PREVALENCE AND FACTORS ASSOCIATED WITH POOR SLEEP QUALITY AND PATTERNS AMONG PATIENTS ADMITTED ON THE PSYCHIATRIC WARD AT KAMPALA INTERNATIONAL TEACHING HOSPITAL, BUSHENYI DISTRICT

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A RESEARCH REPORT SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF BACHELOR OF MEDICINE AND SURGERYOF KAMPALA INTRNATIONAL UNIVERSITY

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DECLARATION

I hereby declare that the work contained in this report is my own and has not been submitted to any other institution for any academic award. Information from other studies were properly referenced and any ideas that were not mine were adequately acknowledged and I therefore submit it in partial fulfillment for the award of bachelors of medicine and surgery

Signature…….. Date……..

ATEPO JOSHUA

APPROVAL

This research report was developed under my guidance and is ready to be submitted to the school of clinical medicine and dentistry for your consideration.

Signature……Date……

DR. JIMMY BEN FORRY (MBChB, MMed Psych)

SUPERVISOR

DEDICATION

This desertification is dedicated to my beloved parents Mr. Olet John S.Atepo and Mrs.Faima Olet , my brothers Owera Emmanuel and Okello Olet Ismail, Sister Atalla Rachael and my aunts Esther and Agnes Iliaki for their financial , economic and spiritual support during the course of my academic struggle. May the Almighty creator bless you.

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Fulfilling my needs and for keeping me alive to conduct this study.

TABLE OF CONTENT

LIST OF ABBREVIATIONS

PSQI	Pittsburgh Sleep Quality Index
KIU-TH	Kampala International University Teaching Hospital
DALYs	Disability Adjusted Life Years
SDs	Sleep Disorders

DEFINITION OF TERMS

Insomnia: It is a common sleep disorder that can make it hard to fall asleep, hard to stay asleep, or cause you to wake up too early and not be able to get back to sleep. You may still feel tired when you wake up.

Mental health: WHO defines mental health as "the state of wellbeing in which the individual realizes his/her own abilities, can cope with the normal stresses of life and can work productively and fruitfully to make a contribution to the community".

Mental illness: Mental and behavioral disorders are understood as clinically significant conditions characterized by alterations in thinking, mood (emotions) or behavior associated with personal distress and/or impaired functioning.

Sleep is a periodic, reversible state of cognitive and sensory disengagement from the external environment with a complex physiologic and behavioral process essential for rest, repair, well-being, and survival (Elsayed Mohsen, 2015) Or It is a natural process occurring in animals and human beings, which is a complicated state involving both behavioral and physiologic processes (Susan, & Patricia, 2014).

CHAPTER ONE: INTRODUCTION

1.0 Background

Globally, sleep disorders are very common in the general population but they are poorly identified: less than 20% of individuals with insomnia are correctly diagnosed and treated, despite the fact that a considerable proportion of the population is suffering from serious sleep disorders and requires medical attention (WHO, 2013). Sleep disorders are not restricted to any specific group of people, cultures, and regions but are found in people of all regions, all countries, and all societies. Sleep disorder is present at any point in time in the world. It was reported by WHO that one-fifth of teenagers under the age of 18 years suffer from emotional or behavioural problems with one in eight having a sleep disorder; among disadvantaged children, the rate is one in five. (Sobh, 2015).

Sleep disorders are common, affecting more than 25% of all people at some time during their lives (Patel, 2003). They are also universal, affecting people of all countries and societies, individuals at all ages, women and men, the rich and the poor, from urban and rural environments (Sobh, 2015).

Nearly one third of the general population in Africa complains of insomnia but a diagnosis is warranted in only 6% to 15% of the population. (WHO, 2013). In the sub-Sahara Africa, obstructive Sleep Apnea Syndrome often associated with insomnia or excessive sleepiness, is found in approximately 2% to 4% of the general population and has a higher prevalence in men than in women (Patricia. O, 2014).

Untreated insomnia often has repercussions on socio-professional or cognitive functioning of insomniacs. In industrialized countries, the prevalence of insomnia ranges between 10% and 48%, depending on the methodology and the measured time interval. However, few studies have examined the relationship between insomnia and mental disorder diagnoses (Patricia, 2014)

It has long been appreciated that sleep problems are common among those with mental/psychiatric disorders (American, 2000). Sleep problems are important for patients with psychiatric disorders as for all hospitalized individuals. . It is stated that the incidence of a sleep disorder in patients with psychiatric diagnoses varies between 50% and 80% (Lee, 2010).

A 2004 study estimated the number of Ugandans with mental health problems at 35% (Elsayed Mohsen, 2015). WHO identified a number of factors influencing mental health needs and services in the country, including the high prevalence of sleep disorders, significant groups of refugees and internally displaced persons, and the emigration of skilled medical workers, as well as poverty (WHO, 2004).

Unfortunately, despite the high prevalence, sleep disorders remain poorly identified; less than 20% of individuals with insomnia are correctly diagnosed and treated (Douglass, 2010). Good Sleep quality and patterns is still among the patients of mental illness hence there is need of my research to determine the prevalence of poor sleep quality and patterns as well as factors affecting them among patients admitted on psychiatry and metal health ward KIU-TH.

1.2 Problem statement

Sleep plays a prominent role in the quality of life of people with mental illness and good sleep is an indicative to good prognosis of the illness. People with mental illness are more prone to sleep disorders than their peers. People with Mental illness, have a higher prevalence of disorders involving; initiation and maintenance of sleep (Whiteford, 2013). sleep-wake transition, excessive sleepiness and arousal. Despite, having a high prevalence of MI in Uganda, there is a paucity of data that focuses on sleep disorders in MI, including a lack of prevalence estimates of sleep breathing disorder (SBD) in MI Sosso, E. (2017).

More so poor sleep can make people less receptive to positive emotions (Woodson, 2006) in turn making them feel down during the day. Poor sleep increases the risk of chronic illnesses

including: high blood pressure, diabetes, depression, cancer, heart attack and stroke (University of Oxford, 2016) and almost 4 in 5 long term poor sleepers suffer from low mood and are seven times more likely to feel helpless (Sleepio, 2012).This can be a vicious cycle with stress, anxiety, depression and poor mental health contributing to difficulties sleeping (Gordon, 2014).

A search for literature on factors affecting sleeping patterns among metal patients in Bushenyi district has proved to be futile. Thus establishing of a clear understanding of associated factors affecting poor sleep quality and patterns among patients admitted on psychiatry and metal health ward KIU-TH would help inform the development of appropriate interventions to address the needs of these patients and improve their quality of life.

1.3 Significance of the study

The prevalence of sleep disorders has been increasing among patients with mental disorders, with recent studies reporting sleeping disorders as the most common mental disorder among all mentally ill patients. Sleep disorders, which are independent risk factors of suicidal ideation and suicide attempts, are significantly correlated with productivity loss, high medical costs, impaired work performance, and frequent worker absence, and thus are potentially serious problems affecting the health of patients with mental illness. In previous studies, sleep disorders were shown to have a significant correlation with occupational stress. The aim of this study is to determine the associated factors affecting sleeping patterns among metal patients and its effects on sleep quality among patients admitted on the psychiatric ward at KIU-TH

1.4 Objectives

1.4.1 General objective

To determine the prevalence and factors associated with poor sleep quality and patterns among patients admitted on the psychiatric ward at KIU-TH

1.4.2 Specific objectives

1. To determine the prevalence of poor sleep quality and patterns among patients admitted on the psychiatric ward at KIU-TH
2. To determine the factors associated with poor sleep quality and patterns among patients admitted on the psychiatric ward at KIU-TH.

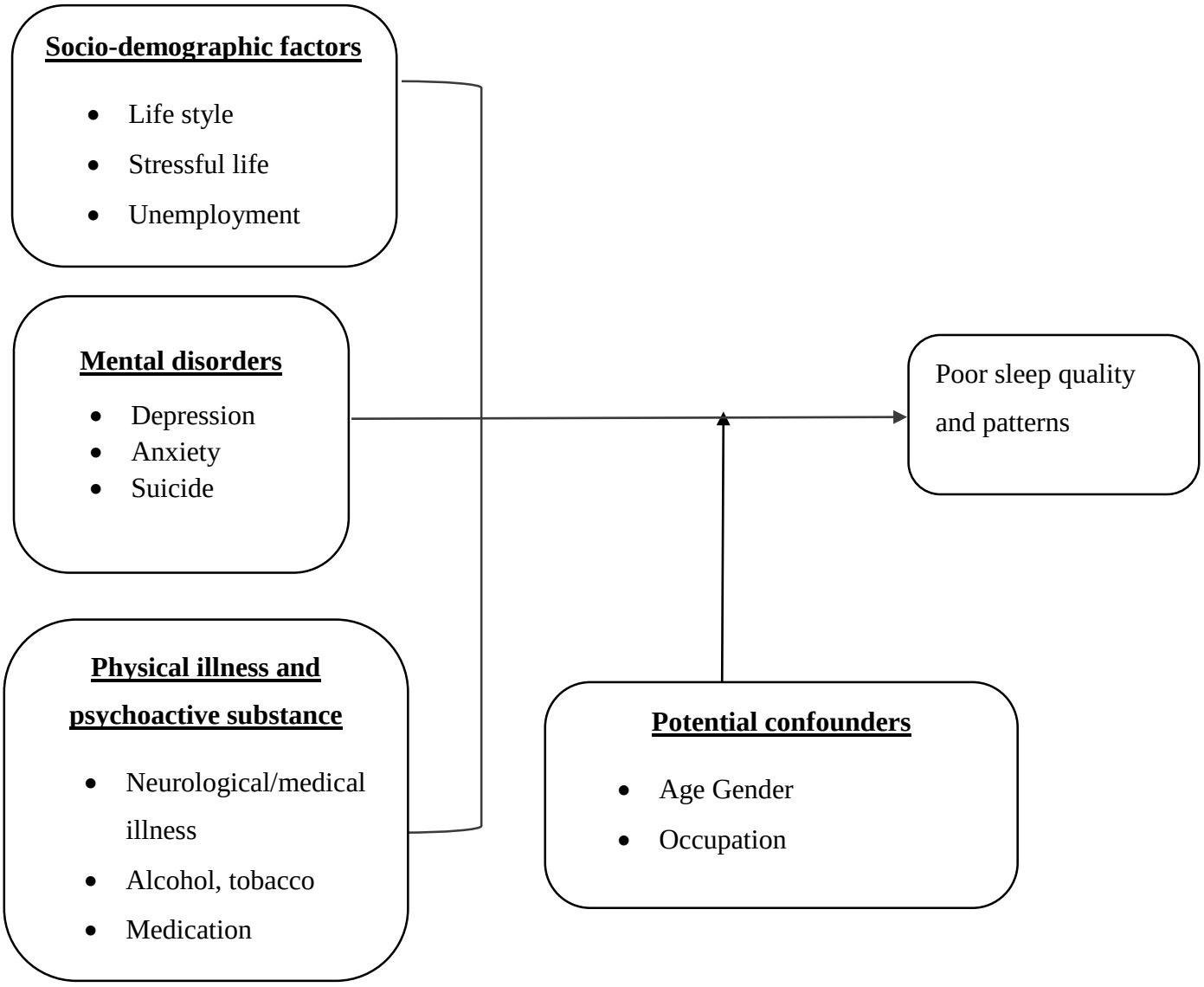
1.4.3 Research questions

1. What is the prevalence of poor sleep quality and patterns among patients admitted on the psychiatric ward at KIU-TH
2. What are the factors associated with poor sleep quality and patterns among patients admitted on the psychiatric ward at KIU-TH.

1.5 Justification of the study

Sleep disorder is a complex pervasive neurobehavioral and social condition accompanied by a wide range of comorbid conditions that can adversely affect the quality of life of patients. Sleep complaints are common among patients with psychiatric disorders. The aim of this study was to determine the prevalence of factors affecting sleep quality and patterns on sleep quality among patients admitted on the psychiatric ward at KIU-TH. These factors will be used by medical professionals to gain more knowledge and improve strategies for improving sleeping patterns of mental patients. The study will furthermore form a basis for more studies to be carried out in the future regarding the same topic and will also aid the government of Uganda in making policies regarding psychiatry and mental health.

1.6 Conceptual framework



CHAPTER TWO: LITERATURE REVIEW

2.1 Prevalence of poor sleep quality and patterns among psychiatric patients

The prevalence of sleep disorders in children and adolescents is 11-47 %. In another study, it has been reported that the prevalence of sleep disorders in children and adolescents is about 25% and 40% respectively. Most practical studies have shown that children and adolescents need an average of 9 hours of sleep during the night, but the results of several studies have shown that 45 % of children and adolescents sleep less than 8 hours (Douglass AB, 2015). The cause of excessive daytime sleepiness in these patients may be due to side effects of antiepileptic drugs or to other sleep disorders, poor control of seizures and inadequate sleep (Crespel et al., 2000; Khatami et al., 2006; Vignatelli et al,. 2006). There are limited data about prevalence of insomnia, obstructive sleep apnea and parasomnias in epileptic patients but the frequency of them was reported between 10-65% in obstructive sleep apnea, and 10- 33% in parasomnias (Vaughn and D'Cruz, 2003).

In general, most authors report a higher rate of insomnia among women. Based on eight studies, moderate/severe insomnia (men: 11.9%; women: 17.5%); all forms of insomnia (men: 28.7%; women 33.7%). Almost identical prevalence rates of current insomnia were found by Bixler et al. (10) among adults in Los Angeles (men: 32.3%; women: 32.1%). Among the 21-, 236), the medians of sex-specific prevalence rates of insomnia were as follows: mild insomnia (men:18.0%; women: 21.7- and 28-yr-olds in Zurich, there were also no significant sex differences in frequency of occasional, repeated brief or continued(Abd El-aziz Mohammed, 2015).

There are further similarities between the San Marino study and ours: Rates of depression and/or anxiety disorders as well as of insomnia increase until age 60. Beyond this age the percentage of insomniacs keeps rising, whereas the percentage of individuals complaining of depression or anxiety disorders decreases. Whereas in our study like in most community surveys (Kleinman A, 2013) an inverse relationship between socioeconomic status and psychiatric illness was found,

insomnia was not associated with social class.This is in contrast to the Los Angeles study (10) in which current complaints of insomnia occurred more frequently among individuals of lower socioeconomic status. Our results that moderate/severe insomnia was strongly related to mental and physical health problems of the respondents and their use of hospitals during the previous year corroborates those of (Bixler et al, 2010).

They found an overall prevalence of current or previous sleep disorders in adults of 52.1%. Specifically, they found a 42.5% prevalence of insomnia, 11.2% of nightmares, 7.1% of excessive sleep, 5.3% of sleep talking, and 2.5% of sleepwalking. These conditions were often chronic and usually started early in life. Insomnia was more frequent in older people, particularly older women, and in people of lower educational socioeconomic status. Insomnia, nightmares, and hypersomnia were correlated with more frequent general physical and mental health problems. (Flisher AJ, 2009).

Insomnia is more frequently noted amongst subjects with psychiatric diagnoses, especially major depressive disorders and anxiety disorders. Depressive disorders are present in 21-40% of patients of insomnia versus 0-1% of patients with no insomnia, and anxiety disorders in 13-24% of patients of insomnia versus 3-10% of patients with no insomnia Woodson SRJ (2006). In depressive disorders, sleep alterations are frequently noted: they are difficulties of initiating and maintaining sleep, decreasing proportion of slow-wave sleep, decreasing time of REM (rapid eye movement) sleep and REM sleep latency, and increasing density of REM sleep. Of these modifications, the last two ones seem to be specific for depression (Sleepio, 2012).
The relationships between sleep, aging and depression are more complex than previously noted. For example, differences between depressed and non-depressed subjects depend on the age of the population. (Dendukuri, 2013).

The prevalence of hypersomnia is lower than the insomnia's. It varies between 2 and 4%. Two specific aetiologies were looked at for sleep apnea syndrome and narcolepsy. These diagnoses are respectively found in 45% and 24% of hypersomniacs examined in American Sleep Centers.

Hypersomnias are objectived by the Multiple Sleep Latency Test, which measures the physiologic sleep tendency (Chen, 2014)

The prevalence of insomnia, defined as difficulties of initiating and maintaining sleep, is estimated between 9 and 31%. It is higher among women, elderly people, separated and divorced subjects, and low educational levels' groups.

2.1.1 Pittsburgh Sleep Quality Index (PSQI)

The Pittsburg sleep quality index (PSQI) is a self-report questionnaire that assesses sleep quality and quantity. The original version was designed to measure sleep reports over a one month interval (Buysse et al, 1989). The 19-iterm self-report questionnaire yields 7 component scores; subjective sleep quality, sleep latency, duration of sleep, habitual sleep efficiency, sleep disturbances, use of sleeping medication and daytime dysfunction.

The Pittsburgh sleep quality index (PSQI) was regarded to as an effective instrument used to measure quality and patterns of sleep. It differentiates “poor” from “good’’ sleep by measuring areas; subjective sleep quality, sleep latency, duration of sleep, habitual sleep efficiency, sleep disturbances, use of sleeping medication and daytime dysfunction over the last month. The client self-rates each of those areas of sleep. Scoring of answers is based on 0 to 3 scale, whereby 3 reflects the negative extreme of the likest scale. A sum of the scores of these areas shows a global score and a global sum of “5” or greater indicates a poor sleeper (Tsai et al, 2005)

2.2 Factors associated with poor sleep quality and patterns among psychiatric patients

Several disorders other than insomnia can lead to an insomnia complaint. For example, breathing-related sleep disorders such as sleep apnea or sleep hypoventilation account for 5% to 9% of insomnia complaints. Periodic limb movement disorders are found in about 15% of individuals complaining of insomnia. Neurological or medical conditions are observed in 4% to 11% of insomnia complaints. Poor sleep hygiene or environmental factors account for

approximately 10% of insomnia complaints. Insomnia associated with the use of a psychoactive substance account for 3% to 7% of insomnia complaints (Whiteford, 2013).

Studies have shown that between 30 and 60% of people with mental disorders also complain of insomnia. Some studies have shown that up to 80% of individuals with major depressive disorder suffer from insomnia.3-5 Four longitudinal studies have examined the relationship between the persistence of insomnia and the onset of mental disorders (University of Oxford, 2016).

The persistence of insomnia over time was associated with a likelihood of four to eight times higher of developing a mental disorder. In addition, people with no mental disorder who reported sleep disturbances had significantly more impairment of quality of life compared to people without sleep problems (Piperidou et al, 2008; Senol et al., 2007). Both nocturnal and daytime seizures appear to affect sleep architecture and sleep quality (Kotagal et al., 2008).

The interrelationship between sleep disorders and epilepsy has been described. Type of seizures, time of seizures and antiepileptic drugs may change sleep pattern and decrease sleep quality. In turn, epileptic patients that suffer from sleep disorders may have more difficulties in seizures control (*Bazil et al., 2013;* Szaflarski et al., 2004; Placidi et al., 2000).

People who complain of insomnia frequently reported being in poor health. Some studies have found that nearly half of those with insomnia symptoms have multiple persistent or chronic health problems. The associations most frequently reported are with upper airway diseases, rheumatic diseases, chronic pain and cardiovascular diseases (Dendukuri, 2013).

Several studies have observed that the use of tobacco, alcohol and antihypertensive drugs were significantly associated with insomnia symptoms. In these populations, alcohol was used as a means to promote sleep by about 40% of individuals with insomnia (De, 2010).

In the general population, the prevalence of disclosure in medicine and Diagnostic medical sonography increases linearly with age reaching nearly 50% among individuals older than 65

years. However, this linear increase is not universally found in studies evaluating disclosure in medicine or Diagnostic medical sonography accompanied with daytime consequences and in those measuring sleep dissatisfaction (Flisher, 2009).

Women are more likely than men to complain of disclosure in medicine or Diagnostic medical sonography daytime consequences, sleep dissatisfaction and to have insomnia diagnoses. Some studies have shown a high prevalence of insomnia in menopausal women compared to those in pre-menopause (Medik, 2015).

Several factors related to lifestyle are associated with an increased risk for insomnia in the general population. Such is the case of people who report having a very stressful life, unemployed, or shift workers and people sleeping in a bedroom with inadequate WHO. (2013).

CHAPTER THREE: METHODOLOGY

3.1 Study design

A cross-sectional study design was used by employing descriptive as well as quantitative methods of data collection and analysis.

3.2 Study area

The study was carried out at KIU-TH which is located in the town of Ishaka along the Mbarara-Kasese high way in Bushenyi district, south western Uganda. It's approximately 330km from Kampala, Uganda's largest city and capital.

3.3 Target population

The study was targeting all patients admitted on the psychiatric ward at KIU-TH.

3.4 Eligibility criteria

3.4.1 Inclusion criteria

- All patients 18 years and above admitted on the psychiatric ward at KIU-TH willing to take part in this study participated.
- All patients mentally ill admitted on the psychiatric ward at KIU-TH willing and consenting to take part in this study participated
- All patients with speaking and hearing ability admitted on the psychiatric ward at KIU-TH willing to take part in this study participated.

3.4.2 Exclusion criteria

- Critically mentally ill patients at the time of data collection were excluded from the study.
- Mentally ill patients still under sedation at the time of data collection were also excluded.

3.5 Variables

The poor sleep quality and patterns among patients admitted on the psychiatric ward at KIU-TH was the dependent variable of the study while the independent variables were; Socio-demographic factors such as: age, occupation, education level, marital status. Mental disorders, Life style, Physical illnesses and the use of psychoactive substances.

3. 6 Sample size determination

The sample size was determined by a table formulated by (Krejcie and Morgan, 1970). KIU-TH psychiatric ward receives about 20 patients averagely each month. Since the data collection period was two months, the researcher was supposed to use a sample of 36 respondents in the study

3.7 Sampling methods

Simple random sampling was done whereby potential participants were selected by researcher .Random sampling of every second patient was selected to take part in the research study.

3.8 Data collection tools

An interviewer administered questionnaire was used to identify the socio-demographic and other associated factors whereas the prevalence of poor sleep quality and patterns was determined by the study participants responding to inquiries in the PSQI.

3.9 Pilot study

A brief study was done to pretest the data collection tools and evaluate working condition and methods. This helped to minimize the possible errors during the research.

3.10 Data analysis and presentation

The data for prevalence and factors associated with poor sleep quality and patterns among patients admitted at KIU-TH was analyzed using SPSS and was presented in form of tables and graphs.

3.11 Data quality control

Data quality control involved use of textbooks and a completely filled questionnaire and a double entry of data by a staff on ward and a research assistant. Data was stored in a safe placed under lock and key and backed up on a password secured computer. Staff on the psychiatric ward was adequately consulted.

3.12 Ethical consideration

All identifying data were omitted from the collection tool and the final data and the consented research participants were interviewed in a secured comfortable room.

CHAPTER FOUR: DATA PRESENTATION

The sample size of 36 respondents was supposed to be used of which this was not met because some questionnaire was not answered well, some never wanted to take part and others were too ill. Thus of 36 respondents to take part the researcher used 33 participants.

4.2 Socio demographic results.

Table 1: *Socio demographic factors* ***of respondents***

Variable	n (%)
Age group	
18-23	7(21.2)
24 to 34	22(66.7)
35 and above	4(12.1)
Marital status	
Married	13(39.4)
Unmarried	20(60.6)
Education level of respondents	
Primary	10(30.3)
Secondary	8(24.2)
Tertiary	2(6.1)
University	9(27.3)
Didn’t go to school	4 (12.1)

Tribe of respondents	
Banyankole	18(54.2)
Baganda	7(21.2)
Bakiga	6(18.2)
Rwandese	2(6.1)
Occupation of respondents	
Employed	15(45.4)
Unemployed	12(36.4)
Student	1(3.0)

From the above ,those with the highest prevalence were between 24 to 34 years while the least being 35 years and above :the highest frequency was also among the married than the married :the table also showed that the Banyankole had the highest frequency and the least in Rwandese :the prevalence was highest with those of primary education and the least with tertiary education and finally the employed had the highest prevalence than the unemployed..

4.3 Prevalence of poor sleeping quality and patterns among patients admitted on psychiatric ward KIU-TH

4.3.1 Pittsburg Sleep Quality Index (PSQI)

Table 1: Table showing Pittsburgh Sleep Quality Index (PSQI)

Variable	(n)	PSQI Score	Mean PSQI score
Overall sleep quality			
Very good	6	0	1
Fairly good	12	1	
Fairly bad	2	2	
Very bad	2	3	
Subjective sleep quality			**1**
Period taken before falling asleep at night			
Less or equal to 15 minutes	3	0	1.5454
16-30 minutes	2	1	
831-60 minutes	3	2	
Greater than 60	2	3	
Cannot get sleep within 30 minutes			
Not during the past month	3	0	1.6364
Three or more times a week	6	3	
Sleep Latency			**1.5909**

Sleep duration			
Greater 7 hours	6	0	0.7272
6-7 hours	2	2	
5-6 hours	3	3	
Sleep duration			**0.7272**
Sleep efficiency (61.6%)			**3**
Have bad dreams			
Not during the past month	5	0	1.0909
Less than once a week	1	1	
Once or twice a week	4	2	
Three or more times a week	1	3	
Have pain			
Not during the past month	7	0	0.9091
Once or twice a week	2	2	
Three or more times a week	2	3	
Sleep disturbance			**1**
Taking medicine to sleep			
Not during the past month	5	0	1.4545
Once or twice a week	1	1	
Three or more times a week	3	3	

Sleep medication			**1.4545**
Having trouble staying a wake			
Not during the past month	7	0	0.7272
Less than once a week	2	1	
Three or more times a week	2	3	
Problem it has been to keep up enough enthusiasm to get this done			
No problem at all	6	0	1.0909
Only a very slight problem	1	1	
Somewhat of a problem	1	2	
A very big problem	3	3	
Daytime dysfunction			**0.9091**
GLOBAL SCORE PSQI			**9.6817**

From the table above the subjective sleep quality score was 1. “Period taken before falling asleep each night” and “cannot get sleep within 30 minutes” mean scores were used to get the sleep latency score which is 1.5909. The sleep duration score was 0.7272. The sleep efficiency score of 3 was obtained from (“total number of spent in bed/ total number of actually slept”) X100% which was 61.6%. “Having bad dreams” and “having pain” were used to get sleep disturbance score. Sleep medication had a score of 1.4545. “Having trouble staying awake” and “problem it takes respondents to keep up enough enthusiasm to get things done” was used to get day time dysfunction score which was 0.9091. A global score PSQI score was 9.6817 indicating “poor” sleep among the participants since its greater than 5.

4.3.2 Other determinants of poor sleeping quality and patterns among patients admitted on psychiatric ward KIU-TH

Table 2: Table showing other determinants of poor sleeping quality and patterns among patients

Variable	n (%)
Number of times respondents sleep in a day	
Two	9(27.3)
Many	19(57.5)
Don't know	5(15.2)
Period of sleep per day	
4 hours	1(3.0)
6 hours	2(6.1)
8 hours	5(15.2)
More than 10 hours	25(75.8)
Time of day respondents sleep	
Day	1(3.0)
Night	12(36.4)
Anytime	19(57.6)
Duration of sleep	
Short within 24 hours	9(27.3)

Extended >24 hours	16(48.5)
None	1(3.0)
Don’t know	7(21.2)
Things experienced while sleeping	
Night mare	17(51.5)
Sleeping talking	2(6.1)
Might mare and sleep walking	2(6.1)
Don’t know	12(36.4)
Monthly income	
1000-20000	14(42.4)
20001-100000	9(27.3)
100001 and above	9(27.3)
Don’t specify	1(3.0)
Things that disrupt respondents when sleeping	
Poor control of seizures	1(3.0)
Side effects of drugs	23(69.7)
Inadequate sleep	5(15.2)
Didn’t specify	4(12.1)

From table above, the prevalence of poor sleeping habits and quality among those who slept twice a day was highest in 37.5% and least in 27.3% :75.8% slept for more time with 15.2% for 8 hours , 6.1% for 6 hours and 3% for 4 hours :48.5%slept at any time of the day ,36.4% slept

during the day ,48.5% slept extensively ,27.3% slept for shorter than 24 hours :51.5% experienced night mares ,6.1% could sleep while talking and 6.1% slept while walking :42.4% earned salary between 1000 to 20000 Uganda shillings , 27.3% earned salary between 20000 to 100000 Uganda shillings and another 27.3% earned salary between 100001 Uganda shillings and above : 69.7% were disrupted by side effects drugs : 15.2% were disrupted by inadequate sleep and 3% were disrupted by poor control of seizures.

4.3 Factors associated with poor sleeping quality and patterns among patients admitted on psychiatric ward KIU-TH

Table 3: Table illustrating factors associated with poor sleeping quality and pattern among patients admitted on psychiatric ward KIU-TH

		number of times you sleep in a day			
		Two	**Many**	**none**	**Don't know**
Age of respondents	18-23	3(42.9%)	4(57.1%)	0	0
	24-34	6(27.3%)	11(50%)	0	4(18.2%)
	35 and above	0	3(75%)	0	1(25%)
Education level of respondents	Primary	3(33.3%)	5(55.6)	0	1(11.1)
	Secondary	2(25%)	6(75%)	0	0
	Tertiary	0	1(50%)	0	1(50%)
	University	4(44.4%)	4(44.4%)	0	1(11.2%)
	Didn't go to school	0	2(50%)	0	2(50%)
occupation of respondents	Employed	4(23.7)	5(38.5)	0	5(38.5%)
	Unemployed	4(100%)	6(66.7%)	0	0
	Student	1(33.3%)	2(66.7%)	0	0
marital status of respondents	Married	1(7.7%)	9(69.1%)	0	3(23.1%)
	Unmarried	8(42.1%)	9(47.4%)	0	2(10.5%)
Medical condition	chronic pain	1(50%)	1(50%)	0	0

poor hygiene practices	Yes	0	8(100%)	0	0
observed	No	1(100%)	0	0	0
use of psychoactive	Alcohol	4(50%)	3(37.5%)	0	1(12.5%)
substances	use of tobacco	2(40%)	2(40%)	0	1(20%)
	Antihypertensive	1(33.3%)	1(33.3%)	0	1(33.3%)
	alcohol and use of tobacco	1(9.1%)	10(90.9%)	0	0
metal disorder	Depression	F	8(50%)	0	3(18.8%)
	mood disorders	1(20%)	3(60%)	0	1(20%)
	schizophrenia	2(20%)	7(70%)	0	1(10%)
Lifestyle	stressful life	5(41.7%)	5(41.7)	0	2(16.7%)
	unemployed	3(21.4%)	9(64.3%)	0	2(14.3%)

From the table above, the highest number of patients who slept many times a day were from the age bracket of 24 to 34 years with the least being those of 35years and above : the highest was also in university level and the least number of patients who slept many times a day were those of tertiary education.: the unemployed also recorded the highest prevalence of sleeping many times a day than the employed :the prevalence of sleeping many times a day was highest among those patients who use both tobacco and alcohol and the least was in those who use antihypertensive :patients with schizophrenia had the highest prevalence of sleeping many times a day while patients who were diagnosed with mood disorders had the least prevalence. And finally all patients had poor sleep hygiene practices.

CHAPTER FIVE: DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Discussion

The global PSQI showed poor sleep quality in this study which agrees with Sleepio in 2010 where a high prevalence of 9 to 31% was estimated. The poor sleep quality and patterns show that insomnia is really a challenge. According to this study 75.8% slept for long hours that is more than 10 hours and (48.5%) slept extensively these were majorly disrupted sleep by side effects of drugs which agreed with Sobh D in 2015 who documented that the major cause of excessive sleeping is side effects of drugs.

This study also revealed that night mares affected 51.5% mental patients psychiatric ward at KIU-TH, sleeping talking, and sleeping walking also were faced by mental patients these same things were showed by Flisher AJ in 2009 were insomnia in adult was contributed to by night mares (11.8%), excessive sleeping(7.1%), sleeping talking(5.3%) and sleeping walking (2.5%). In this study poor sleep quality and patterns was mostly experienced by poor mental patients since many 42.4% earned low amount monthly that is 1000-20000 Uganda shilling. This makes what documented show meaning Bixler et al in 2010 that is insomnia is more frequent in individuals of lower socio economic status.

This study showed that poor sleep quality and pattern were mostly high in old ages which show some connection with a study by Flisher AJ in 2009 where he documented increases with linearly with insomnia. Disagreement come when those of 12-18 years having high percentage than those 18-34 years. According to this study all those observed with poor hygiene had poor sleep quality and patterns this agrees with White Ford HA in 2013 where it was documented that poor hygiene and environmental factors account for approximately 10% of insomnia complaints. Thus this study show that poor hygiene is really contributes much to Insomnia.

People who use both tobacco and alcohol were reflected having highest rate of insomnia (poor sleep quality and patterns) also individual substance such tobacco contributed 37.5% to having

poor sleep quality and alcohol contributed 33.3%. (De. G.U.I) in 2010 noted that alcohol, tobacco and antihypertensive are drugs significantly associated with insomnia symptoms. He further documented that 40% of individuals used alcohol to promote sleep.

According to this study schizophrenia majorly disrupt patients when sleeping. But Kotaga et al 2008 documented that schizophrenia appears to affect sleep architecture and sleep quality. These two studies show some connection. This study showed that rate of poor sleep quality and patterns was higher among the unemployed than those with stressful lifestyle. These two lifestyle factors that is unemployment and stressful lifestyle were suggested to increase insomnia by WHO in 2013. This two studies reveal that in general unemployment and stressful life increase insomnia.

5.2 Limitations of the study

The following challenges were encountered; uncooperative patients who refused to participate, language barrier, some patients were depressed.

- Uncooperative and depressed patients were dealt by not including them in the study
- Interviews and interpreters were used to carter for language barrier

5.3 Conclusion

There is generally high prevalence of insomnia (poor sleep quality and patterns) among patients admitted to KIUTH with a global PSQI score of 9.6817 compared with the standard PSQI score of 5 which is the maximum normal score.

Factors affecting sleep quality and patterns were side effects of drugs, low socioeconomic status, low education level, unemployment, old age, poor personal hygiene, alcohol use and tobacco smoking and patients diagnosed with schizophrenia were at higher risk of developing poor sleep quality and patterns.

5.4 Recommendations

The patients should be engaged in sporting activities or games in order to reduce redundancy that makes them resort to alcohol use, tobacco smoking and other drug abuse.

The staffs should embark on sensitization of both the patients and caretakers about the importance of personal hygiene to both physical and mental health.

Lastly, there should be more comprehensive research on poor sleep quality and patterns among psychiatric patients in order for the government to appropriately cater of the burden of mental illnesses.

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Appendix I: Questionnaire

SECTION A: Demographic data (Tick the preferred option)

Age

1.18_24 2.24-34 ☐

3.35 and above ☐

Education level

1. Primary ☐
2. Secondary ☐
3. Tertiary ☐
4. University ☐
5. Didn't go to school ☐

Occupation

1. Business ☐
2. Civil servant ☐
3. Peasant ☐
4. Others specify …….

Tribe

1. Banyankole ☐
2. Baganda ☐
3. Bakiga ☐
4. Others specify ……..

Marital status

1. Married ☐
2. Un married ☐

SECTION B: Prevalence (Tick your option)

Prevalence		
1.	How long do you sleep per day?	
A	4hrs	
B	6hrs	
C	8hrs	
D	More than 10hrs	
2.	Which time of day do you sleep?	
A	Day	
B	Night	
C	Anytime	
3.	Duration of sleep	
A	Short within 24 hours	
B	Extended >24 hours	
C	None	
4.	No. Of time you sleep in a day?	
A	Two	
B	Many	
C	None	
D	Don't know	
5.	Which of these do you experience while sleep?	
A	Night mare	
B	Sleeping talking	
C	Sleep walking	

D	Others specify	
6.	How much do you earn per month	
A	1000-20000	
B	20001-100000	
C	100001 and above	
7.	What disrupts your sleep?	
A	poor control of seizures	
B	side effects of drugs	
C	inadequate sleep	

SECTION C: Associated factors (Tick your option)

8.	Sleep apnea/sleep hypoventilation	
9.	Periodic limb movement disorders	
10.	Neurological or medical condition	
A	upper airway disease	
B	rheumatoid disease	
C	cardiac diseases	
D	chronic pain	
11.	Poor hygiene practices observed	
12	Use of psychoactive substances	
A	alcohol	
B	use of tobacco	
C	antipsychotis	
	antihypertensive	
13	Mental disorder	
A	anxiety disorder	

B	depression	
C	mood disorders	
D	schizophrenia	
E	epilepsy	
14	Life style	
A	stressful life	
B	unemployed	

SECTION D: Pittsburg sleep quality index (PSQI)

Instructions: the following questions relate to your usual sleep habits during the past month only. Your answers should indicate the most accurate reply for the majority of the day and nights in the past month. **Please answer all questions'**

1. During the past month what time have you usually gone to bed at night?_____
2. During the past month, how long (in minutes) has it usually takes you to fall asleep each night?_____
3. During the past month, what time have you usually gotten up in the morning?_____
4. During the past month, how many hours of actual sleep did you get at night? (this may be different than the number of hours you spent in bed)?_____

5. During the past month, how often have you had trouble sleeping because you…….	Not during the past month	Less than once a month	Once or twice a week	Three or more times a week
a. Cannot get to sleep within 30 minutes				
b. Wake up in the middle of the night or early morning				
c. Have to get up to use the bathroom				
d. Cannot breathe comfortably				
e. Cough or snore loudly				
f. Feel too cold				
g. Feel too hot				
h. Have bad dream				
i. Have pain				
j. Other reason(s), please describe				
6. During the past month, how often have you taken medication to help you sleep (prescribed or over the counter)				
7. During the past month, how often have you had trouble staying awake while driving, eating meals, or engaging in social activity?				

	No problem at all	Only a very slight problem	Somewhat of a problem	A very big problem
8. During the past month, how much of a problem has it been for you to keep up enough enthusiasm to get things				
	Very good	Fairly good	Fairly bad	Very bad
9. During the past month, how would you rate your sleep quality overall				
	No bed partner or room mate	Parter/room mate in other room	Partner in same room but not same bed	Partner in same bed
10. Do you have a bed partner or room mate				
	Not during the past month	Less than once a month	Once or twice a week	Three or more times a week
If you have a roommate or bed partner, ask him/her how often in the past month you have had:				
a. Loud snoring				
b. Long pauses between breaths while asleep				
c. Legs twitching or jerking while you sleep				
d. Episodes of disorientation or confusion during sleep				
e. Other restlessness while you sleep, please describe				

Appendix II: **List of tables**

Appendix III: Krejcie-Morgan table

Populasi (N)	Sampel (n)	Populasi (N)	Sampel (n)	Populasi (N)	Sampel (n)
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

Appendix IV: Work plan

ACTIVITY	MONTHS					
	February 2018	March 2018	April 2018		May 2018	
Proposal writing						
Approval of research proposal						
Data collection						
Data analysis						
Dissertation write up						
Report submission						

Appendix V: Budget

ACTIVITY	ITEM	QUANTITY	UNIT PRICE	TOTAL
Proposal writing	Stationary Typing Printing	2 reams 1	15,000 50,000	30,000 50,000 30,000
Data collection tools	Questionnaires Pens	150 10	300 500	50,000 5,000
Transport				60,000
Data collection	Two assistants		35,000	70,000
Data processing	Typing of dissertation Printing dissertation	1 3	20,000 50,000	20,000 150,000
TOTAL				465,000

APENDIX VI: MAP OF UGANDA

APPENDIX VII: MAP OF BUSHENYI DISTRICT