clearly explaining to them the nature of the research project. The content of the consent was read aloud to each participant by the data enumerator in the language that the person preferred between Kinyarwanda and English. After satisfactory explanations by the data enumerator, those who were willing to participate in the study affixed their signature or fingerprint on the consent form.

3.11.3 Ethical approval

Ethical approval referenced as n°147/CMHS IRB/2019 was requested and obtained from the University of Rwanda/College of Medicine Health Sciences Institutional Review Board (IRB) before conducting the study.

3.12 Distribution of responsibilities

The principal investigator had responsibility to conduct and coordinate all the steps of the study under the supervision of the thesis supervisors. Data collection was done by data enumerators while the analysis was done with help of a statistician.

CHAPTER 4: RESULTS

4.1 Socio-demographic characteristics of the participants

A total of 50 targeted persons consented to participate in our study. 50% of the participants were from CHUK while another 50% were from the Neuro-psychiatric Hospital of Ndera. All the participants (100%) had a health insurance and 58% of them were from the City of Kigali where our two study sites are located while 42% were from other provinces. Among participants who responded, 56 % were female and 44% male. The majority of the respondents were young as 44% are between 18 and 35 years of age. Almost a half of our participants were single (48%).

Concerning the level of education, the majority of our participants had the primary level as the highest level of education (40%), followed by those who were not able to complete the secondary school (20%) and those who did not attend school (18%). Regarding the financial autonomy (54%) were financially independents while 46% were dependents.

Data from our respondents also show that 41 participants (82%) are aware of the existence of the mental health services at the district hospital level while 9 (18%) are not aware. Of those 41 participants none (0%) of them wishes to continue his/her treatment at the district hospital level for one reason or another, while among the 9 who are not aware only 2(22.2%) of them would have gone there if they were re-referred. This makes a total of 2 out 50 respondents or 4 % who manifest the interest in the utilization of decentralized mental health services. 19 out 50 respondents (38%) report having been re-referred to the decentralized mental health services and 79% of them say that they were not satisfied of the service while only 21% appreciated the service given, though they also came back for follow up at the central level settings due to different reasons. The summary is found in table 2, and figures 3, 4 and 5.

Table 2: Socio-demographic characteristics

Variable	Characteristics	Total N	%
	CHUK	25	50.0
	HNP Ndera	25	50.0
	City of Kigali	29	58.0
	Other province	21	42.0
	Yes	50	100.0
	No	0	0.0
	18-25	4	8.0
	26-35	18	36.0
	36-45	9	18.0
	46-55	9	18.0
	56-65	9	18.0
	Above 65	1	2.0
	Female	28	56.0
	Male	22	44.0
	Single	24	48.0
	Married	15	30.0
	Separated	7	14.0
	Widow(er)	4	8.0
	None	9	18.0
	Primary school	20	40.0
	Primary school and above	10	20.0
	Secondary school	5	10.0
	Higher learning and University	6	12.0
	Financially independent	27	54
	Financially dependent	23	46

Figure 3: Awareness and interest in utilization of decentralized mental health services

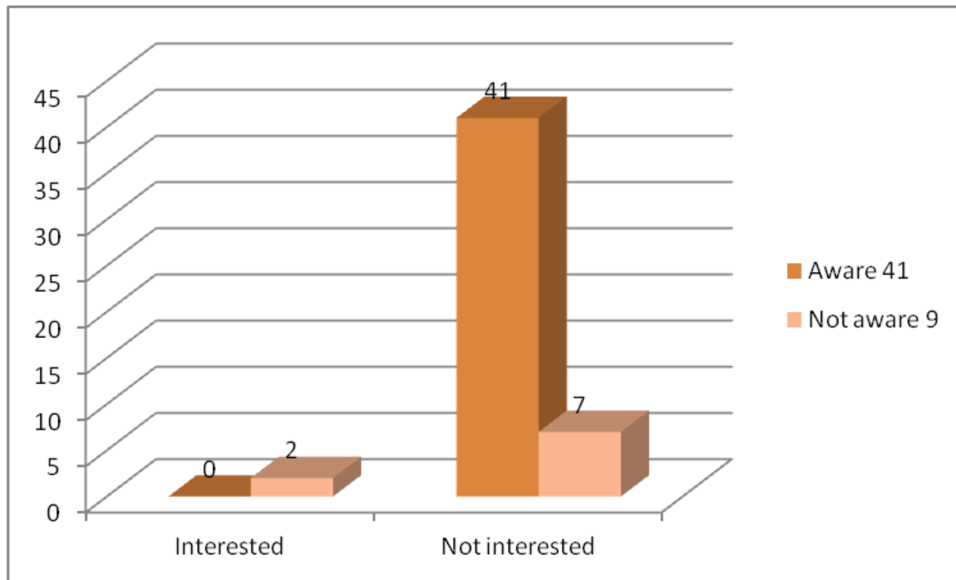


Figure 4: Rate of contra-transfers to decentralized mental health services

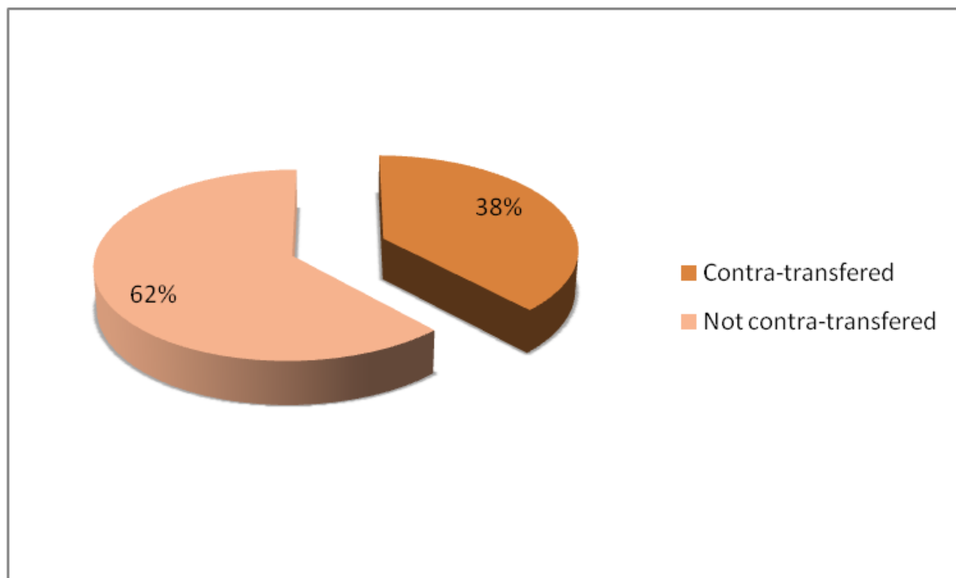
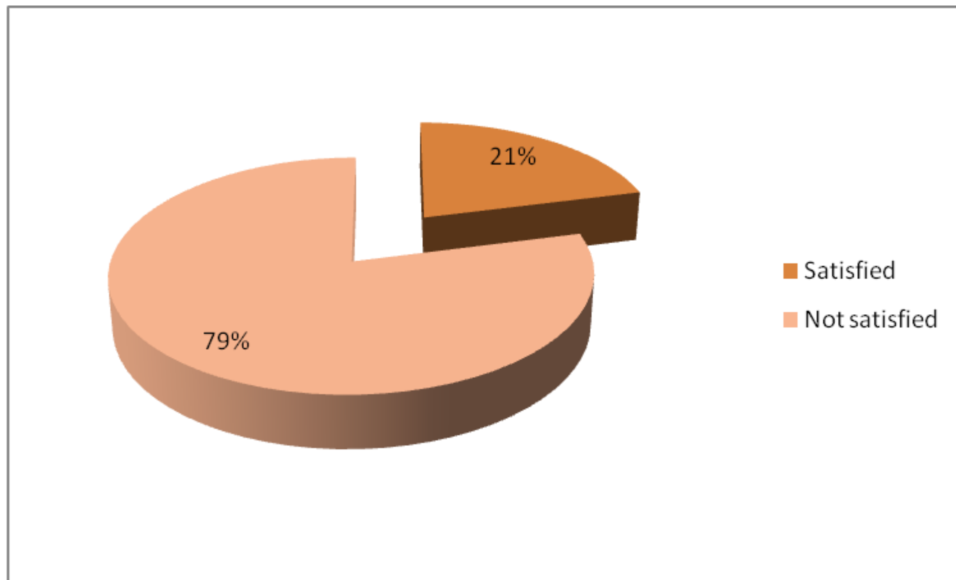


Figure 5: Rate of satisfaction among respondents with previous exposure to decentralized mental health services



4.2 Barriers to utilization of decentralized mental health services

Reference made to Penchansky and Thomas' access framework reconceptualized by Levesque, many factors were found to act as barriers to utilization of decentralized mental health services. They are delineated herein as demand-side related hereto referred as "patient-related" and supply-side related that we consider as "provider-related". Those barriers were highlighted and grouped as follows.

4.2.1 Patient-related or user-related barriers

The patient-related barriers to the utilization of decentralized mental health services are mainly made of two themes: the ability to reach the health care and the ability to engage in the health care.

4.2.1.1 Ability to reach the health care

More than a third (34%) of the respondents said that they have barriers to utilize decentralized mental health services located at district hospitals as it is much easier for them and less expensive and less time consuming in terms of transport fees and time when they seek services at the central level settings. This barrier was identified from respondents from

the City of Kigali where the central level mental health settings are located as well as from those living in other provinces.

4.2.1.2 Ability to engage in health care

Many barriers were also found at the level of ability to engage in decentralized mental health services, mainly due to reasons such as the fear of stigma, negative perception about decentralized mental health services, attachment to the therapeutic relationship, and the belief in the qualification and competencies of Health care providers at the central level settings.

In figures, 18% of the respondents express difficulty to engage in decentralized mental health services as they fear to be stigmatized once they would have gone to seek care in the communities where they are known or where they could easily meet people who know them (District hospitals), while 42 % justify this difficult by having a negative perception vis-à-vis mental health service at the district hospital level. 40% says that they do want to change their Health care provider while 42% believe that Health care provider at the central level are more qualified and competent to manage their conditions.

4.2.2 Provider-related barriers

Provider-related barriers were mainly found under the theme of approachability and appropriateness as detailed bellow.

4.2.2.1 Approachability

Some of the respondents reported that they do not use decentralized mental health services as result of lack of information about the available mental health services and the approach of their health care providers. 18% of the respondents did not know about the existence of decentralized mental health services, 64% did not use them because they were always given a follow up appointment at central level facility while 62 % of the respondents report that they were never given a contra-transfer note to continue the follow up at the district hospital level.

4.2.2.2 Appropriateness

Out of 19 patients who were contra-transferred to continue the follow-up at the district hospital level, 15 (79%) of them consider the decentralized mental health service not appropriate for them especially due to lack of continuity of care as a result of frequent and prolonged stock-out in mental health medicines, or simply because the medications they take are never available at the decentralized level of mental health care.

Table 3: Summary on identified barriers

Barrier source	Barrier dimension	Barrier as formulated by interviewees
Patient	Ability to reach the health care	"It is much easier for me in terms of transportation to reach the central level settings rather the decentralized level of health care."
	Ability to engage in health care	"I am afraid of being stigmatized as people from my neighborhood will know that I have got a mental problem." "I am not certain of my confidentiality as some of the mental health professionals at our district hospital know me." "I have a negative perception about the decentralized mental health services." "I do not want to lose the therapeutic relation with my Health care provider at the central level setting." "I believe in the qualifications and competencies of mental health care providers at the central level settings."
Provider	Approachability	"I was not aware of the decentralized mental health services." "I was always given a follow up appointment at the central level setting." "I was never given a contra-transfer note for follow up at the decentralized level of health care."
	Appropriateness	"There are frequent and prolonged stock-out in the medications that I take." "The medicines I take are only available at the Central level of health care."

CHAPTER 5: DISCUSSION

This study describes the barriers to utilization of decentralized mental health services in Rwanda from the perspective of central level services users. The study was conducted in two central level mental health settings respectively known as CHUK (mental health department) and the Neuro-psychiatric hospital of Ndera.

We studied 50 patients predominantly from the city of Kigali (58%) females (56%), financially independent (54%) and with no formal level of education (18%) or a lower level of education (Primary school level 40%, uncompleted secondary school 20%). They all had health insurance. While no correlation analysis of these socio-demographic data were was done to determine how they are associated with the identified barriers, they remain of a high importance for those who in future may wish to study this association using secondary data.

Participants expressed their appreciation and confirmed that this study gave them the opportunity to talk openly about their preferences about mental health services, and provided barriers to utilization of decentralized mental health services. Those barriers were classified as patient-related and provider-related.

Among the patient-related barriers, two major barrier dimensions were identified and those ones were the ability to reach the health care and the ability to engage in health care.
The ability to reach health care relates to the notion of personal mobility and availability of transportation, occupational flexibility, and knowledge about health services that would enable one person to physically reach service providers. In our study, more than a third (34%) of the respondents said that they have difficult to use the decentralized mental health services located in district hospitals as it is much easier for them and less expensive in terms of transport fees when they seek services at the national referral hospital given the geographical location of district hospitals and available means for transportation. While the issue of transportation cost as barrier to mental health services utilization is here studied under the dimension of the "ability to reach the health care" it is also listed under the dimension of financial barrier for those using other Frameworks [45]. It has also been identified as a barrier in other studies, such as the study exploring barriers to accessing mental health treatment among Chinese-speaking international students in Australia [46].

The ability to engage in health care is strongly determined by capacity and motivation to participate in care and commit to its completion. Respondents in our study revealed that some barriers hampered their motivation and commitment in the follow up treatment at the decentralized level of mental health care. As described in the results these barriers included the fear of stigma, negative perception about decentralized mental health services, attachment to the therapeutic relationship, strong belief in the qualification and competencies of health care providers at the central level settings. The fear of stigma was an important reason for not seeking or sustaining treatment due to the fear of what others may think, thereby preventing many from sustaining their treatments in studies conducted in Nigeria [47,48]. The negative perception about mental health services was also found as barrier in a study examining barriers to the mental health care utilization among OEF-OIF veterans [49]. On the other hand, the therapeutic relationship which is the heart of art of medicine [50] was also mentioned by our responds as an important reason that keeps them at the central level mental health settings. Therefore, the fear of losing an already established therapeutic relationship constitutes a barrier to the utilization of structures that are new to the patient (decentralized mental health services in this case), and promote the engagement and adherence to the structures already familiar to the patient (central level settings in this context) as detailed in a study that explored the determinants of medication compliance in schizophrenia [51].

In additional to patient-related barriers let's remind that provider-related barriers were also identified and categorized in two main dimensions, namely the approachability and the appropriateness.

While approachability relates to the fact that people facing health needs can actually identify that some form of services exists, can be reached, and have an impact on the health of the individual, 18% of our respondents reported not to be aware of the existence of decentralized mental health services as the reason why they could not use them. The lack of awareness as barrier to mental health services has been mentioned in other studies. It was mentioned in a review of literature examining the barriers to providing effective mental health services Asian Americans [52]. The same barrier was also found in a qualitative study examining the barriers to mental health services utilization in the Delta Niger region of Nigeria [43].

The appropriateness can be referred to the fit between services and clients need [23,40]. 79% of our respondents who had an exposure to decentralized mental health services, reported that the services they got neither fit their need nor their expectations especially due to lack of continuity of care as a result of frequent and prolonged stock-out in mental health medicines as reported by 73% of them, or simply because the medications they take are never available at the decentralized level of health care as mentioned by 27 %. Those two issues led the above mentioned respondents to restart seeking services at the central level settings, and so constituted a barrier to utilization of decentralized mental health services. The lack of continuity of care has also been found as barrier in another study that examined barriers to family care in psychiatric settings [53].

Limitations of the study

The investigator and the supervisor are aware of the limitations associated with the sampling and sample bias as a result of a purposive sampling, but as a first study exploring barriers to utilization of mental health services in Rwanda, the findings have implications that could influence both subsequent research, practice and policy innovations for care.

CHAPTER 6: CONCLUSION AND RECOMMENDATION

6.1 Conclusions

This study explored the barriers to utilization of decentralized mental health services in Rwanda from data provided by central level settings' mental health service users.

It shows that there are various barriers to utilization of decentralized mental health services, and those barriers are classified as patient-related and provider-related.

The barriers identified are similar to other barriers found in studies conducted in other parts of the world and clarifies why our respondents continue to seek services at the central level of health care.

They need thus to be mitigated by different stakeholders, at different levels so as to optimize mental health services utilization within the decentralized health care model.

This mitigation will contribute to improved patient adherence, and support provider resilience given the significant burden of disease and limited mental health human resources.

6.2 Recommendations

To mitigate the different identified barriers to utilization of decentralized mental health services, the following recommendations are suggested.

To the Ministry of Health through RBC

- To organize awareness campaigns for the general population on the availability of decentralized mental health services and how to access them.
- To ensure that there are no disruptions of treatment at the decentralized level of mental Health care.

To Ndera neuropsychiatric hospital and CHUK/ mental health department

- To ensure that all patients in their continuation or maintenance phase of treatment are Contra-transferred back to district hospitals for follow up sessions.

To the district hospitals

- To ensure that mental departments are regularly and timely supplied in medicines so as to avoid disruptions in treatment of mental health patients.

To the central level mental health care providers

- To ensure that patients in their continuation and maintenance phase of treatment are given a contra-transfer note to continue their follow-up at the decentralized level of mental health care.

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APPENDIX

Appendix 1: Consent form (English)

I, …………………………………………………………………. (Full names of participant),

Hereby certify that in signing this document, I am giving my consent to take part in the study titled **"Barriers to utilization of decentralized mental health services in Rwanda: Central level service users' perspectives"**. The nature and the aim of the research project have been clearly explained to me, and I have understood them. I have been made aware that there is no harm expected and that the participation is voluntary. I have understood that I can withdraw from the study at any time if I do not feel comfortable. My personal identification will not be linked to the study data in order to maintain the anonymity.

…………………………..   ………………………..
…../…./……

Name of the participant   Signature/fingerprint of the participant   Dates

…………………………..   ………………………..
…../…./……

Name of the researcher   Signature of the researcher   Dates

If you have any questions you may ask them now or later, even after the study has started. If you wish to ask questions later, you may contact any of the following:

- **Professor Gahutu Jean Bosco: +250 783340040**
- **Mr. Sunday : +250 788563312**

Appendix 2: Consent form (Kinyarwanda)

Jyewe, ………………………………………………….... (Amazina yose) nemeye kujya mu ubushakashatsi bwitwa**"Barriers to utilization of decentralized mental health services in Rwanda: Central level service users' perspectives"**. Nasobanuriwe neza intego y'ubu bushakashatsi ndetse n'uko buzakorwa kandi nabisobanukiwe. Namenyeshejwe ko ubu bushakashatsi nta ngaruka mbi buzangiraho kandi ko kubujyamo ari ubushake, ndetse nkaba nshobora no kubuvamo igihe cyose mbishakiye cyangwa bumbangamiye. Nasobanuriwe ko ibizava muri ubu bushakashatsi bizatangazwa ariko ko ntazigera ngaragazwa nk'umuntu ku giti cye.

………………………….. ……………………….. …../…./……

Amazina y'uwasobanuriwe Umukono cyangwa igikumwe Itariki

………………………….. ……………………….. …../…./……

Amazina y'umushakashatsi Umukono Itariki

Igihe mufite ikibazo ubu nguba cyangwa nyuma, n'iyo ubushakashatsi bwaba bwararangiye, mushobora kwiyambaza aba bakurikira:

- **Professor Gahutu Jean Bosco: +250 783340040**
- **Bwana Sunday : +250 788563312**

Appendix 3: Questionnaire (English)

Questionnaire N°: ………..

Section 1: General information

Instruction:

- *choose the correct answer*

a. Study site of the respondent:

1. CHUK/Mental Heath department
2. Ndera Neuropsychiatric hospital

b. District of residence

1. City of Kigali district
2. Other province's district

c. Age:

1. 18-25
2. 26-35
3. 36-45
4. 46-55
5. 56-65
6. > 65

d. Sex:

1. Male
2. Female

e. Education level: *(please circle the right response)*

a) None
b) Primary school
c) Primary school and above
d) High school
e) Institution of higher learning
f) University

f. Financial autonomy: *(please circle the right response)*

a. Independent
b. Dependant

Section 2: Awareness, interest in decentralized mental health services utilization

Instructions:

- *Please answer by yes or no. (Yes=1; No=)*

Nº	Question	Answer	
		Yes=1	**No=0**
1	I am not aware of the availability of mental health services at the district hospitals.		
1.a.	**For those who have responded to question 1 by yes** Now that you are aware of the existence mental health services in district hospitals, would you consider continuing your follow up to your nearest district hospital?		
1.b.	**For those who have responded to question 1 by No** As you already know that district hospitals have mental health services or have previously used them, would you consider going back for your follow up?		

Section 3: Barriers to utilization of decentralized mental health services

Instructions:

- *Please answer by yes or no. (Yes=1; No=)*
- *In the case of another reason, the respondent is requested to specify it, for it to be included on the list. In this context the answer will be yes as the reason will be given by the respondent him/herself.*

Patient-related barriers

2	I do not want to change my Health care provider as he/she knows well my condition.		
3	I do not want to keep repeating my history.		
4	I have a negative perception of mental health services at the district hospital level.		
5	I believe that Health care providers at the national referral level are more qualified and can manage well my condition.		
6	I am uncertain of my confidentiality as I am familiar with Health care providers at the district hospital level.		
7	I am afraid of being stigmatized as people from my neighborhood will know that I have got a mental problem.		
8	In terms accessibility, the central level settings are more convenient for me.		
9	Another reason:		

Provider related barriers as reflected by the patients

10	I am given an appointment every time I come for follow up.		
11	My Health care provider did not refer me to the decentralized level.		
12	I requested my Health care provider to continue the treatment at the nearest facility but he/she advised me not to do so.		
13	I was referred to the decentralized level, but the medication I take is not regularly available there.		
14	I was referred but I had a negative experience with the mental health services at the district level.		
15	My treatment is only available at the central level settings.		
16	Another reason:		

Appendix 4: Questionnaire (Kinyarwanda)

Urutonde rw'ibibazo N°: ………..

Icyiciro cya 1: Amakuru rusange

Amabwiriza :

- *Hitamo igisubizo cyangwa ibisubizo biri byo*

a. Aho usubiza aherereye :

1. CHUK/ishami rishinzwe ubuzima bwo mu mutwe
2. Ibitaro by'indwara zo mu mutwe bya Ndera

b. Akarere usubiza aturukamo:

1. Akarere ko mu mujyi wa Kigali
2. Akarere ko mu yindi ntara

c. Imyaka:

1. 18-25
2. 26-35
3. 36-45
4. 46-55
5. 56-65
6. > 65

d. Igitsina:

1. gore
2. gabo

e. Amashuri yize:

1. Ntayo
2. Amashuri abanza
3. Yacikirije amashuri yisumbuye
4. Amashuri yisumbuye
5. Amashuri makuru
6. Kaminuza

f. Amikoro:

1. Yibeshejeho
2. Atunzwe n'abandi

Icyiciro cya 2: Kugira amakuru kuri serivisi z'ubuvuzi bw'indwara zo mu mutwe zegerejwe abaturage n'uko zishimiwe

Amabwiriza :

- *Subiza na yego cyangwa oya. (Yego=1; Oya=0).*

Nº	Ikibazo	Igisubizo	
		Yego =1	**Oya=0**
1	Ntabwo narinzi ko hari serivisi z'ubuvuzi bw'indwara zo mu mutwe mubitaro by'uturere.		
1.a.	**Kubasubije ikibazo cya mbere na yego** Ubwo umenye ko izo service zihari, wakwemera kujyayo kugirango abe ariho ukurikiranirwa?		
1.b.	**Kubasubije ikibazo cya mbere na oya.** Ubwo usanzwe uzi ko izo service zihari, wakwemera kujyayo kugirango abe ariho ukurikiranirwa?		

Igice cya 2: Imbogamizi zibuza abarwayi gukoresha serivisi z'ubuvuzi bw'indwara zo mu mutwe zegerejwe abaturage

- *Subiza na yego cyangwa oya. (Yego=1; Oya=0).*
- *Ahanditse indi mpamvu, ubazwa asabwa kuyigaragaza ikandikwa k'urutonde rw'ibindi bibazo maze igisubizo cyayo kikaba yego kuko impamvu iba yatanzwe n'ubazwa ubwe*

Imbogamizi zishingiye kubarwayi

2	Sinifuza guhindura umuganga unkurikirana kuko asobanukiwe neza iby'uburwayi bwanjye.		
3	Sinifuza gukomeza gusubiramo buri wese ibijyanye n'uburwayi bwanjye		
4	Mfitiye icyizere gike service z'ubuvuzi bw'indwara zo mu mutwe mu bitaro by'uturere.		
5	Ntekereza ko abaganga bo kubitaro bikuru aribo bafite ubumenyi buhanitse bityo bakaba banyitaho kurusha abo kubitaro by'akarere.		
6	Sinizeye neza ko nagirirwa ibanga kuko abakozi bo kubitaro by'akarere tuziranye.		
7	Mfite ubwoba bwo kuba nahabwa akato kuko abaturanyi bahita bamenya ko mfite uburwayi bwo mu mutwe.		
8	Kugera ku bitaro bikuru nibyo binyorohera kurusha kujya ku bitaro by'akarere		
9	Indi pamvu:		

Imbogamizi zishingiye ku nzego zitanga ubuvuzi

10	Bampa randevu(rendez-vous) igihe cyose nje kwivuza		
11	Muganga wanjye ntiyigeze anyohereza kujya gukomereza imiti ku rwego rw'ibitaro by'akarere		
12	Nasabye muganga wanjye kujya gukomereza imiti ku bitaro binyegereye ariko angira inama yo kutabikora.		
13	Noherejwe gukomereza imiti ku bitaro by'akarere ariko imiti mfata ntikuze kuhaboneka		
14	Noherejwe gukomereza imiti ku bitaro by'akarere ariko sinishimiye serivisi zaho		
15	Umuti mfata uboneka gusa ku bitaro bikuru		
16	Indi mpamvu		

Appendix 5: Institutional review board approval notice

COLLEGE OF MEDICINE AND HEALTH SCIENCES

CMHS INSTITUTIONAL REVIEW BOARD (IRB)

Kigali, 9th /04/2019

Dr YUBAHWE Janvier,
School of Medicine and Pharmacy, CMHS, UR

Approval Notice: No 147/CMHS IRB/2019

Your Project Title ***"Barriers To The Utilization Of Decentralized Mental Health Services In Rwanda: Central Level Service Users' Perspectives"*** has been evaluated by CMHS Institutional Review Board.

		Involved in the decision		
			No (Reason)	
Name of Members	**Institute**	Yes	**Absent**	**Withdrawn from the proceeding**
Prof Kato J. Njunwa	UR-CMHS	X		
Prof Jean Bosco Gahutu	UR-CMHS	X		
Dr Brenda Asiimwe-Kateera	UR-CMHS	X		
Prof Ntaganira Joseph	UR-CMHS	X		
Dr Tumusiime K. David	UR-CMHS	X		
Dr Kayonga N. Egide	UR-CMHS	X		
Mr Kanyoni Maurice	UR-CMHS	X		
Prof Munyanshongore Cyprien	UR-CMHS	X		
Mrs Ruzindana Landrine	Kicukiro district		X	
Dr Gishoma Darius	UR-CMHS	X		
Dr Donatilla Mukamana	UR-CMHS	X		
Prof Kyamanywa Patrick	UR-CMHS		X	
Prof Condo Umutesi Jeannine	UR-CMHS		X	
Dr Nyirazinyoye Laetitia	UR-CMHS	X		
Dr Nkeramihigo Emmanuel	UR-CMHS		X	
Sr Maliboli Marie Josee	CHUK	X		
Dr Mudenge Charles	Centre Psycho-Social	X		

After reviewing your protocol during the IRB meeting of where quorum was met and revisions made on the advice of the CMHS IRB submitted on 9th April 2019, **Approval has been granted to your study.**

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

EMAIL: *researchcenter@ur.ac.rw* P.O. Box: 3286, Kigali, Rwanda WEBSITE: http://cmhs.ur.ac.rw/ www.ur.ac.rw

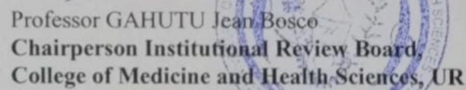
You are responsible for fulfilling the following requirements:

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

Sincerely,

Date of Approval: The 9th April 2019

Expiration date: The 9th April 2020



Professor GAHUTU Jean Bosco
Chairperson Institutional Review Board,
College of Medicine and Health Sciences, UR

Cc:
- Principal College of Medicine and Health Sciences, UR
- University Director of Research and Postgraduate Studies, UR

EMAIL: *researchcenter@ur.ac.rw* P.O. Box: 3286, Kigali, Rwanda WEBSITE: http://cmhs.ur.ac.rw/ www.ur.ac.rw