FACTORS ASSOCIATED WITH DEPRESSION IN ADOLESCENTS FROM THREE SELECTED HOSPITALS IN RWANDA

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Year 2017
FACTORS ASSOCIATED WITH DEPRESSION IN ADOLESCENTS FROM THREE SELECTED HOSPITALS IN RWANDA

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A dissertation submitted in partial fulfilment of the requirements for the degree of

MASTER OF SCIENCES IN NURSING (Pediatric Track)

In the College of Medicine and Health Sciences

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June, 2017
DECLARATION

I UWAMBAJIMANA Jocelyne do here by declare that this dissertation submitted in partial fulfillment of the requirements for the degree of MASTERS OF SCIENCE in NURSING at the University of Rwanda/College of Medicine and Health Sciences, is my original work and has not previously been submitted elsewhere. Also, I do declare that a complete list of references is provided indicating all the sources of information quoted or cited. This thesis was undertaken under the guidance and supervision of Dr MUKESHIMANA Madeleine and Prof Omolola Irinoye.

Date and signature of the student

Mrs. UWAMBAJIMANA Jocelyne
DEDICATION

I dedicate this project to all adolescents who may find themselves in difficult live situations and my experience depression
ACKNOWLEDGMENTS

The researcher wishes to acknowledge and thank the Rwanda government for sufficient security and Ministry of Health who provided the scholarship through the Human Resource for Health (HRH) Program.

Thanks to CMHS administrative staff, and the lecturers for their availability to guide me during this program. I strongly thank my supervisor and co-supervisor for their time, availability, and careful guidance and support that helped me to finish this project.

Thanks to my family who participated in this work in different ways; material, moral, psychological and financial. Thanks to all my family members, especially my husband, for their endurance and patience during my absence and when I was busy.

I thank all my classmates, friends, classmate, and colleagues at work and colleagues in church member for their encouragement and support to finish this research.

I thank the staff of the selected hospitals,(management staff and other staff), for gave me the permission of to do this research in their hospitals and for their contributions to the research. I also appreciate all the respondents who participated in the study.
ABSTRACT

Background:
Depression in adolescents is an important public health challenge that requires increased attention because of the observed difficulty in diagnosis as to treat efficiently despite the lifelong consequences. While there are several risk factors not all adolescents develop depression depending on their resilience and how the factors play out. Information is needed on those factors that actively contribute to depression in adolescents in Rwanda.

Aim. The main objective of this study is to document the factors that are associated with occurrence of depression in adolescents from three selected hospitals of Rwanda. Findings provided data on specific psychosocial, environmental and family related factors associated with depression among adolescents in selected hospitals in Rwanda.

Methods: Descriptive design was used. Quantitative approach was used to collect data from adolescents (10 years to 19 years) diagnosed with depression from three clinical sites. All the 50 adolescents with depression registered between 2015 and 2017 in the three hospitals who met the criteria were purposively selected. Interviewer administered structured questionnaire was used to collect data. Data was analysed using SPSS (IBM) version 20. Results are presented in summary tables and figures using the objectives of the study as guides to analysis and result presentation.
Results:

Findings showed that 30(60%) of the respondents were females. Majority of the respondents (88%) were in middle to late adolescents and 80% were in school and 72% were Christians. High percentages, over 50% subjects gave negative responses in all the test items in the psychosocial factors domain at the micro (personal), mezzo (family, friends) and exo (environmental) levels. High percentages of respondents also had family related factors that were negative and made them highly vulnerable to depression. There were no significant associations with sex and age categories when the psychosocial, environmental and family related factors were considered implying similar influence of all the negative experiences on occurrence of depression in adolescents irrespective of age and sex.

Conclusion:

Depression in adolescents is associated with negative personal psychosocial factors, family related relationship and socio-economic factors and environmental factors complementing one another. Screening for these identified factors will help in early detection of risks, preventive intervention and prompt diagnosis and treatment of depression in adolescents.

Keywords: Adolescents, Depression, Psychosocial factors, Environmental factors, Family related factors.
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LIST OF ACRONYMES AND ABBREVIATIONS

1. ADAA: Anxiety and Depression Association of America

2. BC: Before Jesus Christ

3. CMHS: College of Medicine and Health sciences

4. DSM-4: Diagnostic and Statistical Manual Disorder edition four

5. HIV/AIDS: Human Immune Deficiency Virus/Acquired Immunodeficiency Syndrome


7. NIMH: National Institute of Mental Health

8. PDD: Premenstrual Dysphoric Disorder

9. SAD: Seasonal Affective Disorder

10. UNICEF: United Nation Children’s Found

11. UR: University of Rwanda

12. WHO: World Health Organization
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CHAPTER ONE: INTRODUCTION

1.1 Introduction to the Chapter

There is “no health without mental health” (Prince, Patel, Saxena, Maj, Maselko, Phillips, and Rahman; (Prince et al, 2007), (Department of Health, 2011) and mental health is an essential indicator of health by the World Health Organization’s definition of health the significance of mental health and the neglected of this component of health over the years underscores the emergency of the 2013-2020 action plan by WHO for global use (World Health Organization, 2013). Attaining and sustaining mental wellbeing requires understanding the risk, taking action for prevention, prompt diagnosis and management of mental disorders across the life cycle.

Mental disorders according to WHO (2013), are a range of mental and behavioral disorders that fall within the International Statistical Classification of diseases and Related Health problems, Tenth Revision (ICD-10) and they include depression, bipolar affective disorder, schizophrenia, anxiety disorder, dementia, substance abuse disorders, intellectual disabilities, developmental and behavioral disorders (WHO 2013:6). DSM-IV and ICD-10 explained depression as mental problem or mental condition which is characterized by loss of interest of living and loosing hop, lack of energy and accomplishment of activity. (Cesar et al., 2013, p. 5).

The onset of mental, disorder especially depression, could be in childhood and adolescence and the burden would vary. Depression is one of the major mental disorders with high disease burden that could occur at different stages of the life cycle. In childhood depression, may not be diagnosed because it may confuse with developmental stages and change of endocrine system. in adolescence depression has a gender dimension with higher prevalence in female than male and high in adulthood in female than male also(Cesar et al., 2013:11).

According to Naus et al (2015) adolescents have an increased risk of suffering from depression and do not like to consult mental health services which may be the cause of delaying consultation with mental health professionals. Adolescents go to health care provider presenting physical symptoms, which may cause error in making diagnosis, or be confusing during consultation even
if those adolescents are suffering from depression. Also, adolescents may consult health care providers who are not specialist in mental health because of stigma or fear that others may be aware that they have mental problems (Naus et al., 2015). Essentially, adolescents may not even recognise their depressive symptoms as mental disorder.

Risks of depression in all stages of life are related to biological factors, personality characteristics, social conditions, and developmental characteristics but adolescents are more exposed to these factors and other factors such as substance use, early responsibilities and being orphan. In this study the researcher investigated the factors associated with diagnosis of depression among adolescents attending selected hospitals in 2017. In this first chapter the investigator presents the background information on depression worldwide, in Africa and in Rwanda. The nature of problem is stated, the aim, the objectives, significance of the study are presented. The key terms in the study are also operationally defined.

1.2 Background

Depression is a disease that affects mental functioning and causes mood disorder of person. According to Lorenzo et al (2016) depression is a mental disorder characterized by loss of interest of being, mood disorder, bad feeling and everyday misery which is diagnosed as depression if symptoms persist in long period (Lorenzo et al, 2016,p15).

Thomas et al., (2014,p,7) summarized the history of the understanding of depression and observed that depression has being a health issue in the history of human beings. According to them, some referred to depression as melancholia characterized by mental anguish, and distress with dejection, silence, animosity, longing for death, suspicion and weeping making it difficult differentiate the two from each other.

Thomas et al (2014) further observed that generally persons with mental diseases were considered as persons who have problems from spiritual not physical problems, such persons were treated with prayers and were considered capable of contaminating others with their madness. Depression was latter associated with psychological and social factors, as well as some inheritance of unchangeable weakness of temperament (A.Ban, 2014). The causes of depression are not known but genetic, biologic and environmental factors are said to be contributory.
According to Stressors (2000) factors of depression include living with stressors, taking drugs, alcohol and smoking, having chronic diseases and treatment, past bad experience, personality, biological factors that may be related to inheritance from parents. Other factors of associated with depression may be gender (female are more exposed), culture or country (high frequency in America), and social economic status like living in poverty; for being female, in puberty, girls are more exposed to depression because of hormonal factors, menstruation, pregnancy, child birth, social economic status and menopause are also factors to consider in women.

Precision with diagnosis of depression is based on some on signs and symptoms that meet specific criteria such as discouragement, a person not enjoying his/her usual activities, loss of energy or asthenia, lack of self-esteem and depression may be mild, moderate and severe according (Public & Concern, 2012:1).

According to Harrison (2011) the morbidity and mortality associated with depression is substantial. Approximately 5% of the population are with major depression at any given time, with men experiencing a lifetime risk of 7-12%; and women 20-25%”(Harrison et al., 2011, p1). Globally, depression is a mental disorder which affects 350 million people of all ages and it is a major cause of disability and suicide also that affect more women than men (WHO, 2016).

In sub Saharan Africa, the prevalence of depression showed depressive disorder as 8.6%, major depressive episode 7.6% and dysthymia 2.1% with many risk factors including living conditions, family conflict, stress and psychosocial problems like war, low income, chronic diseases, orphanage, child violence and neglect, loss of food and famine(Kinyanda et al, 2013). The prevalence of depression in Rwanda is 15.5% to 46.4% and 19% of syndrome of depression disorder according to Social Psychiatry and Psychiatric Epidemiology (SPPE, 2014) in a study done in the community.

Depression affects young people and adults. The WHO indicated that 10 to 20% of children and adolescents experience mental disorders and this usually start at about age 14 years. This observation showed that from early adolescent the risk of mental illness is there. While depression in adolescents is usually said to be difficult to recognize, it has also being documented that two percent of pre-pubertal are suffering from depression. In the United States
the prevalence is 1 percent in preschoolers and 2 percent in school-aged children, 5 to 8% of adolescents (American Academy of Family 2016).

Also, the prevalence depends on the population. The study done by Rey and Bella (2015) on depression in adolescents show that 5% of adolescents suffer from depression and the percentage of new cases is increasing. This study also showed higher prevalence in girls than in boys with record of 12% among 16 years old girls and 7% of boys (Rey et al., 2015, p2).

Depression in adolescents in Rwanda seems to be a big issue from anecdotal observation of the investigator but there is little empirical evidence to validate the true status of factors associated with depression among adolescents. There is also none to give direction for considering what the possible risk factors and actual factors are as to guide intervention for prevention, early diagnosis, prompt and quality treatment. One available study done showed that the rate of depression among adolescents with HIV is 85% (Patric et al., 2014).

This study collected data on factors associated with occurrence of depression among adolescents hospitalized for depression. Identifying the factors of depression in adolescents will help health care providers in decision making for risk assessment, preventive intervention, early diagnosis and prompt treatment.

1.3 Problem statements

Depression is documented as a medical and mental problem which affect all age of life but increases in adolescence (Hirot a M. et al., 2016). Identified risk factors include psychosocial factors, family predisposition of depression and environmental factors (Kinyanda et al., 2013). Depression has also being associated with world development, increasing prevalence of medical illness and poverty (Rey et al., 2015). In Rwanda depression is thought to have increased following the 1994 genocide because of loss of important many family members to about 30% as reported by (Elbert, 2013). It is also said to have increased after genocide of 1994 because of losing important family members, social economic problems, unwanted pregnancy, and chronic diseases with increased risk of suicide 19.2% from the study done in Rwanda (Wilson Rubanzana, Bethany L Hedt-Gautier, 2015). This assumption is yet to be empirically validated especially among adolescents. Little is also documented about contributory risk factors to
occurrence of depression among adolescents in Rwanda. This study is investigating factors associated with depression in adolescents from three selected hospitals in Rwanda, Remerarukoma District Hospital, Masaka District Hospital and Ndera Neuropsychiatric Hospital in order to have recent information for helping in prevention and providing health support to adolescents with depression

1.4 The aim of the study

The aim of this study is to document the factors associated with depression in adolescents in Rwanda.

1.5.2 Specific objectives

The specific objectives of the study were:

1. To identify psychosocial factors associated with depression in adolescents who attend the selected hospitals.

2. To identify environmental factors associated with depression in adolescents from selected hospitals.

3. To identify family related factors associated with depression in adolescents who attend these selected hospitals.

1.6 Research questions

- What are psychosocial factors associated with depression in adolescents in Rwanda?

- What are the environment factors associated with depression in adolescents?

- What are the family related factors associated with depression in adolescents
1.7 Significance of the study

Taking preventive actions that are culturally and environment sensitive and specific by health care providers to reduce adolescent depression requires information about the factors that are identified to actively contribute to the occurrence of depression among this vulnerable group. The evidence from this study will be useful for health care providers to develop programmes plan education, risk assessment, early diagnosis and treatment. Findings from this study will provide the required data and needed evidence to guide intervention for effective, care and support of depression in adolescence. Findings will also serve as reference for other researchers, health workers, policymakers and stakeholders to improve quality of care among children with depression.

1.8 Operational definition of key terms pertinent to the study

Factors associated with depression: these are identifiable personality, psychological, environmental, and familial characteristics, conditions and experiences that the individual has or is exposed to that may be associated with the occurrence of depression. The source of some of these factors are biological, psychological, and environmental in nature (Cacioppo, et al, 2006,p2-3). In this study factors to be included will include demographic characteristics, exposure of an adolescent to certain psychologically and sociologically challenging situations and environment that increases the possibility of an adolescent developing depression as was identified from literature review.

Depression: is a medical illness and serious mood disorder which affect negatively the feeling, thinking and day activities, it causes feelings of sadness, loss of interest in life and activities, emotional and physical problems. Symptoms must be present at least 2 weeks for being diagnosed with depression (Alotaibi, 2015,p3). In this study, all adolescents that met the criteria and have been diagnosed with depression in the selected hospitals are also enlisted as having depression.

Adolescent In this study, the definition of UNICEF and WHO of the age categorization of adolescents will be adopted. The age range of the adolescent may differ from the society to
another. According to United Nations Children’s Fund (UNICEF) and World Health Organization (WHO) adolescent is from 10 years to 19 years old (Nations, 2008).

1.9 Structural organization of the study

This report of the investigation is presented in four main parts. The introductory chapter gives the background and the need and the focus of the study. The second chapter covers the review of relevant literature in the context of the theoretical base of the subject matter and the empirical data from previous studies. The theoretical/conceptual framework guiding the conduct of the study is also presented in this chapter. The third part presents the method that will be adopted to collect relevant data with information on the design, the sample, the instrument, process for data collection giving due consideration for ethical requirements and data analysis.

1.10 Conclusion:

It is important to give attention to mental health as a main component of total health and wellbeing of individuals. Different mental disorders affect people across the lifespan and are discernable early in childhood. Depression is one of the major mental disorders that affect a significant portion of every population with higher prevalence among women. Depression also affect adolescents but the diagnosis may not be made quickly and appropriately except extra attention is given to the risk factors which may be biological, psychological, environmental and familial in origin. With the problem of dearth of empirical data on risks factors associated with occurrence of depression among adolescents in Rwanda, health care providers may not be able to engage in evidence based preventive and care to reduce the burden of depression in adolescence. This study is proposed to investigate the biological, psychological and family related risk factors among adolescents with depression in selected hospitals in Rwanda.
CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

The purpose of this chapter is to review relevant literature on the variables of interest in the study to gain insight into the theoretical dimensions and the empirical evidence on depression, depression in adolescence and risk factors for depression among adolescents. The meaning of depression, signs and symptoms, diagnosis, prevalence and risk factors in adolescents will be discussed. This information was obtained using search engines such as Google, Google scholars, Hinary, PubMed, Researchgate from the Internet using depression, risk factors of depression and depression in adolescents as key terms. Journals and textbooks on adolescent’s mental health and psychiatry were also consulted. The summary of the review covered the meaning and burden of depression considering the magnitude and cost, depression in adolescents, the factors associated with depression generally and with adolescents in particular, theoretical/conceptual framework that was adopted for the study.

2.2 Theoretical Literature

2.2.1 Mental Health Disorders

Mental health is an essential component of the health of an individual (WHO, 2013; Department of Health, 2011; Prince et al, 2007). Many factors determine the mental health and development of mental disorders. The World Health Organization indicated that these factors could be related individual’s ability to manage their thoughts, emotions, behaviors and interactions with others as well as other factors that can be social, cultural, economic, political and environmental in nature. National policies, social protection, living standards, working conditions, and community social supports all contribute experiences and responses of an individual (WHO, 2013). Many of the factors that expose individuals to adversity are preventable risk factors to mental disorders. As WHO indicated some individuals and groups may be at higher risks of mental health problems. Such persons would include people exposed to high level of poverty, chronic health conditions, children exposed to maltreatment and neglect, adolescents exposed to substance use, persons that
are overworked and exposed to stress, violence, conflicts, natural disasters or other humanitarian emergencies to mention just a few (WHO, 2013)

Mental disorders are classified into 10 main groups which are: Organic, Mental and behavioral disorders, Schizophrenia, Mood disorders, Neurotic, Behavioral syndromes, Disorders of personality in adult persons, Mental retardation, Behavioral and emotional disorders in childhood and adolescence in ICD-10 (Articles, 2013, p. 8). So, depression is a part of mood disorders where it is called depressive episode. Based on severity of symptoms depressive episode can be in three categories which are mild, moderate and severe (Cesar and Chavoushi, 2013, p. 7).

2.2 Depression-The Meaning and Manifestation

Depression is one of the major mental disorders. The World Health Organization (WHO, 2012) indicate that people with depression present with symptoms such as: bad mood, loss of pleasure, no interest in activity, anorexia, anxiety and difficult to be concentrated about something (Marcus, 2012). According to International Classification of Diseases ICD-10, mood disorders are a part of mental and behavioral problems, where depression was called depressive episode or repeated depressive disorder (Cesar and Chavoushi, 2013, p. 7).

When a person has depression, he loses interest of normal functioning which is painful situation for the patient and those who stay there and caring about him or her, so doctors named this crisis depressive disorder or clinical depression. This is a real mental problem not symptoms according to National Institute of Mental Health (NIMH, 2015).

Depression is a common and serious mood disorder caused by many factors that could be genetic and biological, environmental, and psychological in origin that result to change in feeling, thinking and hindering daily activities (Lorenzo-luaces et al., 2016), also characterized depression as a mental condition with severe feelings of hopelessness and inadequacy, loss of energy and interest of living (Lorenzo-luaces et al., 2016). There are many factors associated with depression some are common in all age of life and other are specific to age or gender (Cacioppo et al., 2006).
Major depression is a mood disorder characterized by severe symptoms; feeling of sadness, loss of appetite, loss of hope, no self-esteem, frustration presented in ability of working, studying, and enjoying the life stay within a long period; these symptoms may be presented once in life or in many episodes but delay in depression which is called chronic depression that stay until 2 years and above, with major depressed mood but less severe symptoms (Marcus et al., 2012, p1).

Minor depression is a form of depression with few symptoms 1 to 4 symptoms which take period of less than 2 weeks. Psychotic depression is a type of major depressive disorder which is associated with signs of psychosis like negative beliefs or not being aware of reality (delusions), or hearing or seeing things that others cannot hear or see (hallucinations). Postpartum depression is an episode of depression that mother have after delivery caused by change in hormonal regulation and physical changes when she is pregnant, fear of having baby and caring newborn. The mother is wondering many things she is very tired, she may sleep all hours or don’t sleep at all, she thinks that her baby may be taken away to. Seasonal affective disorder (SAD), is onset of depression when there is any change of seasons like having depression in months of rain where there is no sun for example and lift during the period of sum. Bipolar disorder is episode of extreme low mood or depression and extreme high mood or mania where people have more energy for doing activities or have in other time became very sad, hopeless and little energy (Harrison et al., 2011).

Clinical depression is also called mood disorder and there are major depression, dysthymia (which stay there for long time but no severe symptoms), and atypical depression. Others include depressive disorder like premenstrual dysphoric disorder (PDD or PMDD) and seasonal affective disorder (SAD). Depression or mood disorder has several subtypes like bipolar disorder or manic-depressive disease and in major or acute depression, five symptoms of depression must be there for a period of 2 weeks at least, with behavior change or mood disorder. Depressed mood or chronic depression, affect people on the rate of 3 - 6% of the general population, and Seasonal affective disorder (SAD) is recognized by episodes of depression which are repeated in every year during any period and end in other one like fall or winter that improve in the spring or summer (Harrison et al., 2011, p.9).

Depression affects people in different ways and signs and symptoms of depression present in different manner (Rey, Bella-awusah and Liu, 2015) (Cesar and Chavoushi, 2013, p. 6). The
severity and frequency of symptoms, how long they stay, depend on the individual, age and his or her personality as signs are presented according to the stage of the disease (Alotaibi, 2015, p. 4).

Women with depression may have a good family, good job but do not ever enjoy that and women who have depression they feel so sad, no interest in life and have fear of nothing but men present depression in a different manner with women. While women with depression may feel so sad, men may be very tired, irritable, loose interest in activities that he enjoyed before, would not sleep and would resolve to enjoy drinking alcohol or drugs (Rey, Bella-awusah & Liu, 2015). Men also may become frustrated, discouraged, irritable, angry, and sometimes abusive. Some men may refuse to go at work to prevent that other talk about their depression, or do something without fearing about the consequences. Women like to talk and try suicide but men act suicide and die. Depression in older people is difficult to be diagnosed because of less symptoms like to feel tired, insomnia, irritability and confusion but all of these may be present because of age or other disease like Alzheimer. For old people to have depression, it would mean that such persons were exposed when they were young and having severe disease that disturbed the person would precipitate depression (Harrison et al., 2011).

Children with depression may refuse to go to school claiming to be alone and fear that parents may disappear definitely or die. The prevalence of depression in children is low (less than 1 %) with no sex differences but then rises substantially throughout adolescence (Tharpar et al., 2012). Adolescents are vulnerable to depression and should be considered as an important age category for attention as would be presented in this review subsequently (Petersen et al., 1993, p. 5).
2.2.2 Burden of Depression

According to WHO depression is lead contribution to global burden of disease and by estimation 350millions of people are suffering from depression(Marcus, 2012).The estimation of World Health Organization is that the prevalence rate of depression in adult varies between 10% and 20% depending on situation that they live in by (Kar & Health, 2016p36).

According to(Leadbeater et al., 2004,p1) (Medscape, 2016), major depressive disorder rate is about 15 millions of Americans and 7% of adult population per year. As depression is a disease which may affect everyone at any time, but high rate in age of 49 - 54 years and over 85 age of white men. Also, the rate of suicide is high and men try to mask their depression with consuming alcohol. About 1 - 5% of people are affected by depression and increase because of chronic diseases and all age of life may be affected by depression but adolescents are on the high risk of having depression if one of the parents had or have depression especially if it is the mother (Ustun et al, 2011,p6).

The prevalence of depression among Indians was between 13 and 25 per cent and for World Health Organization stated that the overall prevalence of depression varies between 10% to 20% according to the culture (Kar & Health, 2016:36)

In sub Saharan Africa the prevalence of depression ranged from 8.6% for depressive disorder, 7.6% for major depressive episode and 2.1% for dysthymia with many risk factors including living condition, family conflict, stress and psychosocial problems like war, low income, chronic diseases, orphanage, child violence and neglect, loss of food and famine(Kinyanda et al, 2013).In Africa depression is higher than in Europe or the United States, 85% or 90million in Africa suffer from depression and the prevalence of depression is twice in women compared to men who suffer from depression Strong Minds (2016).

In Rwanda, the prevalence of depression is 15.5% to 46.4% and 19% of syndrome of depression disorder in the study done in the community according to Social Psychiatry and Psychiatric Epidemiology (SPPE) (2014).Depression may have complications like chronicity and suicide if not treated at time(Rico,2010p2) and in productivity there is risk of poverty because those who are depressed do not have interest in productive activities and condition of living will be critical.
because there is no improvement, no education if adolescents refused or didn’t achieve their studies (Marcus, 2012). Depression is high in female than in male and the study of (Survey, 2015p37) showed that depression in children and adolescent is 2.8% high in female 3.1% than male 2.5.

2.2.3 Sign and symptoms of depression
The signs and symptoms of depression depend on the type. These could include depressed mood, no feeling of pleasure when client is in period of happiness or interested activities, change of physical appearance like which may be loss or gain in weight. Others include lack of sleep or sleep in every time, involuntary motor movement or delaying, asthenia, having fear everywhere the client is, guilt feelings, loss of concentration, no capacity for taking decision, death thoughts all the time and ideas of suicide (Health Net, 2016).

2.2.4 Depression in adolescents
Adolescence is the stage of life between 10 to 19 According to United Nations Children’s Fund (UNICEF) and World Health Organization (WHO) (Nations, 2008). Adolescence is a critical stage of development where depression is raised, especially in post pubertal where there is change in biological and social status and pubertal because of maturity of brain and intelligence.

At this period adolescents begin to know what is going on in development. Girls are more exposed to depression because brain maturity leads to increasing of hormone which causes the stress and also as they become mature they face many issues which may cause depression also. In early adolescence period depression is 5% and increases to 20% in middle adolescence (Survey, 2015). In adolescence depression is favored by being in low income country, middle income country, gender, family predisposition of depression and personality characteristic (Peter et al, 1994).

2.2.5 Factors associated with depression in adolescents
Wang et al (2012) documented some factors associated with depression in adolescents which are personal like having depression or other mental problem, physical disability, personality disorder, no self-confidence, experience of bad events, pessimism, stress management and emotional management. Family factors like lack of family support, poor family, mental problems
in the family, irritability of parents and divorced parents. Social factors which are lack of friend’s support, lack of respect, death of lovely person, conflicts in friend’s relationship. Environmental factors like staying in hospitalization for long period, quality of house (Wang et al., 2012).

Drug and alcohol use, scholastic behavior and somatic symptoms are risk factors to adolescents as said by (Saluja et al., 2006p1). HIV AIDS is a risk factor of depression because of many orphans after death of their parents and in adolescent age they start to be responsible for their own lives, they loose care and love from parents and they become depressed (Wang et al., 2011p2).

In causes and factors associated with depression Thapar et al (2012) explained that inherited characteristics, personality, hormonal change and temperament may be causes or distal factors of depression. Familial and genetic factors which include having parents who suffered depression, mother with depression in prenatal period or post natal period were also contributory factors. Psychosocial facors associated with depression include stressful event, untreated depression, family conflict, poverty, chronic diseases, war, being orphan, displacement, physical violence and disturbed relationship with friends or other persons (Thapar et al, 2012).

According to the study done in Uganda (2013) in some districts the results show that environmental or ecological factors such as nature of household, living in urban or village, climate or season and disasters may be contributory to depression. Psychosocial factors associated with depression include stressful living conditions, family conflicts, emotional distress, biological change, physical change, low self-esteem, pessimism, relationship with family, relationship with friends, self-consciousness, educational achievement, marital status employment status of parents, eating disorder, motor developing disorder syndromes, coping skills in stressed condition (Kinyanda et al, 2013p1). Drug abuse, giving birth in stressed condition (postpartum depression), low socio economic income, medical illness (genetic factors), family related factors; history of mental illness or depression in the family, parents who have depression or who had depression in past may be factors of depression also (Kinyanda et al, 2013p1). There are other facctors like family relationship and prenatal behaviors which affect adolescents and lead to development of depression (Rey, Bella-awusah & Liu, 2015)
2.2.6 Presentation of depression in adolescents.

The adolescent years can be confusing because adolescents are forming their own personality and identity, struggling with gender issues, facing sexuality and try to make their decisions for the first time in their lives means that they may have usually bad mood (Galambos, Leadbeater and Barker, 2004, p. 1). Occasional bad moods are to be expected, but depression is different. Adolescents with depression may sulk, get into trouble at school, be negative and irritable, eat more, gain weight and feel misunderstood. Anxiety and Depression Association of America ADAA (2016, p3), (Poquiz and Frazer, 2016, p. 2). The adolescent with depression may have disturbed friends’ relationship, problems in family relations, failure at school, usually are affected by diseases and delay in hospitalization, behavior change, recurrent depressions, psychosocial problems, drug abuse, and increased antisocial behaviors as they become mature, and may end up with early pregnancies (Cesar et al., 2013, p11).

2.2.7 Diagnosis and Management of Depression in Adolescents

To make diagnosis of depression, the symptoms must be there for two weeks. The signs and symptoms which are present in adolescents include hyper and hypo activity, failing in school, milestones development not in tandem with age, anxiety, attention and concentration problems and impulsivity according to (Koenig et al. 2014, p.121).

The duration of symptoms are good guide to determining whether an adolescent has depression or is only experiencing crisis of “being a teenager. The adolescent with depression may also have other disorders like anxiety, eating disorders, or substance abuse. They may also be at higher risk for suicide. Many adolescents don’t know where to go for mental health treatment or believe that treatment won’t help. Others don’t get help because they think depression symptoms may be just part of the typical stress of school or being a teen. Some teens worry what other people will think if they seek mental health care. Depression stay there recurs and continues into adulthood if it is not well treated at time (Naus et al., 2015).

Depression in adolescents is presented differently to adults with behavior change; alcohol abuse, being aggressive, became aggressive in actions and words. Diagnosing depression in adolescents is the same as children and adults except irritability as confirmed in the 4th edition of the DSM-
The duration of symptoms of depression in children and adolescents is one year but two years in adults. Hypersomnia is said to increase in depressed adolescents than in children and there may be suicide ideas in adolescents. The cost of depression in adolescents with depression is high because they delay in hospitalization, they use many emergency services compared to children who have mental health problems and children who do not have mental health problem. According to Cesar et al three quarters of adolescents with depression do not receive treatment, in New Zealand and 80% of adolescent with depression do not get treatment (Cesar et al., 2013, p11)

2.3 Empirical Literature

Research reported that nearly 1 in 5 girls of 16-17 years present criteria for depression and teenager of 11-17 years with depression was on 7.7% rate according to responses of children themselves and 4.7% after interviewing the parents in the United States. In a similar study in the United States the rate of depression among adolescents between 13 and 18 years was reported to be 11.7% and depression is more common among adolescents and affecting children before 18 years (Cesar et al., 2013, p11)

Depression is higher in female than in male and the study (Survey, 2015p37) showed that the rate of depression in children was 2.8% and in adolescents was higher in female, 3.1% compared to the rate among the male which was 2.5%. The study done in Canada also reported that boys are not as exposed to depression as girls (Galambos, Leadbeater and Barker, 2004). In the study conducted by Kinyanda et al (2013) in Uganda, findings showed different factors associated with depression like stressed living condition, home violence, or ecological factors, behavior disorders, and developmental disorders. This study also reported that depression in adolescent in Uganda is high (Kinyanda et al., 2013, p. 1).

The other study done in Uganda by reported that depression is frequent in school going between 14-16 years old in association with male, orphanage and alcohol abusing. The same study showed that to having multiple wives is a significant factor associated to depression as well as psychotic problems as co-morbidity (Sserunjogi et al., 2016).

The study done by Kim explain well that female adolescents are more depressed than male, the age which is more affected is 18-19 and they also noted poor social support in adolescents with
depression. Also this study explain how physical factors is important as depression in HIV+ adolescents is 18.9% among 562 participants (Kim et al., 2015).

### 2.4 Critical Review and Research Gap

There is increasing attention to extensive exploration of mental health problems in childhood in many developed countries with some studies emerging from developing countries. Most studies are looking at mental health disorders in children and adolescents together (Cesar et al., 2013, p11); (Survey, 2015p37); (Sserunjogi et al., 2016) but there is increasing need to look more closely to peculiar challenges of depression to adolescents with the observation that depression tend to occur more as children become teenagers and yet they seek care less (Cesar et al., 2013, p11).

There are diverse factors that have been identified as contributory to depression in young people but not all children and adolescents exposed to these conditions develop depression. There is a gap in identifying those factors that are common to those adolescents who ultimately develop depression. There may be differences in who may be more at risk and who ultimately develop depression when gender is considered. While many studies indicated higher rate of depression in females, the study done in Uganda by Sserunjogi reported that male are more affected by depression differently to other research done about depression among adolescents (Sserunjogi et al., 2016). In Rwanda, the psychosocial and environmental conditions that young people are exposed to are also similar but there is yet an empirical report of those factors that are associated with depression among adolescents and this is a gap that needs to be filled to serve as guide to screening and prompt treatment. In Africa generally and in Rwanda, studies in depression among adolescents are just trickling in and identifying those factors that are associated with morbidity from depression would be useful in developing screening tools for early detection of at risk adolescents to depression for early intervention. There is dearth of data about depression in adolescents in Rwanda hence the investigator’s interest is assessing those factors associated with diagnosis of depression in adolescents in Rwanda.
2.5 Conceptual framework of the study

The social ecology model was said to have evolved from Kurt Lewin’s and Urie Bronfenbrenner’s work. The model provides the framework to help in understanding how the individuals and their social environments affect each other mutually across the lifespan. The model draws from the ideas of Kurt Lewin’s 1935 work, A Dynamic Theory of Personality: Selected Papers and Urie Bronfenbrenner’s 1979 work (Oxford Bibliography Review), Bronfenbrenner was noted to have extended the social ecological perspective to explain the complexity of individuals development evolving within four sub-systems specified as the micro-, meso-, exo-, and macro- and the chrono subsystems, which constitute the settings and life space within which an individual develops. In this model, each of the subsystems influences the individual and the other subsystems. As the individual moves develops over time, the person is influenced by the development and the life course experiences considered as the ontogenic development).

This model infers that an individual’s health outcomes are consequent to the interactions with and within the five ecological systems. According to Lakhan and Ekundayo, 2013:104 this model, the ecological model and its components are in use in prevention and treatment of depression in several countries of the world. According to him the component system levels of ecological model include

1. The Micro and the central level of the system which encloses the individual and the person interacts with objects and people in their intimate and immediate world including parents, siblings, spouse, friends, children and significant others with dynamic and active engagement and interactions. “Ecological theory indicates that a positive and supportive functional relationship with Microsystems (e.g. family, peer, parents, teachers, schools) increases chances of healthy social functioning and decreases depressive symptoms, their severity and number of episodes” (Lakhan and Ekúndayô, 2013). In the context of family related factors, positive negative non-supportive relationships between siblings, parents and peers are stressors that can compound biological or physiological related stress like hormonal changes to predispose to
depression in adolescents. Chronic diseases or loss of family members are also causes of stress that increase risk to depression in adolescents.

2. The Mezzo and surrounding systems that serves the micro system formally and informally and these include family/families, group/groups (peers organizations, local facilities and services. Lakhan and Ekundayo (2013) indicated that an individual is at higher risk of developing psychological stress if communication is poor between various Microsystems, disconnection or disruption of the micro- and mezzo systems, creating a social disorientation. This is in relation with depression when the social interaction with surrounding society is disturbed like poor communication and loss of family support which have impact in psycho-social factors associated with depression.

3. The Exo level includes specific social structures and organizations that does not contain individual but affects an individual’s immediate environment and their microsystem. While the individual may not play any role in constructing the Exo system, they experience direct impact on their mood and affect. Lakhan and Ekundayo gave example of a sole earner in the family being laid off from their job with their unemployment resulting to direct negative impact on them and their family members. Loss of income creating psychological, social and economic stress to the individual and their family result to stress and prolonged stress poses significant risk of producing mental illness in the individual and their family (Lakhan and Ekúndayò, 2013)

4. Macro level: This covers the larger society and culture in which an individual lives and interacts and cumulative negative events from the policies, rules, regulation all have impact on a person over a lifetime with have far reaching consequences for their mental health. Inappropriate or lack of psychosocial support results to a vulnerable individual developing depression. Within the ecological context and ecological components associated with depression, three major social determinates of health identified include a) socioeconomic status, b) social cohesion and c) negative life events as correlates with depression.

5. Chrono - level deals with agencies, rules, regulations and provision of the State from whom the micro and mezzo seek resources and support. As Lahkan and Ekundayo indicated agencies from this system build capacity, train, advocate and provide services as to ensure accessibility, affordability and provision for quality care.
Adopting the socio-ecological approach enables exploration and focussing at elements at all levels of the systems that can contribute to the occurrence as well as mitigation of the effect of depression.

This study is focussing mainly on elements at the first three levels, the Micro, the Mezzo and Exo levels but all clustered into psychosocial factors, environmental factors, biological factors and family related factors believing that there are sociological factors in the micro system that derives from the mezzo system and there are factors in the mezzo systems that relate to the micro and the exo system as well. This study sought to identify behavioural indicators in these various dimensions that are present in adolescents with depression in Rwanda. Figure I represents some of the behavioural indicators that are in the psychosocial, environmental, biological and family related domains.
2.5.1 Social Ecological Theory of Depression used in Exploring Depression in Adolescents

**Micro System**
- Biological factors
  - hormonal change
  - obesity
  - Physical disability
  - chronic disease

**Mezzo System**
- Psycho-Social factors
  - low self esteem
  - death of parents
  - failure in class
  - depression in family
  - pessimism
  - Conflict with friends
  - no friend’s support
  - no family support
  - refuse to be with friends (etc)

**Exo System**
- Disappointment in

**Macro System**
- Environmental factors
  - expropriation
  - climate change
  - hospital stay
  - difficult of climbing stairs
  - Small house

**Chrono System**

**FAMILY RELATED FACTORS**

**DIAGNOSIS OF DEPRESSION IN ADOLESCENTS**
- Depressed mood
- Unhappiness
- Lack of pleasure
- suicide ideas
- eating disorders (etc)
- lack of pleasure

Figure I – Conceptual framework for the study adapted from Lakhan R, Ekúndayọ OT. Application of the ecological framework in depression: an approach whose time has come. AP J Psychol Med 2013; 14(2):103-9
In conclusion depression is a big problem for all ages of life which is increasing because of many factors associated with development, economic depression, conflict and wars, chronic diseases, infectious diseases, changing family structures and functioning, natural disasters. These factors also would increase the prevalence of depression in adolescents except there are specific interventions to screen and manage depression in adolescents efficiently. Exploring the biological, psychosocial, environmental and family related factors associated with depression objectively among adolescents within the context of micro, mesxo, and exo systems. Exploring factors that are associated with depression will guide developing focused screening tools and intervention.
CHAPTER THREE: METHODOLOGY

3.1. Introduction.

This chapter explains the step by step of the process of conducting the study. The research design, the study area, the target population and the sampling techniques for selecting sample for the study are presented. The tool and process of data collection, ethical consideration, plans for data analysis, report and dissemination of reports are also presented. The limitations and challenge faced in the course of collecting data are also presented in this chapter.

3.2. Research Design.

Descriptive design was adopted to conduct this study. Descriptive research helps to “document factors, that describe characteristics, behaviors and conditions of individuals and groups” (Portney and Watkins, 2009:301). This design enabled access to responses on the variables from adolescents (and their parents or guardians) with depression in line with the objectives set for the study (Ideas, 2008).

3.3. Approach

Data was gathered adopting the quantitative approach (Jalal Hghihat M. et al, 2015). A structured questionnaire with test items that allow for measurable valid responses was used to collect data from adolescents,

3.4. Study Settings.

The study was conducted in three hospitals in Rwanda. These are in Masaka District hospital, in Kicukiro Distric, Masaka Sector. Remerarukoma District Hospital, in Kamonyi District, Rukoma Sector and Ndera Neuro Psychiatric Hospital in Gasabo Distric,Ndera sector. These are public supported by the government but the first two provide diverse health services including mental health and psychiatric care while Ndera Neuropsychiatric Hospital provide care only for clients with mental disorders.
3.5. Population.

The target population are adolescents, boys and girls in the range age of 10 and 19 years who are diagnosed with depression (and their parents where necessary) but the accessible population were all adolescents confirmed in their registration files with diagnosis of depression from January 2015 to April 2017 accessed from hospital records of the selected hospitals. The target population of the study was 50 adolescents accessed from the study sites. Information from parents was meant to serve as complimentary data to information provided by adolescents who may not be able to respond to some of the test items.

3.5.1 Inclusion criteria

All adolescents from 10 years to 19 years who were diagnosed of depression registered in the files of the selected hospitals and their parents, who signed assent and consent forms to participate in the study.

3.5.2 Exclusion criteria

- Adolescents aged 10-19 who were not mentally stable and coherent and whom parents do not accept to participate in the study

3.6. Sampling

3.6.1. Sampling strategy

To select the subset of individuals from the population whom they have the same characteristics (Etikan, et al., 2016p1), the investigator selected all adolescents with diagnosis of depression in the 2015 and 2017 records of the hospitals used for the study. Parents and adolescents recruited from the records signed assent and consent forms. For this study, all the sample units that met the criteria were recruited to participate in the study and the non-probability convenience sampling was used to select the adolescents who participated in the study. With this kind of sampling, all readily available subjects who consent were all involved in the study.
3.6.2. Sample size

Determination of sample size focuses on choose representative number of respondents for inclusion in statistical sample or the total number of adolescents on whom the research did (Guetterman, 2015). The researcher used the total number 50 adolescents of population subject to the number of adolescents recorded to have been diagnosed and receiving care in the hospitals.

3.6.3. Sample size calculation

When you have a small number of population in research project there is no need to calculate the sample size. The researcher used all the population who met the criteria, 50 adolescents who were on the sites of data collection because adolescents with depression who consult mental health care provider services are not a large number in Rwanda.
3.7. Data Collection

3.7.1. Data Collection instruments

The researcher used interviewer-administered questionnaires with close ended test items translated from English to Kinyarwanda language as tool of data collection. The Language Center of College of Medicine and Health Sciences helped in the translation of the questionnaire. The questionnaire has four sections. Section A: covered the socio-demographic characteristics of respondents. Section B, covered psychosocial factors. Section C: covered the test items on environmental, socio economic factors and Section D family-related factors with each subcategory identified by numbers. All test items in Sections B to D required two possible responses of “Yes” or “No”.

This tool was developed by the researcher assisted by the supervisor based on literature review, conceptual framework, the title of the study, problem statement and specific objectives as guides.

Validity of the Instrument

Validity shows the level or degree to which the instrument measures the specific concept that the researcher wants to study. The content validity of the instrument started with aligning the test items of the instrument with the objectives of the study. The investigator worked with the supervisor and other experts in mental health and psychiatry to ensure that the test items cover the concepts and variables of interest in the research as to ascertain the content validity. The face validity was also assured through the use of simple unambiguous statements. The ease of understanding was verified by adolescents and parents who participate in the pilot testing.

Pilot and Reliability Testing

For this study, the researcher adopted the test-re-test method of reliability testing. The survey instrument was administered to selected 5 adolescents (and their parents) twice over a fortnight interval in order to see how the responses stay stable over time. The results from the two tests was compared using correlation coefficient and a result was 0.98 was deemed adequate to accept the instrument as being reliable. Reliability is based on accuracy of measuring instrument or procedure. It is also a measure of a stability of response in different periods on the same group of
respondents which provide the result of correlation coefficient and results are considered good if they are 0.70 and above (Litwin, 2003). The ease of administration and understanding of the instrument by the respondents was considered during pilot testing and were deemed adequate. Two components initially labeled psychological factors and psychosocial factors were merged to one with a new label of psychosocial factors.

3.7.2. Data collection procedure

Following approval of Institutional Review Panel, letters of permission to collect data were taken to the various clinical facilities where respondents are to be accessed for their approval. Data were collected in three weeks, 3 days per week in each of the three hospitals. The researcher collected data herself, administer questionnaires to respondents.

3.8. Data analysis

Analysis of data is a procedure of inspecting, cleaning, transforming, and matching data with goals in order to have meaningful information which will help to make decision about conclusion (business dictionary, 2016) The researcher cleanse, sorted and coded the data before data entry and analysis using the Statistical Package for Social Science (IBM-SPSS version 20) to analyze data. Descriptive statistics such as mean, standard deviation were used for continuous variables, frequency, and percentages for categorical variables. All the factors identified are summarized and comparisons were made considering sex and age of respondents mainly. Results are presented using tables and figures.

3.9. Ethical considerations

The proposal for this study was submitted to the Institutional Review Board of the University of Rwanda College of Medicine and Health Sciences. Permission to collect data was also sought from Hospital administrators, from mental health providers or nurses who work in mental health services and informed consent was taken from parents and adolescents with the diagnosis of depression accessed in the clinical site of the study. Before the commencement of the study, the researcher planed with the members of the health care team for necessary counseling and
psychological and emotional support for any respondents (adolescents and their parents/care givers) who may experience any emotional or psychological distress in the course of filling the questionnaire. The researcher and health care team interviewed adolescents who were mentally stable and fully cooperated.

The researcher respected the human rights and promoted self-determination by giving all information to all respondents before starting the study and the respondents were assured that the shared information would be protected, would not be shared with others and would only be shared anonymously with the health care team who would find the findings useful in planning for better care outcomes. Respondents were interviewed in private room with more protection. Parents of all respondents were required to sign the consent form and all respondents were encouraged to sign the consent and assent form administering the questionnaire to them. Data was coded and was analyzed by researcher with assistance from the supervisor.

3.10. Data management

Data management is activity of collecting data, sharing data, protecting sensitive data, storage or retention of data and policies which guide the treatment of research data and publications (Buys, et al, 2015). The researcher protected data from period of collection using a coding system. Data was stored in a computer protected using password that is only available to the researcher and the supervisor. This status will be sustained until the report is published when the data can be safely disposed off.

3.11. Data Dissemination

Data dissemination is important because it helps in sharing new information and may help in behavior change. The researcher intend to present the findings in conferences and hope to share the findings with to health care providers, policy makers, other researchers, adolescents groups and parents generally (Services, 2013). Findings will also be published in a reputable peer reviewed journal.
3.12. Limitations and challenges

In this study, the method adopted the number of respondents was limited by the nature of the study and total number of adolescents receiving care for depression in the institutions used to access respondents. The sample size was the total number of adolescents with the diagnosis of interest who were also mentally stable to be coherent in responding to the test items and the total number was . The researcher also had to spend more time with respondents to get complete data hence the number of days spent collecting data was more than what was initially planned. Generalization of the findings is limited to respondents in the local context of the study.

3.13 Conclusion

This chapter provided detailed presentation of the process that was adopted to select, access the respondents, develop and administer the relevant instrument to collect the needed data. The method adopted in handling and analyzing the data was also presented.
CHAPTER FOUR: RESULTS

4.0 Introduction

This chapter covers the result from the analyzed data. Results are presented in summary tables and illustrations using the objectives of the study as guidelines. The first part covers the socio-demographic features of respondents. The second part presents summary table of responses focusing on psychosocial factors associated with depression in the adolescents in the study with reflection of statistical significant associations of identified variables by gender. The third, fourth and fifth parts covered the environmental factors, and family related factors associated with depression in adolescents respectively.

4.1 Socio-demographic Characteristics of Respondents

Fifty respondents, 20 males (40%) and 30 females (60) in the three stages of adolescence were involved in the study. Total number in the family of respondents ranged from a minimum 0, Maximum 8, Mean of 5. The number of siblings of respondents also ranged from minimum 2, maximum 8, Mean 5± 9. Adolescents who were not in school were 9(18%), 20 (40%) were in primary school, 21 (42%) were in secondary school. Thirty six (72%) were Christians, 7(14%) were Muslims, 3(6%) practiced traditional religion and 4 (8%) had no religion.
Table 4.1.1 presents the summary of data of other socio-demographic characteristics of respondents.

**Table 4.1.1  Socio-demographic characteristics of respondents.**

<table>
<thead>
<tr>
<th>Socio-demographic characteristics</th>
<th>Frequency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age Categories in years</strong></td>
<td></td>
</tr>
<tr>
<td>(Minimum-10, Maximum -19, Mean - 15, SD 9±20)</td>
<td></td>
</tr>
<tr>
<td>Early adolescent (10-14)</td>
<td>6(12)</td>
</tr>
<tr>
<td>Middle adolescent (15-17)</td>
<td>44(88)</td>
</tr>
<tr>
<td><strong>Residence by Province</strong></td>
<td></td>
</tr>
<tr>
<td>Kigali (urban)</td>
<td>20(40)</td>
</tr>
<tr>
<td>Eastern</td>
<td>6(12)</td>
</tr>
<tr>
<td>Western</td>
<td>4(8)</td>
</tr>
<tr>
<td>North</td>
<td>3(6)</td>
</tr>
<tr>
<td>South</td>
<td>17(34)</td>
</tr>
<tr>
<td><strong>Occupation</strong></td>
<td></td>
</tr>
<tr>
<td>Student</td>
<td>27(54)</td>
</tr>
<tr>
<td>Trading</td>
<td>7(14)</td>
</tr>
<tr>
<td>Artisan</td>
<td>11(22)</td>
</tr>
<tr>
<td>No occupation</td>
<td>5(10)</td>
</tr>
<tr>
<td><strong>Distance from home to Hospital in Kilometers (KM)</strong></td>
<td></td>
</tr>
<tr>
<td>(Minimum – less than 5km, Maximum - 10 Km, Mean – 8km±4)</td>
<td></td>
</tr>
<tr>
<td>Under 5km</td>
<td>20(40)</td>
</tr>
<tr>
<td>Above 5km</td>
<td>25(50)</td>
</tr>
<tr>
<td>Do not walk</td>
<td>5(10)</td>
</tr>
<tr>
<td><strong>The income</strong></td>
<td></td>
</tr>
<tr>
<td>Up to 50 thousand RWfrancs</td>
<td>4(8)</td>
</tr>
<tr>
<td>No income</td>
<td>17(34)</td>
</tr>
<tr>
<td>Under 50 thousand francs</td>
<td>29(58)</td>
</tr>
</tbody>
</table>
Table 4.1.1 showed that majority (88%) of the respondents were in middle and late adolescence. Respondents with secondary and primary education were in the majority (42% and 40% respectively). Respondents were mainly from Kigali Urban (20-40%) and the Southern Province (17 – 34%).

4.2 Diagnostic and Treatment Characteristics of Respondents

Table 4.2 1: History of Diagnosis and Treatment of Respondents

First consultation was in 2015 for 12 adolescents (24%), 2016 for 21 adolescents (42%) and 2017 for 15 adolescents

<table>
<thead>
<tr>
<th>Period of treatment</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1 month</td>
<td>7(14)</td>
</tr>
<tr>
<td>3 months</td>
<td>10(20)</td>
</tr>
<tr>
<td>6 months</td>
<td>10(20)</td>
</tr>
<tr>
<td>9 months</td>
<td>9(18)</td>
</tr>
<tr>
<td>12 months</td>
<td>2(4)</td>
</tr>
<tr>
<td>13 months</td>
<td>12(24)</td>
</tr>
<tr>
<td>Other Co-morbidity (HIV)</td>
<td>14 (28)</td>
</tr>
</tbody>
</table>

Table 4.2.1 showed that 28% of respondents have been receiving treatment for about or a little over one year. Period of care for 72% of respondents ranged from one to nine months.
4.3 Distribution of Respondents by the Various Factors Associated with Depression in Adolescents with reference to Gender/Sex.

Tables 4.3.1 to 4.3.4 present the summaries of distribution of respondents by the test items under the psychosocial, environmental, and familial factors considering the gender of respondents.

**Table 4.3.1: Distribution of Respondents by Sex in the Psycho-social Factors test items**

<table>
<thead>
<tr>
<th>Test Items in the Psychosocial Domain</th>
<th>Male (n=20) (N=50 (%))</th>
<th>Female (n=30) (N=50 (%))</th>
<th>$X^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am in relationship with a boy or girl of</td>
<td>yes 3(6.0)</td>
<td>5(10.0)</td>
<td>0.025</td>
</tr>
<tr>
<td>I like and feel good about my self</td>
<td>yes 2(4.0)</td>
<td>1(2.0)</td>
<td>0.946</td>
</tr>
<tr>
<td>I am HIV+ and on treatment</td>
<td>yes 8(16.0)</td>
<td>6(12.0)</td>
<td>0.059</td>
</tr>
<tr>
<td>I do not hope for good life in my future</td>
<td>yes 19(38.0)</td>
<td>28(56.0)</td>
<td>0.333</td>
</tr>
<tr>
<td>I have been hospitalized for long time</td>
<td>same age 2(4.0)</td>
<td>0(0.0)</td>
<td>4.365</td>
</tr>
<tr>
<td>older 1(2.0)</td>
<td>5(10.0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I do not have a good social relationship</td>
<td>yes 17(34.0)</td>
<td>24(48.0)</td>
<td>1.550</td>
</tr>
<tr>
<td>I experienced failure at school in last year</td>
<td>Yes 12(24.0)</td>
<td>16(32.0)</td>
<td>2.009</td>
</tr>
<tr>
<td>I enjoy warmth, acceptance of my parents</td>
<td>yes 5(10.0)</td>
<td>3(6.0)</td>
<td>0.215</td>
</tr>
<tr>
<td>I experience hostility with my parents</td>
<td>yes 3(6.0)</td>
<td>3(6.0)</td>
<td>1.096</td>
</tr>
<tr>
<td>My parents are too controlling</td>
<td>yes 10(20.0)</td>
<td>17(34.0)</td>
<td>1.597</td>
</tr>
<tr>
<td>My father beat my mother usually</td>
<td>yes 7(14.0)</td>
<td>15(30.0)</td>
<td>4.884</td>
</tr>
<tr>
<td>I have a good relationship with my parents</td>
<td>yes 2(4.0)</td>
<td>2(4.0)</td>
<td></td>
</tr>
<tr>
<td>I have a good relationship with siblings</td>
<td>yes 7(14.0)</td>
<td>8(16.0)</td>
<td></td>
</tr>
<tr>
<td>I have experienced sexual violence</td>
<td>yes 5(10.0)</td>
<td>17(34.0)</td>
<td></td>
</tr>
<tr>
<td>I have experience the war during my past</td>
<td>yes 12(24.0)</td>
<td>15(30.0)</td>
<td></td>
</tr>
<tr>
<td>Colleagues laugh when I am revising</td>
<td>Yes 13(26.0)</td>
<td>17(34.0)</td>
<td></td>
</tr>
<tr>
<td>I experience failure to manage my stress</td>
<td>Yes 20(40.0)</td>
<td>29(58.0)</td>
<td></td>
</tr>
<tr>
<td>Most of the time I am irritable</td>
<td>Yes 19(38.0)</td>
<td>23(26.0)</td>
<td></td>
</tr>
<tr>
<td>Which kind of physical disability do you</td>
<td>deaf 1(2.0)</td>
<td>3(6.0)</td>
<td></td>
</tr>
<tr>
<td>Test Items in the Psychosocial Domain</td>
<td>Male (n=20) (N=50 (%))</td>
<td>Female (n=30) (N=50 (%))</td>
<td>X²</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>------------------------</td>
<td>---------------------------</td>
<td>----</td>
</tr>
<tr>
<td>have</td>
<td>Dumb 1(2.0) 4(8.2)</td>
<td>blind 1(2.0) 3(6.1)</td>
<td>4.592</td>
</tr>
<tr>
<td>I sometimes have eating disorder</td>
<td>Yes 18(36.0) 26(52.0)</td>
<td>0.126</td>
<td></td>
</tr>
<tr>
<td>In this year family member died</td>
<td>Yes 13(26.0) 11(22.0)</td>
<td>3.860</td>
<td></td>
</tr>
<tr>
<td>I am not happy to see my father is jobless</td>
<td>Yes 15(30.0) 18(36.0)</td>
<td>1.203</td>
<td></td>
</tr>
<tr>
<td>The income of my parents is not sufficient</td>
<td>Yes 19(38.0) 27(54.0)</td>
<td>0.408</td>
<td></td>
</tr>
<tr>
<td>I live with</td>
<td>Parents 7(14.0) 3(6.0)</td>
<td>one parent 6(12.0) 11(22.0)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Siblings 3(6.0) 3(6.0)</td>
<td>family 4(8.0) 6(12)</td>
<td>8.824</td>
</tr>
<tr>
<td></td>
<td>Alone 0 5(10.0)</td>
<td>Other 0 2(4.0)</td>
<td></td>
</tr>
<tr>
<td>I have conflict with my parents</td>
<td>Usually 6(12.0) 15(30.0)</td>
<td>Some time 5(10.0) 9(18.0)</td>
<td>3.750</td>
</tr>
<tr>
<td></td>
<td>Most of the time 9(18.0) 6(12.0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am in conflict with my friends</td>
<td>Usually 6(12.0) 7(14.0)</td>
<td>Some time 10(20.0) 16(32.0)</td>
<td>0.291</td>
</tr>
<tr>
<td></td>
<td>Most of the time 4(8.0) 7(14.0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I didn't perform well at school in national examination</td>
<td>Yes 11(22.0) 15(30.0)</td>
<td>no study 5(10.0) 5(10.0)</td>
<td>1.236</td>
</tr>
<tr>
<td>When I received my result of HIV+ I didn't accept it</td>
<td>Yes 8(16.0) 6(12.0)</td>
<td>no HIV 10(20.0) 22(44.0)</td>
<td>2.902</td>
</tr>
<tr>
<td>In last year I experienced many negative events</td>
<td>disease 4(8.2) 8(16.3)</td>
<td>death 8(16.3) 6(12.2)</td>
<td></td>
</tr>
</tbody>
</table>
Test Items in the Psychosocial Domain

<table>
<thead>
<tr>
<th>Test Items in the Psychosocial Domain</th>
<th>Male (n=20) (N=50 (%))</th>
<th>Female (n=30) (N=50 (%))</th>
<th>X²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Failure</td>
<td>2(4.1)</td>
<td>8(16.3)</td>
<td>3.625</td>
</tr>
<tr>
<td>Other</td>
<td>5(10.2)</td>
<td>8(16.3)</td>
<td></td>
</tr>
<tr>
<td>My friends do not help me</td>
<td>Yes</td>
<td>19(48.0)</td>
<td>27(54.0)</td>
</tr>
<tr>
<td>My parents do not care about me</td>
<td>Yes</td>
<td>18(36.0)</td>
<td>30(60.0)</td>
</tr>
<tr>
<td>I was made seriously angry by a break in relationship with my boyfriend/girlfriend</td>
<td>Yes</td>
<td>6(12.0)</td>
<td>8(16.0)</td>
</tr>
<tr>
<td>I am orphan</td>
<td>both parents</td>
<td>5(10.0)</td>
<td>10(20.0)</td>
</tr>
<tr>
<td></td>
<td>one parent</td>
<td>3(6.0)</td>
<td>4(8.0)</td>
</tr>
<tr>
<td></td>
<td>divorced</td>
<td>3(6.0)</td>
<td>12(24.0)</td>
</tr>
<tr>
<td></td>
<td>live together</td>
<td>9(18.0)</td>
<td>4(8.0)</td>
</tr>
</tbody>
</table>

*Statistically Significant at p= 0.05. This table showed high level of psychosocial distress with self and in relationships with friends and family. Majority of respondents gave affirmative “Yes” to all the negative test items. Only 3(6%) expressing feelings being good about themselves.

Table 4.3.2 : Distribution of Respondents by Sex in the Environmental Factors Domain (N=50)

<table>
<thead>
<tr>
<th>Environmental Factors</th>
<th>Male (n=20) N=50(%)</th>
<th>Female (n=30) N=50(%)</th>
<th>X²</th>
</tr>
</thead>
<tbody>
<tr>
<td>I live in big house where I have a room</td>
<td>yes</td>
<td>6(12.0)</td>
<td>2(4.0)</td>
</tr>
<tr>
<td>Do you live in urban or village</td>
<td>urban</td>
<td>8(16.0)</td>
<td>14(28.0)</td>
</tr>
<tr>
<td></td>
<td>village</td>
<td>12(24.0)</td>
<td>16(32.0)</td>
</tr>
<tr>
<td>How big is your house</td>
<td>small</td>
<td>12(24.0)</td>
<td>28(56.0)</td>
</tr>
<tr>
<td></td>
<td>big</td>
<td>8(16.0)</td>
<td>2(4.0)</td>
</tr>
<tr>
<td>Do you have difficulty for climbing stairs</td>
<td>yes</td>
<td>7(14.0)</td>
<td>11(22.0)</td>
</tr>
<tr>
<td>Question</td>
<td>Good (n, %)</td>
<td>Very Good (n, %)</td>
<td>Significance</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>-------------</td>
<td>------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>How do you feel when it is cold</td>
<td>6 (12.0)</td>
<td>9 (18.8)</td>
<td>0.000</td>
</tr>
<tr>
<td>How frequently do you have respiratory problems when climate change</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>sometimes</td>
<td>9 (18.0)</td>
<td>14 (28.0)</td>
<td></td>
</tr>
<tr>
<td>usually</td>
<td>7 (14.0)</td>
<td>11 (22.0)</td>
<td>0.091</td>
</tr>
<tr>
<td>every time</td>
<td>4 (8.0)</td>
<td>5 (10.0)</td>
<td></td>
</tr>
<tr>
<td>I feel uncomfortable when it is raining</td>
<td>yes</td>
<td>18 (36.0)</td>
<td>23 (46.0)</td>
</tr>
<tr>
<td>I have seen volcanic eruption/ and our materials were destroyed there</td>
<td>yes</td>
<td>7 (14.0)</td>
<td>6 (12.0)</td>
</tr>
<tr>
<td>I have experienced the rain which destroyed houses and killed some people</td>
<td>yes</td>
<td>16 (32.0)</td>
<td>25 (50.0)</td>
</tr>
</tbody>
</table>

*Statistically Significant at 0.05.

Majority (42 – 84%) of respondents had challenges with personal space living in small houses with little privacy in living arrangement and the have negative responses to climate change especially with raining season.
Table 4.3.3: Distribution of Respondents by Sex in the Family Related Factors test items (N=50)

<table>
<thead>
<tr>
<th>Family Related Factors</th>
<th>Male n=20 N=50 (%)</th>
<th>Female n=30 N=50(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other person in my family who had depression</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parents</td>
<td>5(10.0)</td>
<td>13(26)</td>
</tr>
<tr>
<td>family related</td>
<td>7(14.0)</td>
<td>5(10.0)</td>
</tr>
<tr>
<td>no one</td>
<td>8(16.0)</td>
<td>12(24.0)</td>
</tr>
<tr>
<td>Family member who had mental disorders</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mother</td>
<td>4(8.0)</td>
<td>5(10.0)</td>
</tr>
<tr>
<td>family related</td>
<td>4(8.0)</td>
<td>13(26.0)</td>
</tr>
<tr>
<td>no one</td>
<td>12(24.0)</td>
<td>12(24.0)</td>
</tr>
<tr>
<td>Other mental disorders in my family</td>
<td></td>
<td></td>
</tr>
<tr>
<td>psychosis</td>
<td>4(8.2)</td>
<td>3(6.1)</td>
</tr>
<tr>
<td>anxiety</td>
<td>4(8.2)</td>
<td>11(22.4)</td>
</tr>
<tr>
<td>PTSD</td>
<td>1(2.0)</td>
<td>5(10.2)</td>
</tr>
<tr>
<td>Chronic disease in my family</td>
<td></td>
<td></td>
</tr>
<tr>
<td>diabetes</td>
<td>3(6.1)</td>
<td>4(8.2)</td>
</tr>
<tr>
<td>asthma</td>
<td>3(6.1)</td>
<td>5(10.2)</td>
</tr>
<tr>
<td>HIV</td>
<td>2(4.1)</td>
<td>3(6.1)</td>
</tr>
<tr>
<td>other</td>
<td>0 (0.0)</td>
<td>3(6.1)</td>
</tr>
<tr>
<td>My parents are usually irritable</td>
<td>yes</td>
<td>16(32.0)</td>
</tr>
<tr>
<td>Father is irritable when he has drunk alcohol</td>
<td>yes</td>
<td>13(26.0)</td>
</tr>
<tr>
<td>My siblings are irritable</td>
<td>yes</td>
<td>13(26.0)</td>
</tr>
</tbody>
</table>

Table 4.3.3 showed that there are familial tendencies to depression and other mental health disorders with majority of respondents. The test items on family relationships also reflected high level of irritability within family functioning for parents and siblings of respondents.
4.4 Distribution of Respondents by the Various Factors Associated with Depression among Adolescents with reference to Developmental Age Categories

The various factors, psychosocial, environmental, and family related were analyzed by two age categories of 10-14 for early adolescents and 15-19 for middle-late adolescents. These are presented in Tables 4.4.1 to 4.4.3

Table 4.4.1 Distribution of Respondents by Age categories and the Psycho-social Factors (N=50)

<table>
<thead>
<tr>
<th>Psychosocial Factors</th>
<th>Response</th>
<th>Age Category 1</th>
<th>Age Category 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>10-14 (n=6)</td>
<td>15-19(n=44)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>n(%)</td>
<td>n(%)</td>
</tr>
<tr>
<td>I am in relationship with boy/ girl</td>
<td>Yes</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>I like and feel good about my self</td>
<td>Yes</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>I am HIV+ and on treatment</td>
<td>Yes</td>
<td>2</td>
<td>12</td>
</tr>
<tr>
<td>I do not hope for good life</td>
<td>Yes</td>
<td>5</td>
<td>42</td>
</tr>
<tr>
<td>Both my parents are died in last</td>
<td>Yes</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>I have been hospitalized</td>
<td>Yes</td>
<td>3</td>
<td>22</td>
</tr>
<tr>
<td>I have bad social relationship</td>
<td>Yes</td>
<td>4</td>
<td>37</td>
</tr>
<tr>
<td>I experience failure at school</td>
<td>Yes</td>
<td>1</td>
<td>27</td>
</tr>
<tr>
<td>I enjoy warmth from my parents</td>
<td>Yes</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>I experience hostility in parents</td>
<td>Yes</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>My parents are too controlling</td>
<td>Yes</td>
<td>3</td>
<td>24</td>
</tr>
<tr>
<td>My father beat my mater usually</td>
<td>Yes</td>
<td>3</td>
<td>19</td>
</tr>
<tr>
<td>I have a good relationship with my parents</td>
<td>Yes</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>I have a good relationship with siblings</td>
<td>Yes</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>I experienced sexual violence</td>
<td>Yes</td>
<td>1</td>
<td>21</td>
</tr>
<tr>
<td>I have experience the war</td>
<td>Yes</td>
<td>2</td>
<td>25</td>
</tr>
<tr>
<td>Psychosocial Factors</td>
<td>Response</td>
<td>Age Category 1</td>
<td>Age Category 2</td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>--------------</td>
<td>----------------</td>
<td>----------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10-14 (n=6)</td>
<td>15-19 (n=44)</td>
</tr>
<tr>
<td></td>
<td>n(%)</td>
<td>n(%)</td>
<td></td>
</tr>
<tr>
<td>colleagues laugh in revising</td>
<td>Yes</td>
<td>2 (33.3)</td>
<td>28 (63.6)</td>
</tr>
<tr>
<td>I failure to manage my stress</td>
<td>Yes</td>
<td>6 (100)</td>
<td>43 (97.7)</td>
</tr>
<tr>
<td>Most of the time I am irritable</td>
<td>Yes</td>
<td>6 (100)</td>
<td>36 (81.8)</td>
</tr>
<tr>
<td>I sometimes have eating disorder</td>
<td>Yes</td>
<td>5 (83.3)</td>
<td>39 (88.6)</td>
</tr>
<tr>
<td>Death of family member</td>
<td>Yes</td>
<td>1 (16.6)</td>
<td>23 (52.2)</td>
</tr>
<tr>
<td>I am unhappy with jobless father</td>
<td>Yes</td>
<td>3 (50)</td>
<td>30 (68.1)</td>
</tr>
<tr>
<td>Our income is not sufficient</td>
<td>Yes</td>
<td>6 (100)</td>
<td>40 (90.9)</td>
</tr>
<tr>
<td>I live with</td>
<td>Parents</td>
<td>3 (50)</td>
<td>7 (15.9)</td>
</tr>
<tr>
<td></td>
<td>one parent</td>
<td>1 (16.6)</td>
<td>16 (36.3)</td>
</tr>
<tr>
<td></td>
<td>siblings</td>
<td>1 (16.6)</td>
<td>5 (11.3)</td>
</tr>
<tr>
<td></td>
<td>family</td>
<td>1 (16.6)</td>
<td>9 (20.4)</td>
</tr>
<tr>
<td></td>
<td>alone</td>
<td>0 (0)</td>
<td>5 (11.3)</td>
</tr>
<tr>
<td></td>
<td>other</td>
<td>0 (0)</td>
<td>2 (4.5)</td>
</tr>
<tr>
<td>I have conflict with my parents</td>
<td>usually</td>
<td>3 (50)</td>
<td>18 (40.9)</td>
</tr>
<tr>
<td></td>
<td>some time</td>
<td>0 (0)</td>
<td>14 (31.8)</td>
</tr>
<tr>
<td></td>
<td>mostly of</td>
<td>3 (50)</td>
<td>12 (27.2)</td>
</tr>
<tr>
<td>I am in conflict with my friends</td>
<td>usually</td>
<td>4 (66.6)</td>
<td>9 (20.4)</td>
</tr>
<tr>
<td></td>
<td>some time</td>
<td>1 (16.6)</td>
<td>25 (56.8)</td>
</tr>
<tr>
<td></td>
<td>mostly</td>
<td>1 (16.6)</td>
<td>10 (22.7)</td>
</tr>
<tr>
<td>I didn't perform well at school</td>
<td>Yes</td>
<td>1 (16.6)</td>
<td>25 (56.8)</td>
</tr>
<tr>
<td>I did not accept results of HIV+</td>
<td>Yes</td>
<td>2 (33.3)</td>
<td>12 (27.2)</td>
</tr>
<tr>
<td>In last year i experienced many negative events</td>
<td>disease</td>
<td>1 (16.6)</td>
<td>11 (25)</td>
</tr>
<tr>
<td></td>
<td>death</td>
<td>2 (33.3)</td>
<td>12 (27.2)</td>
</tr>
<tr>
<td></td>
<td>failure</td>
<td>1 (16.6)</td>
<td>9 (20.4)</td>
</tr>
<tr>
<td></td>
<td>others</td>
<td>2 (33.3)</td>
<td>11 (25)</td>
</tr>
<tr>
<td>My friends do not help me</td>
<td>Yes</td>
<td>6 (100)</td>
<td>40 (90.9)</td>
</tr>
<tr>
<td>Psychosocial Factors</td>
<td>Response</td>
<td>Age Category 1 10-14 (n=6)</td>
<td>Age Category 2 15-19(n=44)</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>----------</td>
<td>----------------------------</td>
<td>---------------------------</td>
</tr>
<tr>
<td>My parents do not care about me</td>
<td>Yes</td>
<td>6</td>
<td>42</td>
</tr>
<tr>
<td>I was made seriously angry by a break in my relationship</td>
<td>Yes</td>
<td>0</td>
<td>14</td>
</tr>
<tr>
<td>I am orphan</td>
<td>parents</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>one parent</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>divorced</td>
<td>2</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>live together</td>
<td>2</td>
<td>11</td>
</tr>
</tbody>
</table>

Table 4.4.1 showed that respondents in the early stage of adolescence were few (6, 12%). However, high percentages of the respondents responded in the affirmative to almost all the negative statements and gave negative responses to the test items that were supposed to be reflecting positive psychosocial disposition.

<table>
<thead>
<tr>
<th>Environmental Related Factors</th>
<th>Responses</th>
<th>Age Category 1 10-14 (n=6)</th>
<th>Age Category 2 15-19(n=44)</th>
<th>Total (N%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I live in big house where I have room</td>
<td>Yes</td>
<td>0</td>
<td>8</td>
<td>13.33</td>
</tr>
<tr>
<td>Do you live in urban or village</td>
<td>Urban</td>
<td>2</td>
<td>20</td>
<td>45.4</td>
</tr>
<tr>
<td></td>
<td>Village</td>
<td>4</td>
<td>24</td>
<td>54.5</td>
</tr>
<tr>
<td>How big is your house</td>
<td>Small</td>
<td>5</td>
<td>35</td>
<td>79.5</td>
</tr>
<tr>
<td></td>
<td>Big</td>
<td>1</td>
<td>9</td>
<td>20.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0</td>
<td>18</td>
<td>40.9</td>
</tr>
<tr>
<td>---------------------------</td>
<td>-------</td>
<td>-----</td>
<td>-----</td>
<td>------</td>
</tr>
<tr>
<td>Do you have difficulty for stairs</td>
<td>Yes</td>
<td>0</td>
<td>0</td>
<td>18</td>
</tr>
<tr>
<td>How do you feel when it is cold</td>
<td>Good</td>
<td>2</td>
<td>33.33</td>
<td>13</td>
</tr>
<tr>
<td>How many times did you had respiratory problems when climate change</td>
<td>Sometimes</td>
<td>5</td>
<td>83.33</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>Usually</td>
<td>0</td>
<td>18</td>
<td>40.9</td>
</tr>
<tr>
<td></td>
<td>Every time</td>
<td>1</td>
<td>16.66</td>
<td>8</td>
</tr>
<tr>
<td>I feel bad when it is period of raining</td>
<td>Yes</td>
<td>5</td>
<td>83.33</td>
<td>36</td>
</tr>
<tr>
<td>I have seen volcanic problems</td>
<td>Yes</td>
<td>1</td>
<td>16.66</td>
<td>12</td>
</tr>
<tr>
<td>I have experienced the rain problems</td>
<td>Yes</td>
<td>5</td>
<td>36</td>
<td>36</td>
</tr>
</tbody>
</table>
Table 4.4.3 Distribution of Respondents by Age categories and the Family Related Factors (N=50)

<table>
<thead>
<tr>
<th>Family Related Factors</th>
<th>Responses</th>
<th>Age Category 1 (n=6)</th>
<th>Age Category 2 (n=44)</th>
<th>Total (N%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n(%)</td>
<td>n(%)</td>
<td>n(%)</td>
<td></td>
</tr>
<tr>
<td>Other person who had (depression)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parents</td>
<td>2</td>
<td>33.3</td>
<td>16</td>
<td>36.3</td>
</tr>
<tr>
<td>Family</td>
<td>1</td>
<td>16.6</td>
<td>11</td>
<td>25</td>
</tr>
<tr>
<td>Family member with other mental</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother</td>
<td>1</td>
<td>16.6</td>
<td>8</td>
<td>18.1</td>
</tr>
<tr>
<td>Family</td>
<td>1</td>
<td>16.6</td>
<td>16</td>
<td>36.3</td>
</tr>
<tr>
<td>No one</td>
<td>4</td>
<td>66.6</td>
<td>20</td>
<td>45.4</td>
</tr>
<tr>
<td>Other mental disease in my family</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychosis</td>
<td>1</td>
<td>16.6</td>
<td>6</td>
<td>13.6</td>
</tr>
<tr>
<td>Anxiety</td>
<td>0</td>
<td>0</td>
<td>15</td>
<td>34.0</td>
</tr>
<tr>
<td>PTSD</td>
<td>1</td>
<td>16.6</td>
<td>5</td>
<td>11.3</td>
</tr>
<tr>
<td>Family members with Chronic disease</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diabetes</td>
<td>0</td>
<td>0</td>
<td>7</td>
<td>15.9</td>
</tr>
<tr>
<td>Asthma</td>
<td>1</td>
<td>16.6</td>
<td>7</td>
<td>17.9</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>6.8</td>
</tr>
<tr>
<td>My parents are usually irritable</td>
<td>Yes</td>
<td>6</td>
<td>100</td>
<td>36</td>
</tr>
<tr>
<td>Father is irritable when he has drunk alcohol</td>
<td>yes</td>
<td>6</td>
<td>100</td>
<td>32</td>
</tr>
<tr>
<td>My siblings are irritable</td>
<td>yes</td>
<td>5</td>
<td>83.3</td>
<td>24</td>
</tr>
</tbody>
</table>
CHAPTER FIVE: DISCUSSION

5.1 Introduction

Findings from the study are discussed in the context of the parameters used in the analysis. The discussion covers observations from the socio demographic characteristics of respondents, the psychosocial, environmental, familial factors observed to be associated with depression among the respondents using their sex and age as personal variables used in the vicariate analysis.

Socio-Demographic Characteristics of Respondents as Factors of Reference in Depression in Adolescents

There is increasing attention to depression in adolescents – (Cesar et al., 2013, p11); (Survey, 2015p37); (Sserunjogi et al., 2016) with due consideration for the peculiarity of the adolescent child. Findings from this study showed that more females were receiving treatment for depression from the clinical sites of study. This observations support earlier studies (Survey, 2015p37), (Kim et al., 2015), (Hirota, Milavi and McNicholas, 2016) that indicated higher prevalence of depression in females compared to males. While the effect of hormonal changes as such may be related to mood changes and pathology needs to be given close watch among adolescents transiting from puberty contrary findings in the Uganda study by (Sserunjogi et al., 2016) with more males with depression along other factors such as alcohol use, loss of parents, living in large families makes it important to pay attention to depressive symptoms in both males and female adolescents. There is also a need to provide more support to girls as they transit from puberty to full adolescence to reduce stress that may be related to biological changes associated with the transition. Such support will also help to detect adolescents with early depressive symptoms. When risks to depression and actual depression is detected early and managed effectively in adolescents, the prevalence in adulthood will reduce. This observation gives support to paying more attention to those factors that may be biological, (sex/gender related) and other socio-ecological factors that negatively contribute to health and wellbeing of all adolescents but with more attention to female adolescents especially as such may be related to relationships in the homes and in intimate relationships.

While there are few respondents in this study in early adolescents, depression among adolescents
in Rwanda seemed to be higher in middle to late adolescents. This finding is similar to the findings in the Uganda study (Sserunjogi et al., 2016), (Survey, 2015). There is high need to sensitize parents and health care providers about possibilities of depressive symptoms in adolescence to remove assumptions of change in behaviour to transition through adolescence to adulthood especially when other negative psychosocial, environmental and familial factors are present.

In this study, higher percentage of respondents were students (54%) compared to artisans and those not in any job. The challenges of schooling as related to school work, failure, negative responses from colleagues and from school work were also seen demonstrated among respondents. Little was seen in literature with regards to school work, school physical and psychosocial environment and depression among adolescents pointing to the need for further exploration of the roles of the school environment to occurrence, early detection and management of depressive symptoms among adolescents.

**Psychosocial Factors Associated with Depression among Respondents**

Findings from this study showed high association of depression to psychosocial factors in all areas of personal (micro system), family and friends (mezzo system) and (environmental (exo systems) conditions (Lakhan & Ekúndayò, 2013). High percentages of respondents had low self-esteem and were almost in a state of hopelessness. There were high percentages of respondents who responded in the affirmative in all the negative statements and very high percentages who also responded negatively to the positive test items. The psychosocial factors are unfavorable to most adolescents with regards to self, friends, family (parents and siblings) in this study. Ill health, especially being HIV positive and sexual violence constitute additional burdens in addition to family induced psychosocial factors to adolescents in this study. These are in line with previous observations (Kinyanda et al., 2013). Findings from this study are in agreement with theoretical ideas of the ecological theory of depression with elements in the personal, family, friends, school and other social environment related factors (Lakhan& Ekúndayò, 2013).

Very high percentage of adolescents with low family income is associated with depression and high number in families is all also associated with low quality and poor psychosocial responses from the respondents in this study. These findings are similar to what obtained in Uganda.
Poor socio-economic family status, poor living environment increase stress and irritability and contribute to family dysfunction that all contribute to depression in adolescence.

**Environmental Factors Associated with Depression among Respondents**

Findings from this study showed climate related influence on respondents as most of them had negative responses to change in the weather. From the basis of family socio-economic status, adolescents in the study also had low access to personal spaces and privacy which would also contribute to experiences of more irritability as depicted under family related factors.

**Family Related Factors Associated with Depression among Respondents**

Findings from this study showed high level of contributory factors to depression from the nature of family composition, family living environment and family relationships with negative responses to all the statements that have things to do with the family among respondents. Family dysfunction is a major challenge to the wellbeing of adolescents. Familial tendency to depression and other mental disorders increase the risks of adolescents to depression. Irritable family members, (parents, siblings) and alcoholism are major challenges pointing to the need for family focused support and care in the context of management of depression in adolescents. High burden of other chronic diseases make demands on family resources that could further challenge relationships among family members. Mental problems in the family 52%, and chronic diseases 50% are silithly high in Rwanda (Of et al., 2013).
CHAPTER SIX: CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusion

In concluding this study, despite the low number of respondents in this study, depression in adolescents as documented from three hospital admissions is associated with high level of negative psychosocial, environmental and family related factors in Rwanda. Adolescents in schools are more affected, family history; personal, familial and environmental factors are all complementary to the occurrence of depression in adolescents in Rwanda. Screening opportunities for early detection of depressive symptoms, counseling, social support to families of low-social status would be most desirable to reduce the burden of depression in adolescents in Rwanda.

6.2 Recommendations

Nursing Education

1. The knowledge of the risk for depression, the diagnostic cues and management need to be incorporated into teachings on adolescents health and nursing students, some of whom may also be adolescents must be assisted to manage depressive symptoms

Nursing Practice

1. There is an urgent need for screening of adolescents, especially in schools for risk status for depression for early detection of depressive symptoms, counseling, support and referral for care
2. Social interventions are needed to support family quality relationship and functioning
3. Counseling and Support services are needed to target adolescents and families who have familial tendencies for mental disorders in schools and at the community levels.
4. Advocacy, and mass education through presentations about depression, signs and symptoms, management and complications need to be ongoing in society
5. Adolescentsfriendly services to encourage consultation of mental health care providers when there is any problem without shame or fear should be provided.
Nursing research

1. Future research studies to focus on screening of in-school and out-of school adolescents to determine the prevalence of depressive symptoms, associated factors and interventions that would reduce the burden of depression in adolescence.
REFERENCES

BIBRIOGRAPHY


Services, H. (no date) ‘Data Dissemination’.


‘The comparison qualitative and quantitative research 1’ (2015), 5, pp. 1111–1117.


APPENDIX: 1Tool

Instructions to the Interviewer

Section A

Dermographic

1. Age last birthday………

2. Sex : Male……….Female…………

3. Educational status:
   (a) No western education _____ (b) Primary School Completed ____ (c) Secondary School Completed ____ (d) Vocational training ____ (indicate type of vocation)

4. Residence

   Province……

   District ………

   Sector………. 

   Cell……….

   Village……

5. Religion: Christianity ___ Islam ____ Traditional ______ Please, specify denomination: e.g Catholic, Methodist _____________________

6. Occupation: Student ____ trading ______ Artisan _____

7. Job related questions

   What do you do?…….

   How long is from home to your work?..........
How much do you gain monthly? …

8. Number of persons in the family _______ No of siblings by Sex Male ____ Female ____

9. Number among the sibling _____

10. When was the first time you came to the hospital for the health problem that brought you to this hospital?

11. How long have you been receiving treatment for the problem that brought you here? Indicate number of weeks, months or years? ______

Please, respond yes or no to the following:

12. I am in a relationship (romantic love affair) with a man _____, please indicate the Age __

13. I am in a relationship (romantic love affair) with a woman ______, please indicate the Age ___

Section B

**Psychosocial factors:**

Now let us talk about you and other things. Please, tick YES for which of the statement applies to you and NO for those that do not apply to you.

<table>
<thead>
<tr>
<th>SN</th>
<th>Statement</th>
<th>Yes</th>
<th>No</th>
<th>Additional information</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I like and feel good about myself</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>I am HIV+ and I take the second line of ARV</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>I do not hope for having good life in my future</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Both my parents died in last month by traffic accident</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>I have been hospitalized for long time before I have</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>---</td>
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<td>---</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>depression.</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>I am in a relationship (romantic love affair) with a man</td>
<td>Please indicate age of the person</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>I am in a relationship (romantic love affair) with a woman</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>I do not have a good interpersonal relationship with friends</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>I failure at school in last year</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>I enjoy high level of warmth and acceptance from my parents</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>I experience high level of hostility with my parents</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>My parents are too controlling</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>My father beat my Mather usually</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>I will say I have a very good, friendly and open interpersonal relationship with my parents</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>I will say I have a very good, friendly and open interpersonal relationship with my siblings</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Psychological factors:**

1. I have experienced sexual violence many times in my life

2. I have experience the war during may past

3. My colleagues laugh at me when I am revising my lessons

4. I failure to manage my stress when I face with many responsibilities

5. Most of the time I am irritable.

6. Which kind of physical disability do you have?......

7. I sometimes have eating disorder

8. In this year, .... family members died (indicate number of died persons).
9. I am not happy to see my father without job

10. The income of my parents is not sufficient.

**Social factors:**


2. I have conflict with my parents: a. usually? b. Sometimes c. Most of the time

3. I am in conflict with my friends: a. usually b. Sometimes c. Most of the time

4. I didn’t perform well at school in National examination

5. When I received my result of HIV+ I didn’t accept it

6. In last year I experienced many negative events: being HIV positive, death of my parents and failure in class

7. My friends do not help me when is needed

8. My parents do not have time to care about me

9. About my parents: both died

         One died

         Divorced

10. I didn’t accept to be separated with my boy/girl friend
Section C

Environmental and economic factors

House related question

1. I live in big house where I have a room to myself enough private space........

2. Do you live in urban or village?........

3. How big is your house?.......

4. Do you have difficulty for climbing stairs?........

Climate related

1. How do you fill when it is cold?............

2. How many times did you had respiratory problems when climate change....

3. I do not feel comfortable when it is period of raining.

Disasters related information

1. I have seen volcanic eruption and our materials was destroyed there

2. I have experienced the rain which destroyed houses and killed some people

Section D

Family related factors associated with depression

1. Other person who had experienced the same disease as this I have in the family: 1. my Mother....... 2. my father...... 3 my Aunt....... 4. My Uncle....... 5. Grandmother....... 6. Grandfather....... 7. No one.......

3. Which kind of other mental problems do you have in family?………

4. Which chronic family medical disease are in your family?………

5. Other disease of father

6. Other disease of mother

7. My parents are usually irritable, angry, hash, in bad mood and anxious

8. My father is mostly irritable when he has drunk alcohol

9. My siblings are hash irritable and anxious
APPENDIX: 2 CONSENT FORM FOR PARTICIPATION IN RESEARCH

TO ASSESS RISK FACTORS OF DEPRESSION IN ADOLESCENT IN 3 SELECTED HOSPITALS.

I………………………………………………………………………………………father/mother/guardian of…………………………………………………………………………………………..age of 12 to 14 hereby consent to participate in research as parent/guardian of ASSESSMENT OF RISK FACTORS OF DEPRESSION IN ADOLESCENT in responding to all questions which will be asked .After having enough information about this research; details and purpose of the study, how to respond to questions and gating explanation about ethical consideration on my child ,about freedom in responding ,about my confidentiality as the information will be published and after being aware that it is acceptable to withdraw if no interested , I agree to participate and provide the information needed.

SIGNATURE OF PARTICIPANT

………………………Names………………………………………………………………………………Date…………

SIGNATURE OF RESEARCHER

………………………Names………………………………………………………………………………Date…………
APPENDIX: 3 ASSENT FORM

TO ASSESS RISK FACTORS OF DEPRESSION IN ADOLESCENT IN 3 SELECTED HOSPITALS.

I…………………………………………………………………………………………Age 15 to 19 years I hereby consent to participate in research OF ASSESSMENT OF RISK FACTORS OF DEPRESSION IN ADOLESCENT in responding to all questions which will be asked. After having enough information about this research; details and purpose of the study, how to respond to questions and gating explanation about ethical consideration, about freedom in responding, about my confidentiality as the information will be published and after being aware that it is acceptable to withdraw if no interested, I agree to participate and provide the information needed.

SIGNATURE OF PARTICIPANT

……………………….Names………………………………………………………………Date…………

SIGNATURE OF RESEARCHER

……………………….Names………………………………………………………………Date…
APPENDIX: 4 INFORMATION LETTER

My name is UWAMBAJIMANA Jocelyne, registered nurse, student in Rwanda University College of Medicine and Health Sciences Kigali Campus (UR CMHS), In Master’s Program Paediatric Track.

Dear respondent,

I am UWAMBAJIMANA Jocelyne from CMHS conducting this study on FACTORS ASSOCIATED WITH DEPRESSION IN ADOLESCENTS to provide information to help care providers in taking decision to improve care for young people like you. I am requesting that you participate in this study. All the information you provide will be treated as confidential and will only be used for this study. Your identity will be protected.

I………………………………………………………………………agree to participate in the study
APPENDIX 5: Ethical clearance

UNIVERSITY OF RWANDA
COLLEGE OF MEDICINE AND HEALTH SCIENCES
CMHS INSTITUTIONAL REVIEW BOARD (IRB)

Kigali, 22/02/2017
Ref: CMHS/IRB/161/2017

UWAMBAJIMANA Jocelyne
School of Nursing and Midwifery, CMHS, UR

Dear UWAMBAJIMANA Jocelyne

RE: ETHICAL CLEARANCE

Reference is made to your application for ethical clearance for the study entitled “Assessment Of factors Associated With Depression In Adolescents From three Selected Hospital In Rwanda”.

Having reviewed your protocol and found it satisfying the ethical requirements, your study is hereby granted ethical clearance. The ethical clearance is valid for one year starting from the date it is issued and shall be renewed on request. You will be required to submit the progress report and any major changes made in the proposal during the implementation stage. In addition, at the end, the IRB shall need to be given the final report of your study.

We wish you success in this important study.

Professor Kato J. NJUNWA
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
APPENDIX6: To whom

UNIVERSITY OF RWANDA
COLLEGE OF MEDICINE AND HEALTH SCIENCES
SCHOOL OF NURSING AND MIDWIFERY
Kigali, on 28 / 02 / 2017
Ref. No: ...... / UR-CMHS/SoNM/17

TO WHOM IT MAY CONCERN

Dear Sir/Madam,

Re: Request to collect data

Referring to the above subject, I am requesting for permission for UWAMBAJIMANA Jocelyne, a final year student in the Masters of Science in Nursing at the University of Rwanda/College of Medicine and Health Sciences to collect data for her research dissertation entitled FACTORS ASSOCIATED WITH DEPRESSION IN ADOLESCENTS FROM THREE SELECTED HOSPITALS IN RWANDA

This exercise that is going to take a period of 6 weeks starting from 1st March 2017 to 12th April 2017 will be done at REMERA RUKOMA DISTRICT HOSPITAL, MASAKA DISTRICT HOSPITAL AND NDERA NEUROPSYCHIATRIC HOSPITAL

We are looking forward for your usual cooperation.

Sincerely,

Dr. Donatilla MUKAMANA, RN, PhD
Dean, School of Nursing and Midwifery
College of Medicine and Health Sciences

Email: schoolofnursingandmidwifery@ur.ac.rw, P.O.Box: 3286 Kigali-Rwanda, Website: www.ur.ac.rw
APPENDIX7: Permission of collecting data in Remera Rukoma Hospital

EGLISE PRESBTERIENNE AU RWANDA

HôPITAL REMERA RUKOMA
BP 201 KIGALI
Rukoma, on 8 March 2017

To UWAMBAJIMANA Jocelyne

RE: Acceptance for permission to collect data

I am pleased to inform you that your request for permission to collect data for your research dissertation entitled "Factors associated with depression in adolescents from three selected hospitals in Rwanda" in Remera Rukoma hospital has been accepted.

Thank you for your time to choose this hospital,

Yours Sincerely,

Dr. JARIBU Théogène
Director of Remera Rukoma Hospital

[Signature]
APPENDIX8: Permission of collecting data in Ndera Hospital

Ndera, March 15, 2017

UWAMBAJIMANA Jocelyne
Masters of Science in Nursing
COLLEGE OF MEDICINE AND HEALTH SCIENCES

Dear,

**RE: Permission to conduct a research**

The reference is made to your letter of March 2nd, 2017 related to the above subject; I am pleased to inform you that your request has been granted. Therefore, you are allowed to conduct your research in Ndera Neuropsychiatric Hospital, which topic is entitled “Factors associated with depression in adolescents from three selected hospital in Rwanda”.

I wish you all the best.

Brother Charles NKUBILI
Director General

Cc :
Mr. Ndayisenga Eraste, Vice Director of Nursing
APPENDIX9: Permission of collecting data in Masaka Hospital

REPUBLIC OF RWANDA

March, 7th 2017

Ref. 3/MSK/DH/2017

KICUKIRO DISTRICT
MASAKA HOSPITAL.
PO.BOX: 3472 KIGALI
E-mail: masaka.hospital@moh.gov.rw

UWAMBAJIMANA Jocelyne
UR-CMHS/So NM
MASTER’S OF SCIENCE IN NURSING
0784230386

Re: Permission to collect data

Dear Madam,

Referring to your letter written on 2nd March 2017 requesting to collect data for your research dissertation entitled “Factors associated with depression in adolescents from three selected hospitals in Rwanda” in Masaka District Hospital, I would like to inform you that your request is accepted and you will collect data in a period of six week starting from 09th March 2017 to 21st April 2017.

Yours sincerely,

Dr. Marcel UWIZEYE
Acting Director of Masaka District Hospital.