KNOWLEDGE AND ATTITUDES REGARDING MENTAL ILLNESS AMONG NON-PSYCHIATRIC PHYSICIANS WORKING IN PUBLIC HOSPITALS IN THE EASTERN PROVINCE OF RWANDA

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DECLARATION

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, University of Rwanda, 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

18/12/2020 .....

b. Authority to Submit the Project (proposal/dissertation/thesis)

Supervisor: Dr Charles MUDENGE

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

Supervisor

..... 18/12/2020 .....

Co-Supervisor

.....

DEDICATION

To my beloved wife Mariam UWAMAHORO

To my lovely children ISHIMWE UMMARU Hany, ISHIMWE UMMARU Brany, and ISHIMWE UMMARU Iamun

To my wonderful mother Tabu NYANYIRA

To Ikhlas Niyyat members

To Inshuti Nyanshuti members,

To Imfura cooperative members

AKNOWLEDGEMENT

I am highly grateful to the Almighty ALLAH for HIS countless and everlasting love and HIS mercy of life

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God bless you all.

ABSTRACT

Summary:

Mental illness has been in recent decades one of the most serious health challenges in the world and the care of people with mental disorders is a growing public health concern worldwide. This situation is worsening in the LMICS countries where the treatment gap is very pronounced and where resources are very scarce and inequitably distributed. In order to reduce this gap, the WHO has recommended the integration of mental health services care at the primary level where patients are managed by non-specialist in mental health. Although that measure is showing promises worldwide, studies point out significant gaps in mental health knowledge which compromise finally the effectiveness and the quality of the care provided. Rwanda has also adopted policy of integration up to the primary care level where mental health patients are firstly managed. However to our knowledge, there is no data which give the picture of the existing knowledge and attitudes among those non specialists, particularly doctors who are found at the frontline of the patient care

Objectives:

To determine the level of knowledge and attitudes regarding mental illness among non-psychiatric physicians working in public hospitals in the Eastern Province of Rwanda

Methods: This is a descriptive cross-sectional study conducted in 8 public hospitals located in the Eastern province of Rwanda. 127 physicians either GP or specialist working as clinician or involved in patient care were included in the study. After consenting, participants completed a questionnaire which was designed to collect information on participants' socio-demographic characteristics and assess knowledge and attitudes regarding mental illness. To assess attitudes, we used a modified MICA (Mental Illness Clinical Attitudes) scale which had 16 items and where each item was scored with 1 point. Participants who scored 8 points or above were considered as having positive attitudes and those who scored less were considered as having negative attitudes. To assess knowledge, we used a questionnaire which has been used in previous studies and has 35 items Those items were oriented for assessing various parameters that consist of elementary knowledge regarding mental illness and treatment approach towards mental illness.. Each item was scored with 1 point and participants who scored18 and above were considered as having sufficient knowledge while those who scored less were considered as having insufficient knowledge. Data were analyzed using SPSS version 16.Univariate, bivariate

and multiple linear regressions analyses were done. Significance testing for all inferential tests was set at $p< 0.05$ and a two-tailed, and 95% confidence level. This study was approved by the Institutional Review Board at the CMHS and by ethical committee to each hospital involved in the study.

Results

Our study was conducted in 8 public hospitals in the eastern province of Rwanda and 127 physicians consented and participated. Among them, 84.3% were general practitioners and 68.5% of them were trained in Rwanda as well as 90% of specialists. The majority of the participants were male with 83.5% whereas 57.5% were single. The age of the participants ranged between 25 and 60 years of age and the mean age was 32.50; their experience varies from 1 to 20 years for general practitioner while for specialists it varies from 1 to 30 years. A number of 61.4% of participants were having a dual practice and 23.6% practiced in private while 58.3% had been exposed previously to mental health experience. The items assessing attitudes and knowledge were relatively correctly answered where the average of good answers was 66.3% for attitudes and 64.1% for knowledge.

The study finds a strong positive correlation between knowledge and attitudes since P-value is = .000 The study also finds strong correlation for continuous variables with attitudes where age and years of experience have a positive impact with respectively (P = .048 and r= .643), (P= .023 and r=.669) as well as a strong correlation of those variables with knowledge were they have a positive impact also, since age has (P = .006 and r=1.042) and specialist years of experience has (P = .003 and r=1.022)

Keywords: mental illness, knowledge, attitudes, physicians, mental health literacy, Rwanda

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ACRONYMS AND ABBREVIATIONS

CHW	Community Health Workers
CMHS	College Of Medicine and Health Sciences
DALY	Disability Adjusted Life Year
DH	District Hospital
GBD	Global Burden Disease
GP	General Physicians
HC	Health Center
HICs	High Income Countries
HIV	Human immunodeficiency Virus
IHME	Institute for Health Metrics and Evaluation
IRB	Institutional Review Board
LMICs	Low and Middle Income Countries
MH	Mental Health
MICA	Mental Illness Clinical Attitudes Scale
PHC	Primary Health Care
SDG	Sustainable Development Goals
SSRI	Selective Serotonin Reuptake Inhibitor
TCAs	Tricyclic Antidepressants
UN	United Nations
WHO	World Health Organization
YLD	Years Lived with Disability

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Chapter 1 : INTRODUCTION

1.1Background

Health, as define by the world health organization is "a state of complete physical, mental and social wellbeing". Given this definition, mental health is considered as an essential fundamental element of health and achieving it at an uppermost standard of health is regarded as one among fundamental human rights.

WHO outlines also a relation between physical and mental health though actually the tendency in health promotion involve the inclusion of mental health into general health services to encourage a timely recognition and treatment of mental disorders associated with physical disorders. Consequently, the who recommend that the human resources development should make advancement enhancing skills and knowledge of specialized and non-specialized health workers for providing mental health services that are culturally appropriated, evidence based, and human rights oriented (WHO, 2013).

Considering both aspects of body and mind is essential to ensure healthy lives as it has been stipulated by the UN agenda through its sustainable millennium development goals. All seventeen SDGs and specifically the third one engage to the advocacy of mental health by taking forward mental health social determinants which include: demographic factors; economic status of individuals and societies; social aspect including infrastructures, safety, leisure opportunities, social cohesion; environmental events such as natural hazards, armed conflicts, and disasters (Lund et al., 2018).

Despite everything, the implementation of UN and WHO recommendations strikes many obstacles in LMIC, especially in Sub-Saharan Africa:

Firstly, regarding health policies, many countries located in this part of the world, give not than more priority to mental health as well as consistently limit the budget allocated this sector. Secondly, there is a remarkable gap of health care providers training relating mental health. The consequent to this gap in medical personnel is that doctors show less involvement in the management of mental problems. a study showed that most GP prefer to refer patients with mental problem to mental health professionals rather than assessing and managing themselves and not frequently will make a follow up of their referral(Hinrichs et al., 2012).Thirdly, mental health stigma has been throughout hindering the effectiveness of

intervention addressed to the promotion of mental health. As it has been conceptualized, mental health stigma consists of ignorance, prejudice and discrimination. It often manifests as, stereotyping, labeling, emotional responses, setting apart, status loss also as discrimination (Yang and Link, 2015; Evans-lacko et al., 2010). This conceptualization would not be easily comprehensive because, mental health stigma is present at all ecological levels: intrapersonal, interpersonal, community, institutional and governmental levels and in some conditions, stigma intervention may target a single level or different levels (Rao et al., 2019).

1.2 Justification of the study

Recently, different studies evince promises in the involvement of mental health non-specialized health professional in setting where resources are limited. However, significant gaps had been pointed out regarding their mental health literacy which consists of knowledge, attitudes, and perceived self-efficacy and that cannot be neglected. Thus, even non-specialists do receive people who have mental health problems in consultation, there is an evidence that many of them are not capable to identify and list symptoms attributable to mental illness (Spagnolo et al., 2018)

Additionally, knowledge among medical doctors relating to mental health may differ depending the country of training and rely the quantity, and quality of their formation and practice that they got at undergraduate as well as postgraduate. This was highlighted in previous report which showed also that GP possess inadequate knowledge and attitudes regarding knowledge while they were compared to psychiatrists (James et al., 2012).

Furthermore, Ndetei and his colleagues stipulated in their study that non-psychiatric professionals may pass over mental illness diagnosis consequent to insufficiency of knowledge and time while assessing patients with psychiatric symptoms regardless of their fundamental role at the frontline in managing patients at the peripheral levels (Ndetei et al., 2011).

In Rwanda, as it has been reported by IHME, the mental health problems are figured among the first ten leading causes of years lived with disability during the year 2017, these are, depressive disorders that ranked at the third place and anxiety disorders which take the seventh place. In addition, alcohol use had been revealed as one of the five leading risk factors driving the most death and disability combined in Rwanda.

However, despite the integration policy of mental health that Rwanda has developed during these recent years, by which mental health issues are managed at the peripheral level by mental health nurses, the process is set so that the patient who is referred from health care, is seen first by a general physician then if he suspected any mental problem, he referred the patient to the mental health service. In another hand, patients with mental who arrive as emergent case are also seen by the general physician on duty who eventually first take care to the patient. For those who are also admitted in wards, and present mental health problems, the physician in charge have to recognize the symptoms before calling a mental health professional nurse for evaluation. Thus this is showing how physicians have to have basic knowledge about mental illness and if not so this may have important clinical implications as it was stipulated by Spagnolo in his study(Spagnolo et al., 2018)

And, yet at our knowledge, there is no available data that emphasizing on knowledge and attitudes among non-psychiatric professionals in Rwanda and particularly medical doctors despite their position at frontline in the management of patients in public hospitals. This has been our motivation forward to conduct this research. The expectation from the result will be interesting as such that if the gaps are not covered, this will be used to provide further keys for promoting and developing knowledge among non-psychiatric physicians whichnis also a way to encourage further integration of mental health into primary settings.

Research questions:

- What are the existing knowledge and attitudes regarding mental illness among non-psychiatric physicians working in public hospitals in Eastern Province of Rwanda?
- What are the factors associated with knowledge and attitudes regarding mental illness among non-psychiatric physicians working in public hospitals in Eastern Province of Rwanda?

1.3 Aims and objectives

1.3.1 Aim of the study

To determine the level of knowledge and attitudes regarding mental illness among non-psychiatric physicians working in public hospitals in the Eastern Province of Rwanda.

1.3.2 Specific objectives

1. To assess existing knowledge regarding mental illness among non-psychiatric physicians working in public hospitals in the Eastern Province of Rwanda
2. To assess existing attitudes regarding mental illness among non-psychiatric physicians working in district hospitals Eastern Province of Rwanda
3. To identify factors associated at knowledge regarding mental illness among non-psychiatric physicians working in public hospitals in the Eastern Province of Rwanda.
4. To identify factors associated at attitude regarding mental illness among non-psychiatric physicians working in public hospitals in the Eastern Province in Rwanda.

1.3.3 Primary outcome measures

Establish a picture about knowledge and attitudes regarding mental illness among non-psychiatric physicians working in public hospitals in the Eastern Province of Rwanda.

Chapter 2 LITERATURE REVIEW

2.1 Mental Health

2.1.1 Concept of Mental Health and mental illness

The World Health Organization (WHO) describes the mental health as "a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community". Given this definition, mental health is thereafter considered as an integral part of an individual's capacity to lead a satisfactory and enjoyable life, that encompass also the competences for establishing and holding tight relationships, for studying , laboring as well as keeping interest about leisure activities, and performing prompt daily decisions relating to job, housing, education as well as other needs or will (World Health Organization, 2018). By this definition the concept of the mental health is extended to a non-restrictive meaning and is not understood as the absence of mental disorders

It's known that people have mental illness when they are not able to perform their full life in society, as a result from conditions that affect cognition, emotion, and behavior (Wakida et al, 2018). Besides, many factors that put this mental health in risk have been all along identified. These may be social environment, economic context and biological as well as the wide surroundings in which individuals find themselves. Therefore; exposure to these risk factors or stressors can lead to a range of mental health problems, especially among more vulnerable population groups (World Health Organization, 2018).

2.1.2 Mental health, a serious burden worldwide

The occurrence of mental illness is common throughout the world and contemporary studies report that these disorders are significant even though often underappreciated as global morbidity and mortality cause. Recently, a WHO (GBD, 2010) study on disease burden indicates neurological with mental disorders have about 10.4 % of DALY, among which mental illness and substance use disorders take the largest with 71.4% of DALY. They account also almost one third (28.5%) of YLD, ranging them as the leading cause of YLD (Doumit et al., 2019)(Haddad et al., 2016). Others epidemiological studies at the community level done throughout the world have estimated that life prevalence rates of mental disorders that don't include neurological conditions, among adults range between 12.2% and 48.6% and that a 12 month prevalence rates range from 8.4% and 29.1%. These reveal how great burden

are mental worldwide (Kohn et al., 2004). And as well, major mental disorders which consist of depression, bipolar disorder, alcohol use disorders and schizophrenia count out of the 10 heading causes of disablement attributable to conditions of health in developing countries , taking a total of 19.1% of all connected health conditions disablement (Rathod et al., 2017).In addition, it is projected by experts that by 2030, depression will probably take the third among leading causes of disease burden in LIC while it will be the second highest cause of disease burden in MIC (Rathod et al., 2017).

2.1.3 Global mental health gap

The World Health Organization (WHO) point out that mental illnesses occurrence is wordwide common and that over a proportion of 25% of people across the word experiment mental disorder during their life span (Whiteford et al., 2015). Moreover, literature reports that the treatment gap existing between LIC and HIC is very huge as the estimation is respectively about of 30-50% and 76-85%. This means that 76 to 85 % of individuals with serious psychiatric conditions in resource limited setting do not receive the treatment they need (Grelotti et al., 2015). Regarding this evidence, an international survey reported that no more than eleven percent(11.1%) of serious mental problem cases in China and only about ten percent (10.4%) in Nigeria were treated during preceding 12 months whereas the number of individuals suffering from mental illness who benefited for evidence-based care were possibly to be insignificant (Rathod et al., 2017).

The WHO indicates however that in HIC , mental disorders care as well as for neurological and substances abuse is delivered lately after many years after the onset of the illness even though there are found more facilities, and its higher utilization rates than LMIC and where treatment rates are comparatively higher (Udedi, 2016)..

And last and not the least, mental health resources in LMIC have been point out as being scarce by many research (Udedi, 2016) .

2.1.4 Correlation between mental illness and physical illness

Mental and physical health and illnesses have been reported by different researches as having multidirectional connections. These researches show also how feelings, thoughts as well as health behavior induce a notable effect on physical health condition. The opposite is also proved, physical health status significantly exert influence on mental health and wellbeing (Collins, 2016).

Many other researchers had illustrated how complex are relations between mental problems and physical ones. People presenting physical illness score high mental illness prevalence when compare to who do not have and mental disorders are well recognized to be risk factors for the apparition, evolution and their poor prognosis thus cardiovascular , diabetes as well as cancer have been abundantly reported as such examples.

It is commonly known that mental health doesn't exist without physical health and that the opposite is also true. Moreover, mental illness are once in while much disabling than physical diseases. Nevertheless, psychiatric disorders regarded as comorbid disorders are frequently cared for with negligence in general hospital settings despite their high prevalence(Wang et al., 2017).

The high prevalence of these psychiatric comorbid disorders has been endorsed enormously to their simultaneous occurrence with physical disorders that have high prevalence in primary care level of care like diabetes mellitus, heart disease, hypertension and asthma (Alkhadhari et al., 2018).

After all and regardless the chronological order in which they arise, either the causal pathways linking them, the comorbidity of a mental and physical condition may impact the mode of presentation, clinical severity, response to treatment, and burden of illness of both conditions (Alkhadhari et al., 2018).

2.1.5 Mental Health services in Rwanda

Rwanda is a low income country situated in Sub-Saharan Africa. In this densely populated country, the joint national policies coupled to culture of performance in all domains of public sector have resulted in tremendous development of the health sector during the past 5-10 years (Sayinzoga & Bijlmakers, 2016)

With this new system mental health is now integrated into the package of care of health centers, district hospitals, provincial hospitals and referral hospitals. Obviously, mental health services and resources were shifted from the psychiatric hospital to the community health facilities: District Hospitals (DH) and Health Centers (HC).

Despite challenges to which the system faces, the Mental health services offered at PHC (Primary level of health care) level are also consistent and rapid due to the training which has been provided to PHC nurses (Nyirandagijimana et al., 2017).

2.2 Knowledge and attitudes

2.2.1 Introduction

Attitude and knowledge join all together in mental health literacy which comprises the ability to identify mental disorders, their treatment and etiologies and also having attitudes which promotes mental health(Wu et al., 2017). Therefore, attitude and knowledge are interrelated with behavior, this interrelation of attitude and behavior has motivated some researchers to state that intervention aiming at behavioral change should focus first on knowledge and attitudes as determinants of the intervention successfulness (Varnell, Haas, Duke and Hudson, 2008).

2.2.2 Attitudes

2.2.2.1 Definition

The definition of attitude as we find it in the Cambridge advanced learners Dictionary is "a feeling or opinion about something or someone or a way of behaving that is caused by this". Nevertheless, this has not ceased to be an object of discussion during the last decades to find a correct definition.

Based on reasoned action theory , in the middle of the 19th century, Fred D. Davis defined attitude as "an individual's degree of evaluative affect toward the target behavior" (Kroenung & Eckhardt, 2011) and after that, many adjustments have been made on this definition according to more development done about the technology acceptance model . But after all the terminology "affect" stayed an essential component of the attitude concept and its extensions over the last thirty years.

Furthermore in the field of social psychology research, defining attitude had been undergoing also many changes; however Eagly and Chaiken had conceptualise an attitude holistic definition which describes attitude as "psychological tendency that is expressed by evaluating a particular entity with some degree of favor and disfavor" and they referred psychological tendency as "a state that is internal to the person" and evaluates to "all classes of evaluative responding, whether overt or covert, cognitive, affective or behavioral"(Kroenung & Eckhardt, 2011).

2.2.2.2 Structure of attitude

2.2.2.2.1 Content of attitudes

As seen in the definition, attitude is considered as a general appraisal (e.g., like–dislike) towards an attitude object. Therefore, this definitional prospect yield various attitudes conceptual model among which multicomponent model that is found to historically the most influential(Haddock & Maio, n.d.).

This modal claims that, attitudes are summation resulting from an object valuations and which valuations have cognitive, affective and behavior components as this were acknowledged in social psychology literature(Haddock & Maio, n.d.).

Affective evaluative reactions are made up by mood, feelings experiments as well as emotions which occur when people encounter different attitude objects. And they may range from intensely positive (positives emotions like aspiration, pleasure and enjoyment) to the opposite of negativity (negatives emotions like wrath, panic and negativity) (Albarracín et al. 2005)

Cognitive evaluative answers include thoughts, beliefs, or ideas concerning the object of attitude. The beliefs are thus implying connections that are drawn by individuals between the attitude object and diverse features (Fishbein and Ajzen 1975). These features manifest negative or positive valuation and are, similarly to the affective reactions, ranged on an evaluative continuum from extremely positive (e.g. beneficial, attractive) to extremely negative (e.g. junky, futile) (Eagly and Chaiken 1993). Moreover, affective and cognitive as well can be manifested openly (emotional or believe verbal statement) or secretly with no any noticeable affects.

The behavior evaluative reactions are undisguised behaviors that individual do express towards the attitude object. The concerning behavior refers to past behavior regarding the concerned attitude object. As well as the preceded evaluative reactions, these are also measured by an evaluative continuum (Haddock & Maio, n.d.).

2.2.2.2.2 Dimension

The attitude dimension theory conceptualizes the organization of evaluations regarding negative and positive attitudes within and among the cognitive, affective and behavioral elements of attitude. It raises two different perspectives of attitude which consist of one-dimensional perspective which theorizes that positive and negative elements are carried along

a single dimension. This is opposed to two-dimensional perspective which theorizes that positive and negative elements are carried along separate dimensions (Cacioppo, Gardner &Berntson, 1997).

In other words, for the one-dimensional, the positive and negative elements of attitudes take opposites location in the same dimension and people may experience either elements located in each location or in between while in two-dimension, positives and negatives elements are retained along two different dimensions.

2.2.2.2.3 Function of attitudes

The models of attitude function were developed early in the 1950. Yet at that time, Smith et al proposed that attitudes respond to three primary functions or needs which are: object appraisal, social adjustment and externalization. (Smith et al. (1956))

Object appraisal alludes to the capacity of attitudes to condense, in our social world, the negative and positive characteristics of objects, this means that attitudes enable individual to come close to objects that are useful while they keep away from toxic objects.

Social adjustment concerns attitudes that enable people to distinguish who please them from those who don't whereas externalization regards attitudes that uphold the self versus the internal conflict. In another side, Katz (1960) had also proposed that attitude has four functions and among them some were already proposed by Smith. These are: knowledge, utility, ego defense and value expression.

2.2.2.3 Attitudes formation and changes

It is known that attitude formation begin early in life even though some other attitudes may form as we experience new experiences, new persons, and new places across our lives. Also other attitudes may change as a consequence of experiment, new information, or social effect.

As stated by Myers in 1990, attitudes are gained by means of mere exposure, conditioning and socialization. This theory had been admitted extensively by psychologists and social scientists. Besides, socialization alludes to a step by step acquisition through observation, learning and reinforcement process of attitudes, language, values and moreover attitudes can also be learned from other across social learning as direct experience, modelling and classical conditioning classical conditioning (Marie et al., 2004).

Baron & Byrne illustrated the definition of classical conditioning as "learning through association process" which happens when stimulus constantly precedes another and finally the one comes first may soon become for the one that occurs later(Byrne & Baron, 1994).

This classical conditioning is whereas similar to the evaluative conditioning in which a conditioned stimulus is regularly presented before an unconditioned stimulus. However there are many aspects in which both conditioning are different such as the requirement of sufficient awareness in classical while evaluative conditioning may present with or without awareness (Albarracin et al., 2018).

Banduras (1969) on his side, establish the "social learning theory" which states that behaviors and attitudes are learned by observation and imitation to parents and peers exhibited actions(Alemi & Stempel, 2017).

The direct experience had been explained later on by Bornstein as it is learned from exposure to a determined object and so that the repetition of the experiment through the time evolve in an inclination or aversion to an object while compared to objects experimented less often.

Direct experience governs the probability that an attitude will be enough arousing as to be activated when the object is facing against. In addition, Fazio and his colleagues (e.g., Fazio, Powel, & Herr, 1983) have suggested that direct experience induces great attitude-behavior association since attitudes forged from direct experience are effortless to recuperate from permanent memory (Albarracin et al., 2018).

Mere exposure is described as a phenomenon in which an attitude about a stimulus gets further appreciative with rising recurrence of exposure to the stimulus. By this for example, people will like some features better when they were got repetitive exposure to them (Zajonc, 1968) (Albarracin et al., 2018).

As described in the social judgment theory, attitude modification is resulting from a perceptual process. When the place of the communication is near to the recipient's attitude, people become nearby to the position pleaded in the communication by the fact that they assimilate their own attitude to the recipient.

2.2.2.4 Attitudes in correlation with mental illness

Few contemporary studies discussing mental health professionals' attitudes toward their patient who have mental illness have been published, however, a number of them have found similarity about negatives and stigmatizing trends (Yap et al., 2014). Moreover the literature gives different theories model concerning negative attitudes formation towards individuals with mental illness. Unfortunately these models are not specifically for health professionals since they are also applied to general public. Some stereotypes were identified by Brockington as the central mediators of negative attitudes toward the mental ill. These are 'dangerous', 'incompetent", "parasitic" and "one's own fault".

Additionally, according to Corrigan model, dismissive behavior regarding individual having mental problems is known to be a result of perceived dangerousness and the responsibility amputation while Angermeyer established a sturdy correlation between mental illness rating and social distance. Perceived dangerousness and dependency induces various feelings like antipathy, anger and fear which are afterward decisive for a person's will determining social distance. (Maier et al., 2015)

As long as negative attitude is concerned, stigma take a great place as such and is classified in three group: The first one is the *public stigma* which consists of harmful acts addressed to people suffering from mental illness by a way of prejudice and discrimination from general population such as employers, health care providers, governmental officials or faith community members. The second group is the *self-stigma* which involves harm that can occur when people have fix some barriers against achieving some of their potentials either by low self-esteem or when they are underestimated by their family members. The third group is known as *label avoidance*. This is a kind of social segregation by which a group of people who have mental disorders are receiving services at a specific place without mixing with other people and is not necessarily attributed to a physical person (Corrigan, 2008).

Negative attitudes and the related concept of stigma have a substantial impact on the care of people with mental health problems and a strong documentation establish their link to discrimination, under-use of mental health services, delay in receipt of treatment, and an impeded recovery process (Cowan et al., 2012)

2.2.3 Knowledge

2.2.3.1 Definition

The definition of Knowledge that has been frequently adopted is that of "justified true belief" (Nonaka and Takeuchi, 1995; p.87). A number of three fundamental concepts conceptualize knowledge account and are known as tripartite.

Firstly, the truth condition which means that if a postulation is known by someone, thus this postulation might be true and reversely, if the postulation is wrong, that mean that the person does not have knowledge of what he pretends to know. Hence truth condition does distinguish knowledge and opinion. Secondly, the belief condition which postulates that if an assumption is known by someone, then this person does believe that assumption and finally the third fundamental concept is known as the justification condition which necessitates a convenient method of rationalizing that someone belief is true.

Thereby, when assembling for knowing the above conditions, we may deduct that the requisite and adequate conditions to know that something matter, consist about what individual is said to know be true, that the person is sure of it and finally, that the person should have the right to be sure.

Ikujiro and his colleagues validated, in 1995 the traditional definition theorized by Plato that for"knowledge is justified true belief.

However, the interpretation of this definition had aroused considerable difference. While the Western epistemology put their concentrations by working on truthfulness as fundamental feature of knowledge, Nonaka and Takeuchi on their side, were focused on justified belief considering knowledge like a process used by human to justify their belief about truth and that this process is dynamic.

2.2.3.2 Types of Knowledge

By embracing an impartial look on knowledge's nature, certain authors illustrate that exist three kinds of knowledge which are interconnected even though having some specific features each other. These are experiential knowledge, skills; and knowledge claims.

The first type which is known as experiential knowledge is resulting from our direct relation with the surroundings environment, by the means of our sensory system, and then after to be

processed by the brain. The creation of this knowledge involves a strong interaction between spiritual emotional and rational knowledge given that this is a result of the active involvement of the entire body and mind. The second type consists of Skills which imply knowledge concerning the way we do things. This is built on experimental knowledge except that it is a nicely organized and directed knowledge we obtain as we carry out regularly a number of assignment and all along learning as we do it.

Finally the third type consists of knowledge claims that are defined as something what people either know, or they think they know. Therefrom, they do not know how much they know as knowledge combines tacit and explicit knowledge, this denotes that there is experiment which is hold in their unconscious memory and which display particularly like as intuition. These knowledge claims allow people to learn from each other and construct their common knowledge".

2.2.3.3 Physician and mental illness knowledge

Mental health disorders such as depression, psychosis and associated suicide have been found to be frequent at primary health level of care and GPs are known to be on the frontline when talk about treatment of those mental problems in countries where primary care is provided by GPs(WHO, 2003). Previous study show that, GPs management of mental disorders is practically based on psycho-education, support therapy, pharmacotherapy, and yet there are still difficulties associated with this model of healthcare practice. In Canada, it was found that GPs use clinical intuition with few clinical tools (Fleury et al., 2012) . However, other factors as shown in a systematic review, pose the biggest barriers for physicians working at primary level in recognizing and posing mental illness diagnostic. Those factors are among other the shortage of providers and resources, the reimbursement, time and self-confidence (Brien et al., 2016).

Furthermore, another study found that physicians, mainly GP had been taking care only to a limited number of patients with depression and indicated that the likely barrier to care was inadequacy of knowledge. The same study point out that, physicians were unfamiliar with pharmacotherapy about mental disorder and hence this makes physicians avoiding to treat depression. Moreover the, reports that about a third of GP were ignoring the adequate period of trial that is recommended for antidepressant drug and they consider also that the treatment of depression should be interrupted

shortly as well as possible. additionally, most of them were found unacquainted to identify side effect profiles of the most known antidepressants TCA and SSRI while more than fifty percent were not able to tell the antidepressant's name that they use regularly (Liu et al., 2008).

A later study done by Cowan, had shown an existing among physicians a discrepancy in knowledge between depression and psychosis which are the major mental disorders and that only a third of physicians had been capable to properly identify depression signs and symptoms while the number worsened to less than third regarding psychosis (Cowan et al., 2012).

A systematic review conducted in western countries and assessing perception in benzodiazepine prescription among GP found that there is no a standardized approach rather that each GPs choose their individual approach depending on their empathy to their patients or the satisfaction of will of patients. GPs face the same challenges with withdrawal of benzodiazepines (Sirdifield et al., 2013).

Despite the persistence of these limitations issue, Non-psychiatric doctors have a capital role regarding the treatment of mental illnesses. Identifying and managing them remain as well as a great challenge. Thus elements such treatment knowledge, barriers regarding attitudes and confidence may jeopardize the capability of a physician to treat mental disorders (Liu et al., 2008).

Chapter 3 : METHODOLOGY

3.1 Study area

The Eastern Province is one of the 5 provinces and it has 7 districts, Rwamagana, Ngoma, Nyagatare, Kayonza, Kirehe, Bugesera and Gasibo. It is the largest with 9813Km2, the most populated with 2 600 818 and the least densely populated with 275per Km2 comparatively to other provinces in the country. It counts 9 public hospitals among which, there is one referral, one provincial and seven district hospitals.

The Health service provision in the province follows a general structure from the village level to the provincial one. At village level, the health services are offered in the community by CHWs, who focus mainly on screening and prevention but they provide also some limited treatment care. At the cell level, are based health posts with package of services such as PHC services including promotional, preventive and primary curative services; are also provided at this level basic diagnostics with rapid testing; basic package of services for remote areas that are far from health centers.

At sector level, health centers provide various services which include government-defined minimum package of activities with complete and integrated service consisting of rehabilitation services, promotional, preventive and curatives services. Health centers have also in their scope health post and health workers supervision

At level of district, there are district hospitals that provide services consisting of government-defined complementary package of activities (for example caesarean section, treatment of complicated cases); delivery of care to patients transferred from primary health centers; organizing activities for the health district and supervision of district health personnel.

At province level, the provincial hospital, provide the complementary package of activities and specialized care which include surgery, internal medicine, pediatrics, and gynecology and obstetrics.

3.2 Study design and population

This is a descriptive quantitative cross-sectional study and has been conducted in public hospitals located in the Eastern Province and was done on medical doctors, working as clinicians or involved in patients care in different services in public hospitals in the Eastern Province of Rwanda. Participants in our study were working in 8 public hospitals which are

Nyagatare hospital, Kiziguro hospital, Gahini hospital, Kibungo hospital, Rwinkwavu hospital, Kirehe hospital, Rwamagana hospital and finally Nyamata hospital,

3.3 Selection of study population

3.3.1 Inclusion criteria

The study include GP as well as specialist involved in clinical care; they were all employee of the designed hospital on status or contractual basis, or intern doctors who were deployed to respective hospitals as they are considered as GP doctors.

3.3.2 Exclusion criteria

The study were exclude non-regular doctors (visitors), Not being involved in daily patient care and psychiatrist doctors.

3.3.4 Sample size estimation

Referring to the official gazette n° 47 of 21/11/2016 released in 2016 determining the organizational structure for employees of public hospitals in Rwanda, medical doctors expected to work in the eastern province is around 160, all together from different specialties and general physicians and for the 9 hospitals located in the province.

However, the government is still encounter the lack of medical staff and specially, medical doctors has difficulties to attain the above number. The number of physicians given by the Ministry of Health during our study period was 138 but only 127 from 8 hospitals provided consent to participate in the study.

3.4 Study procedures

3.4.1 Instruments

A semi structure questionnaire was used in this study to assess the knowledge and attitudes among the participants. The questionnaire was divided in two sections: The first one is for Social demographic information such as age, gender, qualification, country of training, name of hospital, work experience, previous mental health exposure. The second section had statements assessing knowledge and attitudes of the participants, it comprises 27 statements which were organized in 2 groups. The first group was assessing attitudes and comprised 16 statements whereas the second group comprising 11 statements was assessing knowledge regarding mental illness. Some statements in the second group were structured with multiple

sub statements which bring the knowledge statements to a number of 35 and the total number of statements for the questionnaire to 51.

For assessing attitudes, the Mental Illness Clinicians' Attitudes (MICA) Scale (version 4.0) has been used; it was adapted to fit with our context. The MICA (version 4.0) scale in its origin form has 16 items and which are rated by means of 4 points Likert scale and has been used in many studies assessing attitudes worldwide (Rojas Vistorte et al., 2018). However, in our context, the items were answered by YES or NO and the correct answer was rated by 1 and the false answer by 0 instead of rating it with Likert scale. As the total score is 16, the half of it which is 8 was the cut point. Those who scored 8 and above, were considered as having positive attitudes and those who scored less were considered as having negatives attitudes

Knowledge regarding mental illness was also assessed by a semi structure questionnaire that was already used in others similar studies(Aruna et al., 2016) and that would allow comparison and make reliable the results even though we managed some adaptation to fit with our context. Each item was answered by a YES or NO and The same method as for attitudes assessment was applied for scoring. As The questionnaire had 35 items, the total score was 35 and those who scored 18 and above were considered as having sufficient knowledge regarding mental illness and those who scored less, were considered as having insufficient knowledge regarding mental illness. Those items were oriented for assessing various parameters that consist of elementary knowledge regarding mental illness and treatment approach towards mental illness.

3.4.2 Validation and translation of the instrument

The original version of the questionnaires was in English which is the official language of instruction in Rwanda since 2009 and the language used in medical practice. However, as certain hospitals might have employed physicians from outside Rwanda, mainly from neighboring country where French is used as academic language, it was translated into French.

This questionnaire was checked for face validity by the research supervisor and a clinical supervisor within the department of psychiatry-UR who also contributed to the composition of some items while adapting to our context and checked that the items are understandable and comprehensive.

3.4.3 Administration of the instrument and Data collection

3.4.3.1 Administration of the instrument

The questionnaire was handed to the each participant by the investigator and his assistants recruited from local staff and who had been trained by the researcher. Lists of eligible participants were elaborated before the administration of the questionnaire. All selected participants were physically contacted by the investigator or his assistants. Before handing the consent form and the questionnaire, the investigator or his assistants briefly introduced the aim of the study and clearly explain the content of the consent form such that participants could immediately decline to participate in the study if they wished to and without giving any reasons. The questionnaire was attached together with the consent form which was the front page.

3.4.3.2 Data collection

The data collection was done from 1stJuly to 31st July 2020. The questionnaire was self-completed by the participants. After completion, the questionnaires were given back to the investigator or his assistant in a sealed envelope.

3.4.3.3Data management and analysis

Data was analyzed using SPSS 16. For tests of associations, chi-square and Fisher's exact tests were done to determine relationship between different variables. One-way analysis of variance (ANOVA) were used to determine association between socio-demographic variables and knowledge or attitude scores whereas the. Variables of significant association were entered into a multiple linear regression model to identify independent significant predictor variables of knowledge and attitudes scores. Significance testing for all inferential tests was set at $p< 0.05$, two-tailed, and 95% confidence level.

3.4.4 Ethical consideration

3.4.4.1 Respect for participants

The participants gave their consent by signing a consent form that gave details and clarification for the research in both English and French which are languages that participants understand. Participants were free to decline their participation at any time during the process of the research.

3.4.4.2 Confidentiality

The questionnaire was anonymous while collecting, hard copies of signed consent forms and completed questionnaires were maintained in a locked office within a key locked drawer and digital soft copies on password protected hard disk and backed up on CD also with password.

In data collection and analysis, we did not use participants' names; instead, only study numbers were used. The participants' information was kept confidentially and used for research purpose only

3.4.4.3 Non maleficence

This study did not pose any risk to the participants and did not involve invasive procedures.

3.4.4.4 Conflicts of interests

This study was done in the scope of partial fulfillment of requirements for the degree of Master of Medicine in Psychiatry, University of Rwanda. There were no conflicts of interest.

3.4.4.5 Ethical and administrative approval

This research proposal was submitted to CMHS Institutional Review Board (IRB) for approval. Ethical committee from concerned hospital had approved and granted authorization to carry the research.Those are Nyagatare hospital, Kiziguro hospital, Gahini hospital, Kibungo hospital, Rwinkwavu hospital, Kirehe hospital, Rwamagana hospital and finally Nyamata hospital

Chapter 4 : RESULTS

4.1 Socio-demographic characteristics of participants.

Table 1: Frequency Distribution of non-continuous variables

Variable/Values		**Number**	**%**
Gender	Female	21	16.5
	Male	106	83.5
Marital status	Single	73	57.5
	Married	54	42.5
Medical grade	General practitioners	107	84.3
	Specialist physician	20	15.7
Medical training country	Rwanda	81	68.5
	Abroad	46	31.5
PG training country	Rwanda	18	90.0
	Abroad	1	10.0
Working place	RH	24	18.9
	PH	21	16.5
	DH	82	64.5
Dual practice	None	78	61.4
	Private	30	23.6
	Public	19	15.0
Previous exposure	Without exposure	53	41.7
	With exposure	74	58.3

Table 2: Descriptive statistics for continuous variables used in a study

Variables (continuous)	N	Minimum	Maximum	Mean	SD
Age	127	25.00	60.00	32.5039	6.09693
GP experience years	127	1.00	20.00	3.3858	3.05777
specialist experience Years	20	1.00	30.00	4.1500	6.30184
Knowledge score	127	9.00	31.00	22.1392	4.80034
Attitudes score	127	2.00	15.00	10.6220	2.80569

Our research was conducted in 8 public hospitals in the eastern province of Rwanda. 127 consented and participated in the study. The age of the participants ranged between 25 and 60 years of age and the mean age was 32.50 with a std. deviation of 6.097; their experience varies from 1 to 20 years for generalist with low std. deviation of 3.057 while for specialists it varies from 1 to 30 years with high variability of 6.302 for std. deviation. Regarding knowledge and attitudes assessment, score for knowledge was ranged between 9 and 31 with mean score of 22 and std. deviation of 4.80 while the score of attitudes was ranged between 2 and 15 with a mean score of 10 and std. deviation of about 2.80 (table 2).

The majority of the participants were male with 83.5% while female were only 16.5% and only a slight majority of single with 57.5 % compared to married with 42.5%. Regarding their grade 84.3% were general practitioners while only 15.7% were specialist. Moreover, 68.5% of general practitioners got their medical training in Rwanda (table 1).

Among specialists, 90% had completed their training in Rwanda while the remaining were awarded abroad. We found out that 61.4% of participants were having a dual practice and that 23.6% were practiced in private and 15% in others public institutions (table1). Concerning their place of working, a majority with 64.6% were working in districts hospitals while only 18.9% and 16.5% were respectively working in referral and provincials hospitals.

Concerning a previous mental exposure, the researcher found out that 58.3% had been exposed to mental health practice and that the majority among them with 58% have had a short term training (table 1).

4.2 Level of existing Knowledge among the participants.

Table 3: The Level of knowledge among the Participants

Values		Knowledge				Total		P-value
		Insufficient NO	(%)	Sufficient NO	(%)	NO	(%)	
Gender	Female	2	(9.50)	19	(90.50)	21	(100)	0.263
	Male	2	(19.80)	85	(80.20)	106	(100)	
Age group	Less than 35 age	20	(25.60)	58	(74.40)	78	(100)	**0.02**
	Between 35 and 44	3	(6.70)	42	(93.30)	45	(100)	
	45 and above	0	(0.00)	4	(100)	4	(100)	
Marital status	Single	17	(23.30)	56	(76.70)	73	(100)	0.078
	Married	6	(11.10)	48	(88.90)	54	(100)	
Medical grade	GP	21	(19.60)	86	(80.40)	107	(100)	0.305
	Specialist	2	(10.00)	18	(90.00)	20	(100)	
Medicine training country	Abroad	5	(10. 90)	41	(89.10)	46	(100)	0.11
	Rwanda	18	(22.20)	63	(77.80)	81	(100)	
PG training country	Rwanda	2	(11.10)	16	(88.90)	18	(100)	0.884
	Abroad	0	(0.00)	2	(100)	2	(100)	
GP experience years	From 1 to 4	21	(23.30)	69	(76.70)	90	(100)	0.057
	From 5 to 9	2	(5.70)	33	(94.30)	35	(100)	
	15 and above	0	(0.00)	2	(100)	2	(100)	
Specialist experience years	From 1 to 14	0	(0.00)	18	(100)	18	(100)	**0.002**
	15 and above	1	(50.00)	1	(50.00)	2	(100)	
Working Place	RH(1)	4	(16.70)	20	(83.30)	24	(100)	
	PH(1)	3	(14.30)	18	(85.70)	21	(100)	
	DH (6)	16	(19.50)	66	(80.50)	82	(100)	0.067
Dual practice	No	15	(19.20)	63	(80.80)	78	(100)	0.679
	Yes	8	(16.30)	41	(83.70)	49	(100)	
Dual practice facilities	None	15	(19.20)	63	(80.80)	78	(100)	0.646
	Private	6	(20.00)	24	(80.00)	30	(100)	
	Public	2	(10.50)	17	(89.50)	19	(100)	
previous MH exposure	No	17	(32.10)	36	(67.90)	53	100)	**0.001**
	Yes	6	(8.10)	68	(91.90)	74	100)	
Types of exposure	Short term training < 4 weeks	6	10.30)	52	(89.70)	58	(100)	0.406
	Long term training > 4 weeks	0	(0.00)	13	(100)	13	(100)	
	Mentorship by psychiatrist	0	(0.00)	3	(100)	3	(100)	
Attitudes	Positive attitudes	10	(9.00)	101	(91.00)	121	(100)	
	Negative attitudes	13	(81.20)	3	(18.80)	26	(100)	**0.000**
Total		**23**	**(18.10)**	**104**	**(81.90)**	**127**	**(100)**	

The above table (3) represents the distribution of level of knowledge among Participant's characteristics. Level of knowledge was grouped in two; those who score correctly above half of items in knowledge questionnaire are considered as having sufficient knowledge while those who scored less than that are considered as having insufficient knowledge. Giving that, among 127 participants, the majority with 104 (81.90%) were found to have sufficient knowledge whereas 23(18.10%) are considered as having insufficient knowledge. Regarding different characteristics of the participants some have shown association with the level of knowledge that was statically significant as their P-values were < .05. Those are the participants age with **P = 0.002**, year of experience for specialist with **P = 0.002**, previous exposure to mental practice with **P = 0.001** and the level of attitudes among participants with **P = 0.000**. The remaining participants' characteristics showed no association with the existing knowledge.

Table 4: Distribution of good and wrong answers regarding knowledge

Items	Good answer (%)	wrong answer (%)	Total
# Does the risk of psychiatric problems increase in people who:			
A. Have less sexual desire	48.8	51.2	100
B. Masturbate excessively	67.7	32.3	100
C. Are sad and unhappy mostly	91.3	8.7	100
D. Have a busy and hectic lifestyle	69.3	30.7	100
E. Frequently complain of tiredness	66.1	33.9	100
F. Have a failed romantic relationship	85	15	100
G. Have a traumatic childhood	9.4	90.6	100
H. Have lot of tensions	16.5	83.5	100
# Are older people less prone to mental disorders	24.4	75.6	100
# Children do not suffer from psychiatric problems	13.4	86.6	100
# Women are less prone for psychiatric disorders	24.4	75.6	100
# Lower socioeconomic class increases risk of having psychiatric disorders	27.6	72.4	100
# Higher education or high IQ increases risk for psychiatric disorders	29.9	70.1	100
# Psychiatric disorders are due to:			
A. Genetic reasons	34.6	65.4	100
B. Neurotransmitter imbalances	15	85	100
C. Abnormal family	65.4	34.6	100
D. God's punishment for past sins	18.1	81.9	100
E. Social circumstances	90.6	9.4	100
F. Poor nutrition	40.2	59.8	100
G. Polluted atmosphere	26.8	73.2	100
H. Loss of seminal/genital fluids	21.3	78.7	100
# In your opinion psychiatric disorders are:			
A. Untreatable	9.4	90.6	100
B. As well treated by faith healers as psychiatrists	33.9	66.1	100
C. Improved by leaving patient alone	16.5	83.5	100
D. Improved by change in environment	39.4	60.6	100
E. Improved by increasing awareness toward emotions	31.5	68.5	100
F. Treatable by a psychiatrist	3.1	96.9	100
# According to you, psychiatric disorders are:			
A. Only relieved, not cured using medicines	40.2	59.8	100
B. Less disabling than the treatment itself	33.9	66.1	100
# According to you in the treatment of psychiatric disorders:			
A. Psychotherapy is an essential part for all disorders	18.1	81.9	100
B. Psychotherapy is a waste of time	6.3	93.7	100
# Which of the following is good combination treatment for depression :			
A. Vitamin injections and increasing exercise	21.3	78.7	100
B. Psychosocial interventions and an antidepressant	4.7	95.3	100
C. An antipsychotic medication and a mood stabilizer	63.8	36.2	100
D. Hypnotherapy and relaxation	48	52	100
Total	35,9	64,1	100

The above table 4 describes the distribution of good and wrong answers to items regarding Knowledge among the participants. These items were relatively well answered as the average of participants who gives good answers is 64.1%.

However there are items that were highly scored with wrong answers.8 out of 35 items were wrongly answered by the majority of the participants. Many of these items are concerning the cause and risk factors for getting mental illness. These items are: “Masturbate excessively” with 67.7%, “Are sad and unhappy mostly” with 91.3%, “Have a busy and hectic lifestyle” with 69.3%, “Frequently complain of tiredness” with 66.1%, “Have a failed romantic relationship” with 85%, “Abnormal family” with 65.4

4.3 Level of existing attitudes among the participants

Table 5: The level of attitudes among the participants

		Attitudes			
		Negative NO (%)	**Positive** NO (%)	**Total** NO (%)	**P-value**
Gender	Female	1 (4.80)	20 (95.20)	21 (100)	0,236
	Male	15 (14.20)	91 (85.80)	106 (100)	
Age group	Less than 35 age	12 (15.40)	66 (84.60)	78 (100)	0,43
	Between 35 and 44	4 (8.90)	41 (91.10)	45 (100)	
	45 and above	0 (0.00)	4 (100)	4 (100)	
Marital status	single	13 (17.80)	60 (82.20)	73 (100)	**0,05**
	Married	3 (5.60)	51 (94.40)	54 (100)	
Medical grade	GP	15 (14.00)	92 (86.00)	107 (100)	0,265
	Specialist	1 (5.00)	19 (95.00)	20 (100)	
Working place	RH (1)	2 (8.30)	22 (91.70)	24 (100)	0,719
	PH (1)	2 (9.50)	19 (90.50)	21 (100)	
	DH(6)	12 (14.6)	70 (85.40)	82 (100)	
PG training country	Abroad	0 (0.00)	2 (100)	2 (100)	0,930
	Rwanda	1 (5.60)	17 (94.40)	18 (100)	
Medicine training country	Abroad	2 (4.30)	44 (95.70)	46 (100)	0,435
	Rwanda	14 (17.30)	67 (82.70)	81 (100)	
GP year of experience	From 1 to 4	14 (15.60)	76 (84.40)	90 (100)	0,285
	From 5 to 14	2 (5.70)	33 (94.30)	35 (100)	
	15 and above	0 (0.00)	2 (100)	2 (100)	
Specialist year of experience	From 1 to 14	1 (5.60)	17 (94.40)	18 (100)	**0,047**
	15 and above	1 (50.00)	1 (50.50)	2 (100)	
Dual practice	No	13 (16.70)	65 (83.30)	78 (100)	0,081
	Yes	3 (6.10)	46 (93.90)	49 (100)	
Dual practice facilities	None	13 (16.70)	65 (83.30)	78 (100)	0,129
	Private	3 (10.00)	27 (90.00)	30 (100)	
	Public	0 (0.00)	19 (100)	19 (100)	
Previous MH exposure	No	11 (20.80)	42 (79.20)	53 (100)	**0,019**
	yes	5 (6.80)	69 (93.20)	74 (100)	
Exposure type	Short term training < 4 weeks	5 (8.60)	53 (91.40)	58 (100)	0,477
	Long term training > 4 weeks	0 (0.00)	13 (100)	13 (100)	
	Mentorship by psychiatrist	0 (0.00)	3 (100)	3 (100)	
Knowledge	Sufficient knowledge	3 (2.90)	101 (97.10)	104 (100)	**0.000**
	Insufficient knowledge	13 (56.50)	10 (43.50)	23 (100)	
Total		**16 (12.60)**	**111 (87.40)**	127 (100)	

The above table 5 represents the distribution of attitudes level among demographics participants' characteristics. Respondent's attitudes level was divided in two categories. Those who score correctly above the half of attitudes' items are considered as having positive attitudes while those who scored less than that are considered as having negative attitudes. Among 127 participants, the majority with 111 (87.40%) were found to have positive attitudes whereas 16 (12.60%) are considered as having negative attitudes. With regard to demographic characteristics of the participants some among them have shown association with the attitudes level that was statically significant as their P-values were < .05, these characteristics were: participants' country of general medicine training with **P = 0.035**, year of experience for generalists with **P = 0.047**, previous exposure to mental health practice with **P = 0.019** and the level of attitudes with **P = 0.000** Other remaining demographics characteristics were found having any association with attitudes.

Table 6: Distribution of good and wrong answer regarding attitudes

Items	Wrong answer (%)	Good answer (%)	Total
I just learn about mental health when I have to, and would not bother reading additional material on it	59.1	40.9	100
People with a severe mental illness can never recover enough to have a good quality of life	17.3	82.7	100
Working in the mental health field is just as respectable as other fields of health and social care	10.2	89.8	100
If I had a mental illness, I would never admit this to my friends because I would fear being treated differently	36.2	63.8	100
People with a severe mental illness are dangerous more often than not	65.4	34.6	100
Health care staff knows more about the lives of people treated for a mental illness than do family members or friends	40.9	59.1	100
If I had a mental illness, I would never admit this to my colleagues for fear of being treated differently	37	63	100
Being a health care professional in the area of mental health is not like being a real health care professional	11.8	88.2	100
If a senior colleague instructed me to treat people with a mental illness in a disrespectful manner, I would not follow their instructions	32.3	67.7	100
I feel as comfortable talking to a person with a mental illness as I do talking to a person with a physical illness	59.1	40.9	100
It is important that any health care professional supporting a person with a mental illness also ensures that their physical health is assessed	6.3	93.7	100
The public does not need to be protected from people with a severe mental illness	88.2	11.8	100
If a person with a mental illness complained of physical symptoms (such as chest pain) I would attribute it to their mental illness	16.5	83.5	100
General practitioners should not be expected to complete a thorough assessment for people with psychiatric symptoms because they can be referred to a psychiatrist	24.4	75.6	100
I would use the terms 'crazy','nutter, mad' etc. to describe to colleagues people with a mental illness who I have seen in my work.	10.2	89.8	100
If a colleague told me they had a mental illness, I would still want to work with them	22.8	77.2	100
Total	**33,7**	**66,3**	100

The above table 6 describes the distribution of good and wrong answers to items regarding attitudes among the participants. They were relatively well answered as the average of participants who gives good answers is 66.3%.

However, 4 out of 16 items were wrongly answered by the majority of the participants such as "The public does not need to be protected from people with a severe mental illness" with 88.2%, %, "People with a severe mental illness are dangerous more often than not" with 65.4%, "I just learn about mental health when I have to, and would not bother reading additional material on it" with 59.1% and "I feel as comfortable talking to a person with a mental illness as I do talking to a person with a physical illness" 59.1%.

4.5 Factors associated to knowledge

Table 7: Variables associated to knowledge

Variables	Coefficient	Test	**P-Value**
Age	-1.042	3.306	***.006***
GP experience Years	.146	.533	.604
Specialist experience Years	-1.022	-3.723	***.003***
Dual practice	-1.506	-1.168	.265
Previous MH exposure	.293	.265	.796
Marital status	1.024	.676	.512
Level of attitude	1.059	5.405	***.000***

Table 7: The multiple linear regression analysis was employed also to analyze the factors associated with the knowledge among physician and results show that 3 factors were found having strong association with knowledge as their P-values are less than the level of significance of 5% (P-value < .05). These factors are respectively, participants age with **P-value = .006**, specialists years of experience with **P-value = .003** and the level of attitude with **P-value = .000**. This implies that they are significant and they influence the knowledge. We found also that these factors may influence the knowledge differently. The age **(r=-1.042)** and the specialist years of experience (**r=-1.022**) were influencing negatively the knowledge whereas the level of attitudes **(r=1.059)** influences positively the level of knowledge. This means that the more physicians get older and specialists gain in experiences, the more they lose their knowledge regarding mental illness while the more they have positive attitudes, the more the present adequate knowledge.

4.6 Factors associated to attitudes

Table 8: Variables associated to attitudes

Variables	Coefficient Tests		**P-value**
Age	-.643	-2.200	***.048***
Years of experience as generalist	-.071	-.322	.753
Years of experience as specialist	-.666	2.599	***.023***
Dual practice	1.103	1.068	.307
Previous MH exposure	-.127	-.144	.888
Marital status	-1.601	-1.408	.185
Level of knowledge	.669	5.405	***.000***

In the above table (8), we use also the multiple linear regression analysis to assess the association between different variables with attitudes level. The results show that some variables are significant while others are not. Among those are significant, we identified age of the participants **P-value = .048**, years of experience as specialist physician **P-value = .023** and level of knowledge **P-value = .0000**. That's implies that there are significant and there are having great impact on level of attitude. Since the study aimed at identifying factors associated at attitude regarding mental illness among non-psychiatric physicians working in public hospitals in the Eastern Province in Rwanda, this finding was that the significant factors are age, Years of experience as specialist physician and Years of experience as specialist physician.

Chapter 5 : DISCUSSION

We conducted this study to assess existing knowledge and attitudes regarding mental illness among physicians working in public hospitals in Rwanda.

In total, 127 physicians participated in the study and majority were general practitioners 84.7% whereas a similar study done in Nigeria reported different results where majority of participants were specialists (Adewuya & Oguntade, 2007) . The difference may be explained by medical education system and public health structure that are not similar in both countries. In Rwanda, medical specialty training was initiated last decade and that GP were the corn stone in managing patients in different domain (Cancedda et al., 2018).

The assessment of knowledge and attitudes among participants show promising results as the majority of the participants scored greater than 50% which was the cut point determining those who have either positive attitude or sufficient knowledge. Moreover, 81.9% of participants show to have sufficient knowledge regarding mental illness while 87.4% reported positive attitude. This is consistent with some previous studies that report the existence of relative knowledge and attitudes (Spagnolo et al., 2018) while there other studies reporting different findings (Disease et al., 2020). However, despite these positive results, findings pointed out some knowledge discrepancy among participant's physicians regarding mental illness risk factors and causes as some items regarding risk factors and causes about mental illness were wrongly responded by the majority of physicians, this was proved by the fact that some participants (18.1%) reported God punishment as cause of mental illnesses. Similar scenarios are also found previously in Lahore (Haddad et al., 2016) and Nigeria (Adewuya & Oguntade, 2007). Different researches reported that undergraduate program and time allocate for psychiatry is not enough to give sufficient knowledge to physicians hence, they advocate for its reinforcement (Aruna et al., 2016). Furthermore, these findings are not different from many which were done worldwide that reported gaps in knowledge about mental illness (James et al., 2012) (Ndetei et al., 2011)

Once again, despite that study shows also that participants have positive attitude regarding mental illness, it pointed out persisting misconception regarding mental illness as some attitude items of the questionnaire have been wrongly answered by the majority of participants: 88% of participants express that "mental illness public do need to be protected

from persons with mental illness", while 65.4 % reported that "persons with mental illness are dangerous" and 59.1% answered that they "just learn about mental health when they have and would not bother reading additional on it", whereas others 59.1 % feel that they are not comfortable when talking with to a person with mental illness. Similar scenarios were reported in studies done in Cameroun and in Bangalore (Mulango et al., 2018), (Cowan et al., 2012) that highlighted the existence of some traits of negative attitudes that are found mainly in general public. However these are in contrast with those found in western countries (Fleury et al., 2012).

In our study we found that age, specialists years of experience have a strong relation as their P-value were statistically significant respectively with (P =.006, r-1.042) and (P =.003, r =-1.022) The same variables, age, specialist experience years have presented also a strong relation which is statistically significant with the level of attitudes respectively (P = .048, r = -.643) and (P = .023, r = -666.). Findings in previous studies are also divergent. Some are consistent with these results and others are different. A research done in Latino Americans countries reported that there was no correlation between the age either the years of experience with attitudes and knowledge (Rojas Vistorte et al., 2018) whereas others done in Hong Kong and Australia revealed the opposite. Report from study done in Taiwan revealed that physician's young age was highly linked to good knowledge and adequate attitudes regarding depression which is the major mental illness (Liu et al., 2008) while a study in Ethiopia were not consistent with ours (Mu, 2013).

This finding could be explained by the fact that a lengthy experience in domain other than mental health discourages health professionals to become familiar with and accepting caring mental patients. This finding could serve as a basis for intervention in this field by targeting to increase mental health literature towards the less experienced

Chapter 6 : CONCLUSION, LIMITATIONS AND RECOMMENDATION

6.1 Conclusion

The study reports that the majority of physicians who were assessed have globally enough knowledge and positives attitudes regarding mental illness and that associated factors which were statically significant were the age, the previous exposure to mental health experience and the duration of specialist experience. The study points out also a positive relation between knowledge and attitudes. The results show that many physicians who have sufficient knowledge have also positive attitude regarding mental illness and reciprocally. However, the study find out the existence of certain discrepancy among some physicians concerning the knowledge and attitudes which reflect persistent gap of knowledge and the misconception regarding mental problems and that may respectively interfere with an adequate management of mental illness and exacerbating the stigmatizing attitudes.

6.2 Limitations

There are some limitations that we can note and that could affect the results of this study: First, the use of instruments validated in other countries may not allow for measurement of culture- specific aspects of attitudes since attitudes measures cannot exclude social desirability bias or self-report bias. Second, the study has not used literally the same instruments as those used in previous studies since we adapted with our context and this may influence comparison of the results with those of previous studies. Third, the expected population was not obtained after Ngarama Hospital failed to cooperate due to logistic reasons.

6.3 Recommendations

Since the results point out some existing discrepancies concerning knowledge and attitudes among physicians, our recommendations will be addressed to:

The University of Rwanda:

- To review curriculum concerning medical student and strengthen knowledge by increasing time dedicated to psychiatry course and the time dedicated to clinical rotations in psychiatry service.
- To elaborate a student's community based program for sensitization regarding mental health in order to tackle with stigma or negative attitudes.
- Carry studies assessing MH literacy among medical students that would figure out of the existing gap.

The Ministry of Health

- To work on the development of MH policies that will focus on the increasing MH literacy among health professionals
- To reinforce the existing program within the RBC for continuous training for health professionals and particularly physicians about mental health and elaborate an agenda for a continuous assessment about knowledge and attitudes regarding mental illness.
- To encourage and support logistically MH specialists in organizing more CPD sessions to non-MH professional
- Carry out further survey at national level and widen the study by including other health professionals.

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APPENDICES

Questionnaire English

DEMOGRAPHIC INFORMATIONS			
Gender	F		
	M		
Year of birth			
Marital status	Single		
	Married		
	Divorced		
	Widow		
	Divorced and widowed		
Medical grade	General physician		
	Specialist physician		
Country of general medicine training			
Country of post graduate training			
Years of clinical experience as general physician (apply to specialist also)			
Years of experience as specialist physician			
Place of working			
Do you do a Dual practice,	NO		
	YES	Public	
		private	
Have you ever had exposure to mental practice before	NO		
	YES	Short term training < 4weeks	
		Long term training > 4weeks	
		Mentorship by psychiatrist	

QUESTIONS ASKED		
I. ATTITUDES	**YES**	**NO**
1. **I just learn about mental health when I have to, and would not bother reading additional material on it.**	**0**	**1**
2. **People with a severe mental illness can never recover enough to have a good quality of life.**	**0**	**1**
3. **Working in the mental health field is just as respectable as other fields of health and social care.**	**1**	**0**
4. **If I had a mental illness, I would never admit this to my friends because I would fear being treated differently.**	**0**	**1**
5. **People with a severe mental illness are dangerous more often than not.**	**0**	**1**
6. **Health care staff knows more about the lives of people treated for a mental illness than do family members or friends.**	**0**	**1**
7. **If I had a mental illness, I would never admit this to my colleagues for fear of being treated differently.**	**0**	**1**
8. **Being a health care professional in the area of mental health is not like being a real health care professional.**	**0**	**1**
9. **If a senior colleague instructed me to treat people with a mental illness in a disrespectful manner, I would not follow their instructions.**	**1**	**0**
10. **I feel as comfortable talking to a person with a mental illness as I do talking to a person with a physical illness.**	**1**	**0**
11. **It is important that any health care professional supporting a person with a mental illness also ensures that their physical health is assessed.**	**1**	**0**
12. **The public does not need to be protected from people with a severe mental illness.**	**1**	**0**
13. **If a person with a mental illness complained of physical symptoms (such as chest pain) I would attribute it to their mental illness**	**0**	**1**
14. **General practitioners should not be expected to complete a thorough assessment for people with psychiatric symptoms because they can be referred to a psychiatrist.**	**0**	**1**
15. **I would use the terms 'crazy','nutter, mad' etc. to describe to colleagues people with a mental illness who I have seen in my work.**	**0**	**1**
16. **If a colleague told me they had a mental illness, I would still want to work with them.**	**1**	**0**
II. KNOWLEDGE	**YES**	**NO**
17 Does the risk of psychiatric problems increase in people who_____		
A .Have less sexual desire	**0**	**1**
B .Masturbate excessively	**0**	**1**
C .Are sad and unhappy mostly	**0**	**1**
D .Have a busy and hectic lifestyle	**0**	**1**

E .Frequently complain of tiredness	**0**	**1**
F .Have a failed romantic relationship	**0**	**1**
G .Have a traumatic childhood	**1**	**0**
H .Have lot of tensions	**1**	**0**
18 Are older people less prone to mental disorders	**0**	**1**
19 Children do not suffer from psychiatric problems	**0**	**1**
20 Women are less prone for psychiatric disorders	**0**	**1**
21 Lower socioeconomic class increases risk of having psychiatric disorders	**1**	**0**
22 Higher education or high IQ increases risk for psychiatric disorders	**0**	**1**
23 Psychiatric disorders are due to _____		
A. Genetic reasons	**1**	**0**
B. Neurotransmitter imbalances	**1**	**0**
C. Abnormal family	**0**	**1**
D. God's punishment for past sins	**0**	**1**
E. Social circumstances	**0**	**1**
F. Poor nutrition	**0**	**1**
G. Polluted atmosphere	**0**	**1**
H. Loss of seminal/genital fluids	**0**	**1**
24 In your opinion, psychiatric disorders are _____		
A. Untreatable	**0**	**1**
B. As well treated by faith healers as psychiatrists	**0**	**1**
C. Improved by leaving patient alone	**0**	**1**
D. Improved by change in environment	**1**	**0**
E. Improved by increasing awareness toward emotions	**1**	**0**
F. Treatable by a psychiatrist	**1**	**0**
25 According to you, psychiatric disorders are _____		
A. Only relieved, not cured using medicines	**0**	**1**
B. Less disabling than the treatment itself	**0**	**1**
26 According to you, in the treatment of psychiatric disorders _____		
A. Psychotherapy is an essential part for all disorders	**1**	**0**
B. Psychotherapy is a waste of time	**0**	**1**
27 Which of the following is a good combination treatment for depression?		
A. Vitamin injections and increasing exercise	**0**	**1**
B. Psychosocial interventions and an antidepressant	**1**	**0**
C. An antipsychotic medication and a mood stabilizer	**0**	**1**
D. Hypnotherapy and relaxation	**0**	**1**

Questionnaire French

Sexe	Homme	
	Femme	
Age		
Etat civil	Célibataire	
	Marié-e	
	Divorcé-e	
	Veuf-ve	
	Veuf-ve et divorcé-e	
Diplôme médicale	Médecine générale	
	Spécialiste	
Pays de formation de médecine générale		
Pays de formation de spécialité		
Années d'expérience médecine générale		
Années d'expérience spécialiste		
Lieu de travail		
Auriez-vous une pratique clinique ailleurs qu'à l'hôpital actuel ?	NON	
	OUI	En public
		En privée
Déjà une expérience avec la santé mentale	Formation brève < 4 semaines	
	Formation au long court > 4 semaines	
	Mentorship par un psychiatre	

QUESTIONS POSÉES		
I. ATTITUDES	**OUI**	**NON**
1. Je me renseigne sur la santé mentale quand je le dois, et je ne prendrais pas la peine de lire des informations supplémentaires à ce sujet.	**0**	**1**
2. Les personnes atteintes d'une maladie mentale grave ne peuvent jamais récupérer suffisamment pour avoir une bonne qualité de vie.	**0**	**1**
3. Travailler dans le domaine de la psychiatrie est tout aussi scientifique que les autres domaines de la médecine	**1**	**0**
4. Si j'avais une maladie mentale, je ne l'avouerais à aucun de mes amis par peur d'être traité différemment.	**0**	**1**
5. Les personnes atteintes d'une pathologie mentale sévère sont plus dangereuses qu'autrement.	**0**	**1**
6. Les psychiatres connaissent mieux la vie personnelle des personnes traitées pour maladie mentale que les membres de leur famille ou leurs amis.	**0**	**1**
7. Si j'avais une maladie mentale, je ne l'admettrais jamais à mes collègues de peur d'être traité différemment.	**0**	**1**
8. Être psychiatre n'est pas comme un vrai médecin.	**0**	**1**
9. Si un psychiatre me chargeait de traiter les personnes atteintes d'une maladie mentale de manière irrespectueuse, je ne suivrais pas ses instructions.	**1**	**0**
10. Je me sens aussi à l'aise de parler à une personne atteinte d'une maladie mentale que de parler à une personne atteinte d'une maladie physique.	**1**	**0**
11. Il est important que tout médecin prenant en charge une personne atteinte d'une maladie mentale évalue également son état de santé physique	**1**	**0**
12. Le public n'a pas besoin d'être protégé des personnes ayant une maladie mentale sévère.	**1**	**0**
13. Si une personne atteinte d'une maladie mentale se plaignait de symptômes physiques (comme une douleur thoracique), je l'attribuerais à sa maladie mentale	**0**	**1**
14. On ne devrait pas s'attendre à ce que les médecins généralistes effectuent une évaluation approfondie des personnes présentant des symptômes psychiatriques car ils peuvent être référés à un psychiatre.	**0**	**1**
15. il pourrait m'arriver d'utiliser les termes «fou», «dingue, cinglé», etc. pour décrire des personnes ayant une maladie mentale que je vois dans mon travail.	**0**	**1**
16. Si un collègue me disait avoir présenté une maladie mentale, je voudrais continuer à travailler avec lui.	**1**	**0**

II. LES CONNAISSANCES	OUI	NON
17. Le risque de problèmes psychiatriques augmente-t-il chez les personnes qui_____		
A .Ont moins de désir sexuel	**0**	**1**
B. se Masturbent excessivement	**0**	**1**
C. Sont surtout tristes et malheureux	**0**	**1**
D. ont un style de vie occupé et mouvementé	**0**	**1**
E. Se plaignent fréquemment de fatigue	**0**	**1**
F. ont raté une relation amoureuse romantique	**0**	**1**
G. ont eu une enfance traumatique	**1**	**0**
H. ont beaucoup de tensions	**1**	**0**
18. Les personnes âgées sont-elles moins sujettes aux troubles mentaux	**0**	**1**
19. Les enfants ne souffrent pas de problèmes psychiatriques	**0**	**1**
20. Les femmes sont moins sujettes aux troubles psychiatriques	**0**	**1**
21. Une classe socioéconomique inférieure augmente le risque de troubles psychiatriques	**1**	**0**
22. Un enseignement supérieur ou un QI élevé augmente le risque de troubles psychiatriques	**0**	**1**
23. Les troubles psychiatriques sont dus à _____		
A. Raisons génétiques	**1**	**0**
B. Déséquilibres des neurotransmetteurs	**1**	**0**
C. Famille anormale	**0**	**1**
D. La punition de Dieu pour les péchés passés	**0**	**1**
E. Circonstances sociales	**0**	**1**
F. Mauvaise nutrition	**0**	**1**
G. Atmosphère polluée	**0**	**1**
H. Perte de fluides séminaux / génitaux	**0**	**1**
24. À votre avis, les troubles psychiatriques sont _____		
A. Non traitable	**0**	**1**
B. Aussi bien traité par les guérisseurs que par les psychiatres	**0**	**1**
C. Amélioré en laissant le patient seul	**0**	**1**
D. Amélioré par le changement d'environnement	**1**	**0**
E. Amélioré en augmentant la sensibilisation aux émotions	**1**	**0**
F. Traitable par un psychiatre	**1**	**0**

25. Selon vous, les troubles psychiatriques sont _____		
A. Seulement soulagé, non guéri en utilisant des médicaments	**0**	**1**
B. Moins handicapant que le traitement lui-même	**0**	**1**
26. Selon vous, dans le traitement des troubles psychiatriques _____		
A. La psychothérapie est un élément essentiel pour tous les troubles	**1**	**0**
B. La psychothérapie est une perte de temps	**0**	**1**
27. Lequel des éléments suivants est un bon traitement combiné pour la dépression?		
A. Injections de vitamines et augmentation de l'exercice (physique)	**0**	**1**
B. Interventions psychosociales et un antidépresseur	**1**	**0**
C. Un médicament antipsychotique et un stabilisateur d'humeur	**0**	**1**
D. Hypnothérapie et relaxation	**0**	**1**

English Consent form

You are invited to participate in the research entitled:

Mental illness: Knowledge, attitudes and perceptions among non-psychiatric physicians working in peripheral hospital (district and provincial) in Rwanda.

This research is done by **Dr MUNYONGE Ulimwengu** as partial fulfillment of requirements for a **degree of Mmed Psychiatry** at the **University of Rwanda**. This study has been approved by the Department of Psychiatry, within the faculty of Medicine, at the College of Medicine and Health Sciences (CMHS), University of Rwanda, by the Institutional Review Board at CHMS and by the Ethic committee at the hospital you are working.

The findings of the research will be used for evidence-based intervention in the scope of promotion and development of mental health care at the level of primary care in Rwanda.
This is a cross-sectional study, which will use a self-completed questionnaire to collect information related to your **knowledge, attitudes and perceptions regarding mental illness**. The questionnaire that you will complete will be anonymized so that your responses will not be tracked in any way after the study.

The participation in the study is voluntary and there is no foreseeable risk or inconvenience associated with participating in the research. Your participation will cover a period of 2 weeks from the day you signed this consent form and you are free to decline your participation at any time during this process of the research.

The individual feedback will not be provided but you will have access to the findings from the study at the time of dissemination of results.

We provide for you a telephone airtime equivalent to 2000RWF. No other form of compensation will be provided.

If you are interested for participating to the research, I would be grateful if you would sign this research consent form and date it.

Date: ----------/----------/----------, Signature: ----------

Thank you for considering taking part in the study. Please let me know if you need more information related to this research by contacting me at 0788473856 or by contacting the Institutional Review Board (IRB) secretary (07885-63312).

THANKS

French consent Form

Vous êtes invités à participer à la recherche intitulée:

Troubles mentaux: connaissances, attitudes et perceptions parmi les médecins non psychiatriques travaillant dans un hôpital périphérique (district et provincial) au Rwanda.

Cette recherche est effectuée par le **Dr MUNYONGE Ulimwengu** pour l'obtention du **diplôme de spécialisation en Psychiatrie** à l'Université du Rwanda. Cette étude a été approuvée par le Département de psychiatrie, au sein de la faculté de médecine, au « **Collège of Médicine and Heath Sciences, University of Rwanda** », par son comité d'éthique (Institutional ReviewBoard) et par le comité d'éthique de l'hôpital où vous travaillez.

Les résultats de la recherche serviront à une intervention fondée sur des preuves dans le cadre de la promotion et du développement des soins de santé mentale au niveau des soins primaires au Rwanda.
Il s'agit d'une étude transversale, qui utilisera un questionnaire auto-rempli pour recueillir des informations relatives à vos connaissances, attitudes et perceptions concernant les troubles mentaux. Le questionnaire que vous remplirez sera anonyme afin que vos réponses ne soient en aucun cas identifiées en cours ou après l'étude.

La participation à cette étude est volontaire et il n'y a aucun risque ou inconvénient prévisible associé. Votre participation couvrira une période de 2 semaines à compter du jour où vous avez signé ce formulaire de consentement et vous êtes libre de refuser votre participation à tout moment au cours de ce processus de la recherche.

Le feedback individuel ne sera pas fourni, mais vous aurez accès aux résultats de l'étude au moment de leur diffusion.

Une carte de recharge des unités téléphoniques communément appelées AIRTIMES équivalente à une somme de 2000 FRW vous sera délivrée. Aucune autre forme de compensation ne sera accordée.
Si vous vous trouvez l'intérêt de participer à cette recherche, je vous serais reconnaissant de bien vouloir signer ce consentement de participation et bien le dater.

Date: ---------- / ---------- / ---------- et signature : ----------

Nous vous remercions d'avance de votre accord de participer à l'étude. Veuillez me faire savoir si vous avez besoin de plus d'informations concernant cette recherche en me contactant au numéro de téléphone 0788473856. Veillez contacter aussi l'autorité de « Institutional Review Board » (IRB) au numéro de son secrétariat (07885-63312).

MERCI.

REPUBLIC OF RWANDA/REPUBLIQUE DU RWANDA

NATIONAL ETHICS COMMITTEE / COMITE NATIONAL D'ETHIQUE
Telephone: (250) 2 55 10 78 84
E-mail: info@rnecrwanda.org
Web site: www.rnecrwanda.org
Ministry of Health
P.O. Box. 84
Kigali, Rwanda.
FWA Assurance No. 00001973
IRB 00001497 of IORG0001100

26th June2020

Dr. ULIMWENGU Munyonge
School of Medicine and Pharmacy, CMHS, UR

Review Approval Notice: No. 901/ RNEC/ 2020

Your résearch protocol titled **"Mental illness: Knowledge and Attitudes among non-psychiatric physicians working in public hospitals in the Eastern Province of Rwanda"** has been approved by the Rwanda National Ethics Committee.

This decision is based on the attached IRB approval from the College of Medicine and Health Sciences dated on 17th June 2020.

Sincerely,

R.N.E.C

Date of Approval: 17th June 2020
Expiration date: 17th June 2021

Dr. Jean-Baptiste MAZARATI
Chairperson, Rwanda National Ethics Committee.

CMHS INSTITUTIONAL REVIEW BOARD (IRB)

Kigali, 17th/June/2020

Dr ULIMWENGU Munyonge
School of Medicine and Pharmacy, CMHS, UR

Approval Notice: No 132/CMHS IRB/2020

Your Project Title ***"Knowledge and attitudes Among Non-Psychiatric Physicians Working In Public Hospitals in the Eastern Province of Rwanda"*** has been evaluated by CMHS Institutional Review Board.

Name of Members	Institute	Involved in the decision		
		Yes	No (Reason)	
			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			
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 17th June 2020, **Approval has been granted to your study.**

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

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 17th June 2020

Expiration date: The 17th June 2021

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

REPUBLIQUE DU RWANDA
DISTRICT BUGESERA

ADEPR

HOPITAL NYAMATA
BP : 7112 Kigali
Tél : 0780637766
E-mail : nyamata.hospital@moh.gov.rw

07th JULY 2020

Ref No.341/2020

Dr Ulimwengu MUNYONGE
Mmed Psychiatry Resident Year IV
College of Medicine and Health Sciences

RE: Research Authorization

After reviewing your research proposal entitled: **"Mental illness: Knowledge and attitude among non-psychiatric physicians working in the public hospitals in the Eastern Province of Rwanda."**, required for completion of your Mmed Psychiatry training program ; the Nyamata Hospital Ethics Committee have decided to give you permission to conduct your study and research procedures.

The Ethics Committee finally recommends you to:

a. Ensure if consent forms are signed before interview and administration of questionnaires to the participants,
b. Ensure confidentiality of individual information,
c. Submit a final copy of your Research findings after completion of the study,
d. Consult Nyamata Hospital administration in case you need to publish the findings.

Yours sincerely.

Prepared by
Dr Cyrille NTAHOMPAGAZE
Chairperson Ethic Committee

Approved by
Dr William RUTAGENGWA
Director General Nyamata District Hospital

REPUBLIC OF RWANDA

Rwinkwavu, On 09th July 2020
N°495 / H.RWI / DG / 2020

ESTERN PROVINCE
KAYONZA DISTRICT
RWINKWAVU HOSPITAL
P.O. BOX: 048 NGOMA
Email: rwinkwavu.hospital@moh.gov.rw

To Dr. ULIMWENGU MUNYONGE
Mmed Pschiatry Resident Year IV
Tel: 0788473856

Dear Sir,

RE: Approval of conducting research within Rwinkwavu District Hospital

Reference is made to your letter dated on 26th May 2020 requesting for authorization of conducting a research in partial fulfilment of requirements for the degree of Mmed in Psychiatry Resident Year IV;

Considering the Review approval Notice: No 901/RNEC/2020 dated on 26th June 2020 from Rwanda National Ethics Committee for your research protocol;

Considering the approval notice: No 132/CMHS IRB/2020 dated on 17th June 2020 from College of Medicine and Health Sciences,UR granting you the approval of your study;

We take this opportunity to inform you that your request of conducting a research mentioned above has been favorably approved.

We wish you all the best and you are welcome.

Dr UWAYITU M. Esperance
Director General of Rwinkwavu Hospital

Cc:
-Director of Administration and Finance Unit at Rwinkwavu District Hospital
-Ag.Director of Medical and Allied Health Sciences Services Unit at Rwinkwavu D.Hospital
-Human Resource Officer at Rwinkwavu District Hospital

REPUBLIC OF RWANDA

Kiziguro, June 22nd, 2020

№..164..HOPKIZ/2020

EASTERN PROVINCE

GATSIBO DISTRICT

KIZIGURO DISTRICT HOSPITAL

P.O.BOX:53 RWAMAGANA

EMAIL:kiziguro.hospital@moh.gov.rw/hopitalkiziguro@yahoo.fr

To :Dr. ULIMWENGU MUNYONGYE

Re: Response to your letter

Dear Sir

Referring on your letter of the 16th *June* 2019 requesting for an authorization to conduct research in partial fulfillment of requirement for the degree of Mmed in Psychiatric at University of Rwanda, I inform you that you are allowed to conduct the said research as you have applied for it.

I wish you Success to your studies.

Sincerely,

MINISANTE KIZIGURO DISTRICT HOSPITAL

Dr. MBAYIRE Vedaste

Director General of Kiziguro District Hospital

REPUBLIC OF RWANDA MINISTRY OF HEALTH	RWAMAGANA PROVINCIAL HOSPITAL NR3, KIGALI-KAYONZA RD RWAMAGANA DISTRICT EASTERN PROVINCE PO BOX 06 RWAMAGANA Tel: 0252567783 E-mail: rwamagana.hospital@moh.gov.rw	Integrity Patient Centered Care Quality and safety Excellence Quality and Rapid services

Rwamagana, 2nd July 2020
N° 463/HOP/RGNA/2020

To: Dr Ulimwengu MUNYONGE
C/O : UR
Tel: 0788473856

RE: Approbation to carry out health research in Rwamagana Provincial Hospital

Dear Sir

Reference is made on your letter of 26th June 2020, requesting a permission to carry out research in Rwamagana Provincial Hospital, base on Ethics committee requirements, we are glad to inform you that the permission to carry out a research on "*Mental illness: Knowledge and Attitudes among non psychiatric physicians working in the public hospitals in the Eastern Province of Rwanda* ", is given to you. Therefore, you are requested to provide to Rwamagana Provincial Hospital a copy of your research findings at the end of your study.

Best regards.

Dr Utumatwishima J.Népo. Abdallah
Director General of Rwamagana Provincial Hospital

CI

- **Ethics committee Chair Person**

REPUBLIC OF RWANDA

MINISTRY OF HEALTH

EASTERN PROVINCE

NGOMA DISTRICT

KIBUNGO REFERRAL HOSPITAL

E-mail: Kibungohospital@gmail.com

KIBUNGO REFERRAL HOSPITAL INDEPENDENT ETHICS COMMITTEE (KRH_IEC)

Name of the applicant: Dr Ulimwengu MUNYONGE Kibungo, 23/06/2020

Address: University of Rwanda

Approval Notice: No1.5/2020**/Kibungo Referral Hospital Independent Ethics Committee/ 2020**

Your project entitled "**Mental illness: Knowledge and Attitudes among non-psychiatric physicians working in the public hospitals in the Eastern Province of Rwanda.**" has been evaluated by Kibungo Referral Hospital Independent Ethics committee members.

Name of members	Involved in the decision		
	Yes	no	
		Absent	Withdraw from the proceedings
Dr Christophe MPIRIMBANYI	√		
Adeo NSANZUBUHORO		√	
Genevieve MUHIMPUNDU	√		
Thadee NSANZUMUNYURWA	√		
MUKAMWIZA Rachel	√		

After reviewing your protocol during the IEC meeting of where quorum was met, approval letter has been granted to your study.

Please note that approval of the research protocol/proposal and consent form is valid for 12months and shall be renewed on request.

You are requested to respect the ethical principles, policy and procedures. At the end of your work, you are obliged to share the results of your research and recommendations to the Kibungo Referral Hospital Independent Ethical Committee before publication.

Sincerely,

Date of approval. /....23/06/2020

Expiration date: ..23../....06./....2021

Chairperson of KRH_IEC

KIBUNGO REFERRAL HOSPITAL
ETHICAL COMMITTEE

Dr MPIRIMBANYI Christophe

CC:

✓ - The applicant: Dr Ulimwengu MUNYONGE

- Administration-KRH